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ABSTRACT

This report summarizes the First APEID (Asian Programme of Educational Innovation for Development) Regional Planning Panel Meeting on Work and Vocational Experiences in General Education that focused on the linking of education to the world of work. An introduction gives an overview of the panel's aims, the basic principles and concepts advocated by the panel, and the context. Chapter 2 reviews the current situation in the participating countries--Bangladesh, China, India, Indonesia, Japan, Pakistan, the Philippines, the Republic of Korea, Sri Lanka, the Socialist Republic of Viet Nam, and Thailand. Areas considered are national policies, programs, and plans; curriculum; instructional materials; physical facilities; preparation of teachers; and career guidance. Chapter 3 analyzes eight issues and growth points identified for in-depth study: (1) work ethics and work habits, (2) vocational orientation and guidance, (3) taking education to the work situation, (4) utilization of local human and material resources, (5) how to promote public acceptance, (6) applied research and summing up of experiences, (7) assessment of students' performance, and (8) provision of teachers. Future activities suggested by the panel are discussed in chapter 4, namely intercountry study visits, amplification of country reports and preparation of a directory, and case studies of national experiences. Appendixes include the opening address, agenda, and a list of participants. (YLB)

EDUCATION AND WORK IN GENERAL SECONDARY SCHOOLS

Report of a Regional Planning Panel Bangkok, 24 June - 5 July 1982

UNESCO REGIONAL OFFICE FOR EDUCATION
IN ASIA AND THE PACIFIC
Bangkok, 1982

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PREFACE

The APEID Regional Planning Panel on Work and Educational Experiences, at its first meeting, held in Bangkok from 24 June to 5 July 1982, addressed itself to the following objectives:

1. To review research, policies, and programmes under implementation, or planned for the immediate future, in the participating countries, in respect of vocational courses and work experience in general secondary schools, bringing out the issues and problems on which the countries are seeking relevant experiences, ideas and insights.

2. To explore approaches to the design and development of curricula, including contents, methods, instructional aids, and evaluation; pre-service and in-service training of vocational teachers and other personnel, and career counselling.

3. To prepare suggestions on design elements of future studies, and inter-country exchanges.

The Meeting was attended by participants in their personal capacities, from Bangladesh, the People's Republic of China, India, Indonesia, Japan, Pakistan, the Philippines, the Republic of Korea, Sri Lanka, Thailand, and the Socialist Repubilc of Viet Nam.

Procedures of the Meeting

The Meeting was opened by Mr. Raja Roy Singh, Assistant Director-General of Unesco Regional Office for Education in Asia and the Pacific, Bangkok, who explained the objectives and the expected outcomes of the Meeting (full text at Annex I).

The participants elected the following officers of the Meeting:

Chairman - Mr. Swasdi Suwanaagsorn (Thailand)

Vice-Chairmen - Mr. Michitoshi Urabe (Japan)
- Dr. M.A. Bhatti (Pakistan)

Rapporteur - Mr. M.M. Premaratene (Sri Lanka)

Mr. A. Dyankov acted as Secretary of the Meeting.

The following members of the Drafting Committee helped in the preparation of the report of the Meeting:

Mr. S. Sathyam (India)

Prof. Socorro Villalobos (Philippines)

The names of the participants, the officers of the Meeting and Working Groups are listed in Annex 2 of this report.

The Meeting conducted its business in plenary and group sessions.

As its concluding session on 5 July 1982, the Meeting adopted the draft report with modifications to be incorporated in the final report.

This report does not necessarily represent any views of the governments of the participating countries in the Meeting.

CHAPTER ONE

INTRODUCTION

The APEID Regional Planning Panel on Work and Educational Experiences (the Panel) recognized that besides the classroom and the teachers there is the family, the society and life itself to reckon within the teaching-learning process. Children have to be exposed to a wide range of real-life situations. Children are continually influenced by their immediate environment which, if properly utilized, can become an instrument of education, modifying traditional patterns of living and removing their inhibitive aspects. Education is beginning to be organized as a learning system to take the individual and society progressively towards higher reaches of human thought and behaviour.

Viewed so comprehensively, education should enable individuals in a community to acquire the knowledge, skills, habits, attitudes, and values necessary for:

a) the successful performance of their responsibilities in society;

b) a rewarding personal and social life by developing innate talents; powers of creative enterprise and team spirit; and the capacity to appreciate the splendour of life revealed by communion with nature and man with man;

c) a rich contribution to the future development of society and mankind.

The objectives of education so generally stated need not necessarily govern equally all its stages. The objectives at the secondary school level must necessarily be distinct from those for education beyond this stage. The Panel recognized that for harmonious personality development, it is necessary, at the secondary school level, to expose children not only to scholastic areas for intellectual development but also to situations where they will have opportunities to work with their hands and develop proper attitudes towards manual labour. The aim of this curricular area is to provide children with opportunities for participating in social and economic

activities inside and outside the classroom, enabling them to understand scientific principles and processes involved in different types of work and in the setting in which they are found in the physical and social environment. In short, it is not meant to be just learning to do work; it is meant to be work education.

The Panel also noted that programmes of interaction between education and productive work have to be developed in the perspective of life-long education. The importance of effective interaction between education and the world of work has to be appreciated in the context of preparing all children and young persons for their future work and life and personal satisfaction, and strengthening the relevance of programmes of life-long learning. Efforts to establish such interaction should, therefore, relate to all levels and all forms of education.

Educators should offer flexible educational programmes which keep in view the capacities of the children, the needs of the society, the limitations of the teachers, and the total limitations of the schools.

Flexibility in curriculum has two dimensions. One is that the curriculum content should be related to the local needs and the facilities available. The other is the allotment of time. The Panel cautioned that flexibility should not mean dilution of standards or of efforts. In order to promote public acceptance of these changes in education, it is essential to ensure that education is neither diluted nor seen to be diluted through the integration of work experience.

Work experience should be relevant to meet the needs of the community and the individual learner. Public acceptance, it was felt, will be more readily forthcoming if work experience is seen to be socially useful.

The Panel realized that a large number of children in the developing countries either do not enter the school system or drop out soon after entry. Also, in the context of a life-long process of education, large numbers of youth and adults have to be included in out-of-school situations. Interaction between education and work experience has, therefore, to be established in two ways:

a) by integrating work experience in the educational process;

b) by taking education to work situations.

These concepts do not admit ad hoc or voluntary participation. The experience of many countries has also shown that the approach of providing work education on an optional basis does not serve the purpose of linking education with work. Exposure to work experience has inevitably to be compulsory.

Identification of the work elements inserted in the school subjects and emphasizing them with a view to bridging the gaps between education and work may make learning more effective. Also, it will minimize the requirement of a large scale separate recruitment of vocational teachers. The Panel commended this approach but advised caution, because it could also lead to a forced and far-fetched correlation between work and the school subjects. Activities which do not have a direct bearing upon the subject content should not be included.

The basic principles and concepts advocated by the Panel are borne out by the experiences of the participating countries, where the introduction of work education has developed through the following stages:

a) introduction of separate vocational courses;

b) introduction of work experience (optional), as well as vocational subjects in general secondary schools;

c) introduction of work experience and vocational subjects (compulsory) in general secondary schools;

d) extension of work experience to senior secondary schools; and

e) introduction of work experience in the perspective of life-long education.

The experiences of Indonesia, Pakistan and Thailand support the introduction of production-oriented, skills education in general education with the objective of developing the knowledge, attitudes, and general capabilities of the student to cope with practical problems. The experiences of Bangladesh and the Republic of Korea have shown that some work education has to be compulsory. The experiences of Sri Lanka and the Philippines stress the

importance of providing 'meaningful experiences' to children from the very beginning so as to equip even the eventual dropouts with the ability to work and earn a living. The advocacy of the Socialist Republic of Viet Nam to link school with society, supports the philosophy of 'learning to be', underlying the Panel's commendation of the introduction of context-oriented work experience in service to the community. China and India have highlighted the aspect of students working for the benefit of the local community, which reinforces the concept of socially useful work experience. Japan has gone to the extent of advocating that students should be given experience of the pleasure of work, and that students should gain work satisfaction. These references lend credence to the Panel's observations about 'the capacity to appreciate the splendours of life...' and about 'personal satisfaction'.

CHAPTER TWO

REVIEW OF THE CURRENT SITUATION

A review of the participating countries' experiences shows that most of them have, in recent, years, either adopted a new policy or revitalized existing programmes for the introduction of vocational courses and work experience in general secondary schools. In accord with the new policies or emphases, new curricula have been introduced within the past 2 to 3 years in the majority of the countries. In some cases, these are still being tried out in pilot schools. Successful examples of implementation of new curricula have been documented by some countries for emulation by others. The institutions have also been identified and their achievements widely publicised in at least two of the participating countries.

There is a growing feeling that a knowledge base for introducing specific curricular changes or new structures has not been developed. This is attributed to a lack of investment in applied research and evaluation. It has been argued that some programmes are still in too early a stage to be evaluated. Even in the countries where evaluations have been conducted the outcomes of such evaluations have not in all cases been summed up for renewing the programmes.

There are several problems and issues which need urgent attention and have in some countries at least, been the subjects of study and reflection for some years. The two key concerns which have emerged are: the need for effective guidance and counselling services; and the need to ensure that work experience and vocational courses promote work ethics and positive attitudes towards work as their principal objectives. Efforts are being made to embed work experience in all subjects rather than introduce it as an aspect or adjunct of vocational courses only.

Policies, Programmes, Problems, and Plans

The Panel summarized the emerging trends toward convergence in the countries as being characterized by the following basic principles:

1. Socially useful work experience should be provided for all - in institutions, homes, communities, enterprises;

2. Vocational courses or work experience should not be, nor be seen by the public, to be a dilution of education;

3. Work experience should be embedded in all school subjects;

4. Teaching of arts and work experience should be interlinked;

5. These should be parental and community involvement; and

6. Work experience should promote positive attitudes to work, inculcate work habits and develop work ethics.

In Bangladesh, secondary general education is diversified so that students may take industrial arts, home economics or an agricultural group of subjects. Experience has shown that this approach does not serve the purpose of linking education and work. The Government has therefore decided to introduce an integrated system of education up to grade 10 from 1983. The integrated curriculum includes work experience as one of the subjects in all 7,000 secondary schools.

Based on the surveys which took stock of the situation as of 31 March 1981, 90 per cent of these 7,000 schools do not have the necessary physical facilities to effectively introduce work experience. The Government is therefore currently engaged in considering ways and means to provide the minimum required facilities. The problem of finding trained teachers for this subject is equally acute and the Government has entrusted the Bangladesh Education Extension Research Institute (an Associated Centre of APEID) to run special training courses for the teachers. Lack of funds is likely to impede efforts to implement the plan for either providing physical facilities or training the teachers.

In China, the Government has been making efforts to put into effect the principle of integration of education and productive labour.

In accordance with the needs of socialist modernization, the Government emphasized in 1978 the necessity to further implement the principle of combining school education with productive labour under the new conditions

for the building of a socialist spiritual civilization, as well as a material civilization.

In 1958, the Chinese Ministry of Education promulgated that work oriented courses should be included in the curricula of all secondary schools. According to the statistics of the Educational Ministry, by the end of 1965, 4,000 middle schools had implemented this principle.

After the Cultural Revolution, in 1978, a national educational conference was held, in which work education was again emphasized by the Ministry of Education and made an important component of Chinese education.

To find out the results of work education, the Ministry of Education sent research personnel from the Division of General Education and the Central Institute of Educational Research to some middle schools in different provinces and cities. They visited factories and farms in which students worked, and talked to teachers and students. Experiences were summed up and reports were prepared.

For the general secondary schools, it is stipulated that junior high school students spend two weeks in productive labour and senior high school students four weeks. The students are offered work and technical courses, which are aimed at fostering correct attitudes towards physical labour and providing the students with initial work skills, including some basic skills in industrial and agricultural work and social service. Some full-time high schools also offer courses in 'Elements of agriculture', 'Elements of industry', or other vocational technical courses.

The four weeks of physical labour provided mainly for urban high schools are used for industrial, agricultural or service jobs, in a concentrated or dispersed way. As for rural high schools, the students are involved in agricultural work mainly in vacations during busy farming seasons, and the actual time spent in physical labour is more than that provided for it by the state.

For the integration of school education and work, many of the general schools run affiliated factories or workshops, farms, and community forests as bases for the students' participation in productive labour. While these school-run factories and farms produce good-quality products, the ultimate purpose is to implement the state-stipulated educational policy in enabling the young generation to develop in an all-round way.

Education and work in general secondary schools

The structural reform of secondary education has promoted the rapid restoration and development of work-oriented education in general secondary schools since 1979.

In 1981, a national conference was held, in which the bureau of education of each province made reports and selected schools offered their experiences. With all the materials collected from the grass-roots and with a review of experiences, it was found that through work education, students developed correct work ethics and work habits and a better understanding of their academic study and improved health. Upon graduation they also found it easier to get employment. The researchers concluded that work education can help the students to develop morally, intellectually and physically. A summary report has been completed by the Chinese Central Institute of Educational Research and will be presented to Unesco.

China adopts the following methods in conducting work-oriented education to implement the principle of combining education with productive labour in general secondary schools:

a) productive labour is included in the teaching programme;

b) school-run factories or farms are the bases for teaching and for productive work;

c) part-work, part-study activities are widely carried out; and

d) students are organized to work for the public good, inside or outside schools.

Problems encountered in the implementation of the programmes are briefly stated below:

a) need to foster and strengthen common understanding of and close co-operation between the Educational sector and the Departments of Planning and Labour;

b) need to convince the public, teachers and students of the importance of work education in general secondary schools;

c) lack of funds and the need to improve material conditions; and

d) lack of research and feed-back information to work out programmes that could be built into the the general education programme with the co-operation of all, so that particular areas of interest could be strengthened.

In India the concept of manual work as a tool of education was recognized long before the advent of formal education. In ancient India, 'gurus' in 'ashrams' required students to do manual work for living and learning. With the introduction of formal schools, education became bookish. There was no provision for manual activity in general education. Various committees and commissions had, over the decades, pointed out this weakness. But, it was Mahatma Gandhi who, for the first time, insisted that manual and productive work should not only find a place in the school curriculum but also education should centre around it. The present policy of the Government of India of introducing socially useful productive work (SUPW) in general secondary schools is based on this philosophy.

The main features of the national policy can be presented as follows:

1. The Government is firmly of the view that the school stage should consist of 12 years - a ten year secondary school and a two year senior secondary school. In this 10 + 2 system, general education is provided upto class 10 so that children in their formative years have an opportunity for balanced growth and all-round development.

2. The ten-year school curriculum recognizes that for a harmonious development of children's personalities, it is necessary not only to expose them to scholastic areas for intellectual development, but also to put them in situations where they will get opportunities to work with their hands and develop proper attitudes towards manual labour.

3. 'Socially useful productive experience' provides the basis for the development of knowledge, skills, and attitudesuuseful for later participationiin productive work. It is not meant to be just learning to do work; it is meant to be work education.

4. Socially useful productive work experience is developed in the light of the Gandhian philosophy of basic education which was work-centred.

   At the primary stage, simple, creative, self-expressional activities are to be undertaken through handwork. At the middle stage, projects should be included that introduce the use of various tools in a scientific manner in addition to socially useful productive work. At the secondary stage, exposure to actual crafts and to productive manual work emanating out of school subjects is to be considered.

5. At the +2 stage, i.e. when the students are more mature at the age of 16+, they are required to choose different courses of study for specialization. In accordance with the strong recommendation of the Education Commission to vocationalize education at the senior secondary stage, the students have the option of entering the vocational stream.

6. Vocationalization is introduced to:

   (i) reduce pressure on universities;

   (ii) divert students to employment-oriented courses; and

   (iii) develop entrepreneurial ability and thereby self-employability.

7. Taking into account the criticism of inflexibility against conventional vocational education, the policy emphasizes provision of a wide choice of combination of courses and provision of bridge/remedial courses to facilitate inter-stream mobility.

8. The policy requires that out-of-school children who, for socio-economic seasons, are not able to avail themselves of the facilities offered by the formal school system shall be provided with educational opportunities which do not interfere with their income generation activities.

In accordance with the policy described above, the following programmes have been taken up by the schools:

1) At the ten year school stage the programme of socially useful productive work (SUPW) is in vogue. SUPW is described as purposive meaningful manual work resulting in either goods or services which are useful to the community.

2) Manual work becomes purposeful when it meets the educational requirements. It is necessary to go into the whys and wherefores of every process of work so that it is performed intelligently and not mechanically.

3) A curricular activity proves meaningful when it is related to the needs of the learner and the community to which he belongs. It becomes more meaningful when it is related to the basic needs viz., food, shelter, clothing, health, community work, and social service.

4) At the +2 stage, productive manual work and services emanating from out-of-school subjects are also considered. Primarily, the benefits of the programme have to be enjoyed by the school and the local community directly. However, production of marketable goods and rendering remunerative service are not ruled out, provided they are not encouraged at the cost of educational outcomes.

5) Socially useful productive work experience is expected to achieve, inter alia, the following objectives:

   a) inculcation of positive attitudes towards work in the students;

   b) identification with the community by rendering social and community service;

   c) development of the habit of co-operative work;

   d) making the community conscious of scientific advancements and helping it develop a scientific outlook;

e) Learning to apply one's classroom and vocational knowledge to solve the day-to-day problems of the community;

f) participation in nation building activities; and

g) realization of the goals of the state and national development.

6. At the senior secondary stage separate vocational courses are conducted to divert students to employment-oriented courses and improve their self-employability.

7. A special non-formal education programme is in operation for out-of-school children in the 6-14 age group so that they have access to educational opportunities without interrupting their income generation activities.

In the implementation of work-oriented programmes some problems have been encountered. These can briefly be represented as follows:

1) The programme of 'socially useful productive work' in the ten-year school has proved to be popular and has been widely adopted. There have been some problems, though, in its implementation. A lack of adequate workshop facilities in schools has impeded some activities; but the 'socially useful service' component makes up for this deficiency.

2) The vocationalization effort at the +2 stage (i.e. classes XI and XII) has not picked up satisfactorily. The Education Commission recommended diversion of 50 per cent of the students to the vocational stream. As against that, the present attempt is to achieve a target of only 10 per cent. Unfortunately, even that target is proving elusive.

3) Public acceptance of the validity and utility of vocational courses, as distinct from professional technical/engineering courses, has been slow in coming. The substantial financial implications of setting up well-equipped workshop facilities have been retarding

large-scale introduction of vocational courses. Problems relating to teacher recruitment and teacher (re)training have proved to be complex. Absence of 'apprenticeship facilities' makes the vocational courses even less attractive.

In the light of the problems encountered, and based on the experience gained, the following points are under consideration to govern future proposals:

1) Surveys conducted by districts to enable the introduction of relevant vocational courses;

2) Amendment of the Apprenticeship Act to extended apprenticeship facilities to vocational courses and thereby make them more popular;

3) Involvement of local artisans in the implementation of SUPW in schools;

4) Integration of arts with work experience; and

5) Teacher training in work experience so the SUPW programme can be implemented through the regular school subjects.

Since Indonesia became independent in 1945, there has been a strong tendency for students to enter general education for the continuation of their study. This reflects the value the public places upon academic achievement rather than on craftsmanship, even though large numbers of general education graduates fail to continue their education at a higher level, and have to seek employment instead.

The government has therefore stressed the importance of promoting skill-education in general education in Indonesia to encourage graduates (and also the drop-outs who do not continue their studies) to acquire the functional skills required by society. Skills-education is supposed to emphasize the effect of the learning process on the development of attitudes and general capabilities of the students to enable them to cope with practical problems. This does not necessarily mean that skills education ignores the mastery of general capabilities and the development of positive attitudes toward practical work.

In 1976, 120,171 students (6.8 per cent) dropped out of the SMP[1] an 16,528 students (4.1 per cent) dropped out of the SMA[2], making a total of 136,699 students. For the year 1977, 112,731 students (6.9 per cent) dropped out of the SMP and 29,930 (6.1 per cent) of the SMA, making a total of 142,661 drop outs.

The most important issue regarding these student dropouts is that the type of education they received has not helped them in being either employable or trainable.

Based on the survey undertaken by the Ministry of Manpower in 1978-1979, out of 600 firms which had job vacancies for school graduates, it was found that vacancies available for graduatee of general schools were greater than those available for graduates of vocational schools.

Two types of programmes have been introduced in each level of the general secondary school. The first programme is the limited skills education programme for the lower level and the pre-vocational programme for the upper level. Both are intended to equip pupils with basic skills before they join the work force. These are so designed that the pupils will acquire imaginative, creative, and practical skills that enable them to participate, after receiving further training, in production. The types of skills, 16 in all for both levels, have been identified in relation to opportunities for employment existing in the community.

The second set are the free-choice programmes for the lower level and the theory supporting skills programme, for the upper level. Designed to equip pupils for higher education, the programmes reinforce other subjects without being an integral pant of the subjects. Topics bearing on current issues in the community, and relating to any of the subjects that a student studies, are given priority.

In the realization of the skills education programme in general educational there are two major problems faced: these are a shortage of qualified teachers and a lack of educational facilities. The available teachers are mostly volunteers with other educational backgrounds whose dedication and interest have led them to choose fields of teaching.

1 SMA - Sekolah Menengah Pertama (Junior High School)

2 SMA - Sekolah Menengah Atas (Senior High School)

The existing facilities are insufficient and their types and specifications do not meet the present standard requirements. In addition, to be able to run skills education satisfactorily each general school must have a workshop. One of the solutions adopted by the Government is the establishment of a skills education pilot project in the Directorate of General Education for SMP and SMA and one of its activities is to train skills education teachers.

In Japan, based on the recommendations of the Curriculum Council in its report in December 1976 entitled 'On the Revision of the Curriculum Standards for Elementary, Lower Secondary and Upper Secondary School Education', the Ministry of Education, Science and Culture (Mombusho) revised the courses of study for elementary and lower secondary schools in July 1977 and in August 1978 for upper secondary schools.

In this revision, increased emphasis was placed on experiential learning-related to work. Thus, a new policy of so-called 'work experience activities', has been introduced into school education at all levels. Its significance has been especially stressed at the upper secondary school level. The new course of study for elementary schools was effective from April 1980, from April 1981 for lower secondary schools and from April 1982 for the first grade pupils of upper secondary schools.

In order to promote the work experience activities in upper secondary schools; efforts are being made by national and local authorities to stimulate school inventiveness and to provide technical and financial assistance for practical study at specially designated schools.

The Mombusho has designated a pilot school among upper secondary schools for a two year term on the basis of the recommendation of each prefecture since 1979. It also organizes a workshop-style meeting each year to explain the purpose of the pilot school scheme and exchange information and experiences among these schools by inviting the teachers of the pilot schools as well as supervisors of prefectural boards of education. Some pilot schools voluntarily organize a meeting or workshop in order to demonstrate their experiences to teachers of other schools.

In addition to the case of the upper secondary school, the Mombusho has, since the 1982 fiscal year, started to designate a pilot school in the case of elementary and lower secondary schools.

The types of work experience activities carried out at these upper secondary level pilot schools vary from school to school, reflecting various conditions surrounding each school. However, they can be roughly classified into the following five types in terms of content and method. Many schools are carrying out three or four of these activities.

Type 1. Instruction of vocational subjects. Here, students in the general course are taught vocational subjects through experiment and practice. For example, during practice in agricultural subjects, students are given experience of the pleasure of work and production by participating in such activities as vegetable raising, rice planting, and rice harvesting. These activities are carried out in class units for one or more hours every week in the field or in the school's practice laboratory.

Type 2. Environmental adjustment and beautification activities in and outside of school. Here, such activities as cleaning the grounds, tending plants and trees, and making and tending flower beds are included in the curriculum, through which the students gain work satisfaction and learn the meaning of public service. These activities are carried out in programmes involving half an hour per day, one or two hours each week, and/or one day on the last day of each month.

Type 3. Production activities. Activities are carried out in rice paddies, gardens, tea plantations, and school forests, including, for example, rice or vegetable growing, tea picking, apple and orange picking, weed cutting, tree pruning and seedling raising. The methods used depend on the type of production involved, and include time schedules of one hour every week or every other week, as well as several day periods every year.

Type 4. Voluntary service activities. Here, the following activities are included

a) Visits to such welfare homes and caring for

elderly people, the physically handicapped people and others requiring special care.

b) Cleaning and beautification of public facilities such as parks, stations, assembly hails and tourist areas.

c) Collecting donations for public welfare and other projects.

These activities are often carried out in groups after school, on Saturday afternoons, Sundays, and holidays.

Type 5. Experiential learning based on individual student interests and desires. Here, with the aim of expanding the abilities and individuality of each student, students select some production or hobby activity, e.g. typewriting, wood-work or sign language, and through such activity gain experience of working on their own. These activities are carried out for approximately one two-hour period each week.

As the next step, consideration is being given to the desirable extension of the teaching of vocational or work-oriented subjects in general courses of all upper secondary schools. The Science Education and Vocational Education Council, an advisory organ to the Minister of Education, Science and Culture, has been engaged in a feasibility study for such expansion since 1981.

In implementing these programmes, the following needs have been identified:

1. To make parents and the public understand the importance of work-experience activities;
2. To promote enough interest to attract teachers and retain them in the teaching profession;
3. To expose the students to the benefits ahead, if they engage themselves in fulfilling these activities;
4. To accommodate work experience activities in the curriculum;
5. To improve the facilities and equipment for these activities; and
6. To increase co-operation with other organs of the community;

Education and work in general secondary schools

In Pakistan, one of the basic principles of the educational policy has been the integration of general and vocational/technical education with the aim of preparing secondary school students for gainful employment (including self-employment) in the fields of industry, agriculture, business and home economics. Students leaving school after completion of secondary education were expected to be prepared to undertake social responsibility and to be ready to be absorbed in the socio-economic framework.

The present education policy envisages the introduction of a production - oriented curriculum into the general education system. The policy also lays emphasis on the non-formal education programmes of the Allama Iqbal Open University which are intended to develop close linkages between education and the world of work. The National Education Policy introduced in 1979 recommends the introduction of a stream of vocational/technical subjects, carrying a quarter of the total possible marks, in the Secondary School Certificate examination. At present, however, the agro-technical courses offer non-examination subjects.

Recognizing the manifold problems related to the availability of properly trained personnel, it has been decided to establish an Advanced Technical Teachers Training College at the federal level.

According to the present programme of vocationalization of general education in Pakistan, the agro-technical subjects are offered in about 3,500 schools. Five class periods are allocated to agriculture, industrial arts or home economics subjects.

Industrial arts include wood work, metal work and electricity. The same teacher is expected to teach all three branches. The programme is intended to develop positive attitudes towards work. In the field of agriculture, the training programme includes horticulture and animal breeding including birds, useful insects and bees. In addition, the agricultural patterns of the local environment have to be studied. Home economics subjects include sewing, food and nutrition, family life and child care .

The future programme of vocationalization of general education includes a programme evaluation and the

establishment of an Advanced Technical Teachers Training College in Islamabad.

In the implementation of this programme, the following problems have been encountered:

1. Unavailability of sufficient suitably qualified teachers for work-oriented subjects;
2. Insufficient laboratories and equipment in all secondary schools;
3. Because of a shortage of teachers, facilities and other constraints, agro-technical subjects cannot be offered in all schools. Until the programme is offered in all secondary schools, these subjects cannot be made examination subjects. Because the system is largely examination-oriented, many students and teachers do not take work-oriented subjects very seriously;
4. Textbooks have not yet been developed in the national language in all the agro-technical subjects. Urdu being the medium of instruction, foreign textbooks related to work-oriented subjects cannot be used in most schools.

In the Republic of the Philippines, at the secondary level of general education, all students are required to take vocational courses which are offered from the first to the fourth year. Elective subjects are also offered in the fourth year, some of which are vocational subjects. The idea is that even if a student drops out of school at any grade, he should be able to work and earn his living.

A series of workshops and conferences revised the curriculum in line with the new national policies. At the same time, curricular materials are being prepared by a group of experts and the massive re-training of teachers is being planned. While the emphasis at the lower school level is being shifted from work to the development of basic skills (reading, writing, computational skills), the work-oriented curriculum is being emphasized at secondary schools. In addition, it was decided to add one more year to the elementary level of education by restoring grade 7 with the hope that this will help to upgrade the academic performance of elementary school graduates. The new curriculum is expected to be introduced in 1983.

Education and work in general secondary schools

In the Republic of Korea, one of the basic trends in the national policies towards vocationalization of general education has been the introduction, since 1963, of vocational education subjects in the middle school, as a part of general education.

At that time, vocational subjects were optional, and a student could select one of five subjects - agriculture, technical arts, commerce, fishery, and home economics. Practical arts and domestic arts were added in 1968. Practical arts and home economics were made compulsory subjects and the remaining five were optional.

The Ministry of Education developed supplementary materials in 1977 to prevent laying too much emphasis upon theory, and to overcome problems experienced in the past, such as a shortage of practical arts teachers and facilities, and teaching materials. The supplementary materials consisted of sixty rolls of film, six lists of charts and basic facilities such as some working tables and machines and 250 kinds of tools. They produced good results at tests administered in 1978 in fourteen model schools. As a result these materials are now supplied to a large number of schools, with some 2,000 middle schools throughout the country receiving them from 1979 to 1983.

Vocational education in general high schools has been provided since the year of liberation, 1945.

Earlier vocational subjects were optional and consisted of five subject areas - agriculture, technical arts, commerce, fishery, and home economics. Industrial arts and domestic arts were added in 1973. Industrial arts and home economics were compulsory subjects and the remaining five were optional. Vocational education at the general high school level is not aimed at preparation for employment, but is regarded as an aspects of general education.

The Social and Vocational Education Bureau of the Ministry of Education, which is responsible for administering vocational education, handles the administrative work related to vocational education. The Council for Vocational Education makes decisions on policy matters related to vocational education; provides guidelines on vocational education in regard to curriculum, instructional programmes and equipment and provides pertinent guidance and advice on their implementation.

General problems faced in the Republic of Korea are:

a) The financial investment for experiments and facilities for work-oriented education is limited.

b) The students taking up technical and vocational subjects are not accorded neither due recognition nor proper social status.

Additional educational problems currently experienced are as follows:

a) Approximately 35 per cent of the high school graduates are unable to proceed to higher educational institutions. This creates a need for vocational guidance for these dropouts;

b) Most vocational classes at general high schools have insufficient facilities and a shortage of teachers;

c) There is an equalization policy for bringing all high schools up to certain standards. The present policy for general high schools makes it difficult to produce good workers, as far as the vocational courses offered at these high school are concerned. This is reflected in the assessment of the university entry examination administed by the Ministry of Education.

Measures for dealing with some of these problems are discussed at the Council for Vocational Education convened periodically by the Ministry of Education.

Vocational subjects at the middle schools (which contain seven subjects at present) are likely to be integrated into one subject after 1985.

Educational policies in Sri Lanka were subjected to two reforms in 1971/72 and 1978, which resulted in significant changes in the school curricula, aimed at introducing vocational experiences into general education.

A significant feature of the 1971/1972 reform was the introduction of pre-vocational subjects at the Junior Secondary level in the school system. Every pupil at this level was expected to select two pre-vocational subjects,

from a group of such subjects, which a particular school had selected, in the light of its available facilities and resources. This enabled the school system not only to expose pupils to the world of work but also to provide meaningful experiences to the majority of pupils, who were destined to leave the school system after the completion of compulsory education. The National Certificate of General Education (NCGE), which replaced the previous General Certificate of Education, ordinary level (G.C.E., O/L) was the terminal examination for this group of pupils. Considerable efforts were made to provide the necessary guidance, equipment and materials and training to the teachers engaged in teaching vocational subjects.

As a result of the second reform, introduced in 1978, the National Certificate of General Education has been replaced by a General Certificate of Education G.C.E. ordinary level, in which vocational experiences have been introduced through the inclusion of some vocational subjects. These vocational subjects are taught at the Junior Secondary Level in Sri Lanka whereby the children are introduced to the world of work, in an attempt to inculcate in them favourable attitudes towards the dignity of labour.

The opportunity for children to develop simple basic skills is provided through different subject areas such as agriculture, handicraft and metal-work.

The selected subject areas are activity-based and the children are encouraged to develop a sense of curiosity to solve problems and use the knowledge that they gain from studying other subjects like science, maths and social studies to understand the vocational subjects. These technical subjects also provide a way of bridging the gap between the school and the community, by creating an understanding about the problems related to different vocations as well as the people who are engaged in such vocations. It is expected that the community will be enriched by children trained in scientific approaches through the introduction of vocational subjects. The most popular vocational subject is Agriculture.

The present national curriculum in Sri Lanka is being implemented in general secondary education in all schools throughout the country. The 13 vocational subjects are selective. Schools choose them, according to the

facilities and resources they have available. Every student has to study one of these subjects in order to qualify for graduation. By monitoring the students' performance in science, mathematics, and social studies, opportunities are provided to identify the natural inclination and skills of the students in different areas. The vocational subjects give the pupils an opportunity to learn about various occupations and to acquire certain basic skills, but not necessarily professional skills.

In the implementation of this programme, the following difficulties and constraints have been encountered:

1. Inadequate teacher preparation to acquire the new competencies required for teaching vocational subjects;
2. Lack of interest by some teachers to become involved in work oriented activities;
3. Lack of adequate workshops and equipment;
4. Shortage of funds to provide the necessary facilities and materials;
5. Negative attitudes of some school principals towards the vocational subjects; and
6. A need to review the education programme for science subjects in order to meet the requirements of the vocational subjects.

The Government is preparing a proposal for the financial and technical support of UNDP and Unesco to implement the Project of Vocationalization of General Education in Sri Lanka. The project is designed to assist the Ministry of Education in establishing new curricula in life-skills (grades VI-VIII), introducing them experimentally in 500 selected schools, and establishing guidelines for new curricula in technical subjects (grades IX-XI) in the same 500 schools. Depending on the results achieved by the project, the Ministry proposes to carry through the reform in the entire school system and therefore the pre-investment nature of the project needs to be stressed.

In the Socialist Republic of Viet Nam the national policy on vocationalization of general secondary education is based on the three basic educational principles: namely, 'theory must go hand in hand with practice; education must

be combined with productive work, and the school must be linked with the society'. To fulfil these objectives, some experiments have been conducted, the results of which have served as a basis for the decisions by the Government and the Ministry of Education regarding the implementation of the programme on a national scale.

Since the 1960-1961 school-year, a number of schools in rural areas have introduced agricultural subjects into the curriculum. In many towns, pupils have been taught woodwork, forging, turning, fitting, casting, generator, car and T.V. maintenance and repairs, to provide vocational guidance towards a career in accordance with the developmental needs of the society and individual aptitudes of the learners. The aim of these subjects is to instil in their minds a correct attitude towards labour; to acquaint them with a number of occupations; to assist them to identify their aptitudes and vocational inclinations; to help them to choose the right career; and to encourage them to take up occupations in accordance with the need for young and intelligent workers.

In the implementation of this programme, the Ministry of Education has worked out concrete plans for its successful realization. For this purpose a number of schools have been chosen as pilot-schools in each locality; teachers in basic vocational subjects have been trained and up-graded and, on the basis of research, a variety of textbooks for vocational subjects have been improved and prepared for publication according to the revised educational curricula. In the summer of 1982, special upgrading courses on theoretical studies and practical experience will be conducted for teachers and other educational personnel.

While the productive work of the pupils has, educative aims, as its priority, it also makes a substantial contribution to the material well-being of the locality, particularly as the economy, still under-developed, must cater for nearly 12 million pupils. The work experience is educationally effective, since the productive labour is well organized, disciplined and technically oriented.

The following selected examples illustrate how the work-oriented educational reform in Viet Nam meets its three major objectives, linking theory with practice, education with production, and the school with society:

The Bac Ly school organizes the pupils into working groups in various activities, such as developing new strains, azolla, pilot-fields, animal husbandry, forging, fitting, masonry and bamboo-weaving, to work one session a week, besides extramural and summer-holiday activities. These working groups are also expected to popularize improved techniques among the local population.

The Cao Ba Quat General school is situated in the suburbs of Hanoi, and may be classified as an average school, with rather poor material facilities, with teachers coming from different localities with agricultural and handicraft economy. Three difficulties were facing the school: the teachers were unqualified to teach technical subjects, there was scarcity of funds, materials amd a limited market for the school products.

To overcome these difficulties, the teachers underwent technical courses of three different durations: 6 months, 1 year and 2 years; one session a week plus one month a year during summer holidays. These courses covered: carpentry, forging, masonry, metalwork, basic electricity, tractor-driving, tailoring, lace-making, vegetable-growing and rice-cultivation. As a result, after two years, the teachers were able to teach their subject matter, as well as technology and production work.

The school has also started setting up material facilities for vocational practice and production work along three guiding principles: from a small quantity to a large quantity, from the rudimentary to the modern; from handicraft to machinery and drawing from three major sources: self-reliance, aids from the community and equipment supply from the upper authorities. The school now has 16 sewing-machines, one tractor, one water-pump, one thresher, one sprayer, three generators, a carpentry workshop, a mechanical workshop, a smithery, a one hectare rice-field, and a 100 hectare vegetable-field.

This school now has enough qualified teachers and material facilities to introduce the industrial and agricultural activities laid down in the curriculum.

The school has also achieved a very high percentage of graduates (often 100 per cent). After graduation, its pupils are ready to join the local production enterprises and find it easy to adapt themselves to the working conditions of the community in co-operatives, brick-kilns, tailoring, embroidery, lace-making, metalwork and carpentry.

The Hoa Binh Socialist Labour Youth School is located in a thinly populated rural area, far from cultural centres, in an area where very few young people could obtain secondary education. The people come from such different ethnic tribal groups as Muong, Kinh, Thai, Meo and Dao. The school provides boarding facilities for its students and offers an 11 hour daily programme, including four hours for classroom study, four hours for work, one hour for rest, and three hours for individual study or other recreation activities.

The academic year comprises nine months of study two months for consolidation of knowledge and revision, and a one month vacation. The work experience of the students includes production of manioc (in a 400 hectare field), as well as production of sugar-cane, mulberry, maize, potatoes, vegetables, cultivation of grass-land and animal husbandry - taking care of cows, buffaloes (756 heads), pigs and chickens. The students are also involved in processing vermicelli and wine (500,000 litres per year) from manioc. Each grade forms a production group which is self-managed and guided by a teacher. Theory lectures on various techniques are also given by teachers from agricultural and polytechnical colleges. The pupils are highly motivated and willing to join production and work in the locality, eager to make the country more prosperous and powerful. This school is a model for the universalization of secondary general education, independent of government grants.

In Thailand, according to current policy, the vocational courses and work experience in secondary education are designed:

a) to instil habits of diligence and thrift;

b) to encourage the individual to equip himself with knowledge and vocational skills in order to earn his livelihood;

c) to provide work experience at the secondary education level for future employability;

d) to promote vocational education in harmony with the economic and social conditions of the country;

e) to emphasize the agricultural and agriculturally-oriented industry;

f) to provide the learner at the elementary education level with basic knowledge and vocational skills;

g) to provide the learner at the secondary education level with knowledge and working skills suitable to his age, needs, interest and attitudes;

h) to create a work force at various levels to meet the needs of each community and society; and

i) to create positive work habits in the learner, enabling him to apply the lessons and work done at school to his daily existence.

At present, work education and vocational education are two separate but closely related components of the lower secondary curriculum. Subjects offered in these two elements are as follows:

Work-oriented education. Home-making, crafts in the home, agriculture (plants), agriculture (animals), cloth and tailoring, food and nutrition. The schools may arrange for the students to study these subjects for up to four periods at a time, as it sees fit.

Vocational courses offered in all general education schools. These are five areas of studies as follows: agriculture, trade and industry, home economics, business education, dance and musical arts. The students may choose vocational subjects lasting up to six periods per week in grades 7 and 8. In grade 9 the students may choose up to 12 periods of vocational subjects. The students are free to choose vocational subjects or a combination of vocational subjects and academic subjects to suit their needs and interests.

In upper secondary grades (10-12) every student must choose one of the following six areas of vocational studies as a core programme: trade and industry, agriculture, home economics, business, handicrafts, and arts and crafts. Each area requires 12 credit hours. For example, students choosing trade and industrial subjects must take (1) bench work for 16 periods/week/semester, (2) technical drawing I for three periods/week/semester, (3) technical drawing II for three periods/week/semester, and (4) engineering materials for two periods/week/semester.

The country is currently facing the following problems in effectively implementing the new programme:

a) The negative attitudes of students and their parents towards vocational subjects;

b) The lack of appropriate instructional materials, equipment and workshops;

c) The deficiency of vocational teachers in both quantity and quality;

d) The lack of participation and co-operation among educational and vocational institutions, governmental agencies, business enterprises, factories and companies in providing both training and employment.

e) The lack of standardized vocational aptitude tests in selecting and planning programmes of studies;

f) The lack of co-operation between the organizations that supply manpower and the organizations that demand manpower; and

g) The reluctance of schools to utilize the local learning resources, business enterprises and self-employed businesses.

Solutions under consideration for coping with these problems are:

a) Public relations programmes should be conducted to create positive attitudes towards work education and vocational subjects;

b) Annual budgets for school should cover expenses for teachers' handbooks, equipment and consumable materials needed for the courses offered;

c) The instructors of work education courses should be encouraged to use community resources to the greatest extent possible;

d) Locally available materials should be utilized for instructional purposes, whenever appropriate;

e) Local personnel who possess expertise in fields related to courses of studies should be invited to give lessons or talk to the students on topics of their particular interest;

f) Field trips should be arranged for students and instructors to visit plants, laboratories, workshops, factories and business enterprises;

g) Students' products should be regularly displayed and sold to the public during school fairs or annual exhibitions of students' products conducted in the provinces and in Bangkok;

h) Vocational interest groups or clubs should be promoted and established in schools, such as electrotechnical clubs, auto clubs and agriculture clubs;

i) The students should be encouraged to apply their skills and knowledge both inside and outside their schools;

j) Suitable books and materials for the students' use should be provided in the book corner of each classroom and workshop;

k) Supervision of work and vocational education should be regularly carried out by qualified supervisors in their area of specialization;

l) Career counselling services and activities should be provided for students of all levels of education;

m) In-service training programmes for work and vocational education teachers should be regularly conducted by the departments responsible for schools;

n) Standardized vocational aptitude tests and vocational interest checklists or inventories should be made by test-experts or supervisors as soon as possible;

o) Community resources should be surveyed and researched for the benefit of developing and revising work and the vocational education curriculum; and

p) The leading schools of work and vocational education curriculum implementation should be selected, promoted and supported to the greatest extent possible.

The future plans include the following:

1. To facilitate effective implementation of the new curriculum, the Department of Curriculum and Instruction Development will increase the number of appropriate schools as leaders in curriculum implementation every year.

2. The Department of Curriculum and Instruction Development will conduct an evaluation of the outcome of the nationwide implementation in 1984, with a view to assessing the efficiency and effectiveness of the uses of syllabi, curriculum materials and instructional aids in order to improve the education standard as a whole.

3. After the final evaluation of the new primary and secondary school curricula in 1984, the Curriculum Development Centre plans to prepare other new curricula starting from 1985, and hopes to implement them in either 1987 or 1988.

4. The Department of Curriculum and Instruction Development plans to revise, improve and produce supplementary readers' textbooks and teachers' handbooks for all courses offered in 1983.

5. Financial support will be given annually to 12 Regional Education Offices to produce teachers' guidebooks on work education and vocational courses to serve local needs.

6. The Ministry of Education will consider adopting measures which include the provision of appropriate teaching and learning equipment and materials, the training of teachers for the implementation of work education and vocational curricula, and the provision of more effective supervision, follow-up and evaluation.

7. Evaluation and research on the utilization of community resources will be conducted by the Curriculum Development Centre starting from 1983.

8. In-service training programmes for career counsellors of schools will be arranged in a continuous process by the Guidance Centre every year.

9. The Monthly Bulletins of Curriculum Development will be published and distributed to all educational institutions and other interested institutions and personnel.

Curriculum

Curriculum is the total sum of all deliberately planned educational experiences provided by the school to the child. The planning of these experiences is done on the basis of the desired behavioural changes in the child which are derived from the objectives of the particular area of the curriculum.

As the entire programme depends upon the philosophy and concept of socially useful productive work, these two aspects are made clear at the beginning.

The general objectives are stated in very broad and general terms and are applicable to almost all the socially useful productive work activities. The curriculum has been deliberately kept flexible. This flexibility has two dimensions. One pertains to the curriculum content, which should be related to the local needs and the facilities available. The other dimension concerns allotment of time. It is noted that flexibility should not result in any reduction of time alloted.

Bangladesh. Work experience is concentrated in Grades IX and X. It is compulsory and covers six periods out of 40 periods per week. The students take up work experience in a range of fields including agriculture, social welfare, home economics and industrial arts. At this stage of education, students can select arts and crafts as an elective subject. Both work experience and arts and crafts are examination subjects.

People's Republic of China. Work experience and vocational courses have been emphasized. These have been re-emphasized as a matter of high priority in the context of current thinking and a restructuring of secondary education. Some details are provided in the earlier chapter.

India. The form of work experience and vocational courses have undergone many changes. They are currently being emphasized, particularly at the senior high school level. Some highlights are given below:

- Selection of activities: Actual activities are selected according to facilities available, the educational potentiality of the activity, and the

time available for each activity. Thereafter, each activity is divided into experience units and the objectives of each unit in behavioural terms are spelt out.

- Content: Each activity is then spelt out in 'doing units' and the related knowledge.
- Methods: These are stated in general terms as well as in specific terms applicable to each 'doing unit'. The materials, tools, and teaching aids required for each doing unit are identified unitwise.
- Evaluation: The component of evaluation is described in general and specific terms unitwise.
- Implementation: For purposes of implementation, classes are divided into five groups - classes I and II, classes III to V, classes VI to VIII, classes IX and X, and classes XI and XII. But, the syllabus frame for all groups is common:

  a) Common activities:

     (i) Environmental studies;

     (ii) Experimentation with materials, tools, and techniques.

  b) Work practice.

In primary classes (I to V) there is exposure to helping in work situations at home, in the community, and to simple handwork for creative self-expression. In middle classes (VI-VIII), activities of the previous classes are continued in an advanced form. Work practice is in the form of selected projects. In secondary classes (IX and X), greater emphasis is placed on work practice. Work practice includes one main craft or equivalent service and at least one subsidiary craft or equivalent service.

Indonesia. Skill education is a part of the 1975 curricula and the basic objectives of the programme are:

a) the development of working habits and positive attitudes towards practical work;

b) the development of well-integrated, intellectually oriented individuals, equipped with sufficient practical skills for life; and

c) imparting knowledge necessary to solve practical problems.

In the lower secondary schools, 15.2 per cent of the time is allotted for skills education. In the upper secondary schools, 14.1 per cent of time is allotted for skills education. The major constraints observed during the implementation of the programme are:

a) the concept of skills education is not widely understood;

b) the schools fail to choose the proper types of skills training to be adopted;

c) schools try to implement the entire range of possible skills education for which large funds are required and which are not available;

d) there is a lack of qualified teachers; and

e) there is an absence of supply-demand relationship between schools and industry.

Japan. Courses of study for elementary and lower secondary school were revised in 1977 and for upper secondary school in 1978. In the revision, increased emphasis has been placed on experiental learning related to work with the development of a respect for work as an important educational goal.

In elementary schools, the curriculum provides for the development of basic understanding and skills concerning everyday needs such as clothing, food, housing, and industry. In lower secondary schools, the curriculum emphasizes development of basic knowledge and skills concerning occupations required by society, an attitude of respect for work and the ability to choose a future career according to one's individuality. In upper secondary schools, the curriculum provides for the furthering of lower secondary goals, the mastery of professional skills and the raising of cultural refinement.

At the lower secondary level (grades VII-IX), industrial arts and home economics are compulsory for all pupils. At the upper secondary level, of the general course pupils who account for 70 per cent, vocational courses are optional. Only 10 per cent of the students of prefectural schools take such courses.

The aim of the work experience activities is to develop proper ideas and attitudes concerning work and occupations by providing students with experiences of the pleasure of work and the satisfaction derived from its completion through practical and experiental activities. Work experience activities include experiments, practice and actual work in the context of production and daily life, visits to factories, voluntary services in the community as well as activities emphasizing direct experience such as the preparation and making of apparatus and cleaning up activities for experiments and practice in subjects and courses in science, social studies and occupational education.

The Ministry of Education (Mombusho) has designated an elementary, a lower secondary and an upper secondary school as pilot schools on the basis of each prefectural recommendation to promote work experience activities and to stimulate school inventiveness.

Pakistan. According to the revised curriculum (1974), agro-technical subjects have been included in classes 6 to 8 in selected schools. As the subjects are non-examinable in nature, neither the students nor the teachers take these subjects seriously.

Some problems encountered are:

a) Shortage of qualified teaching staff for these subjects;

b) Lack of resources for equipping workshops and for purchasing raw materials;

c) Shortage of books; and

d) Low motivation among the teaching staff.

Republic of Korea. In accordance with the newly revised curriculum, there is no longer any distinction between the general and vocational high school subjects, as both have common compulsory subjects. The vocational education at general high schools is imparted to students not as the education for employment but as general education. High school students taking vocational courses must complete 10 to 38 units of optional subjects and 52 to 106 units of special subjects. The compulsory subjects may be agriculture, technical, commerce, fishery or domestic arts, depending upon the characteristics of the school region.

At the middle school level, practical arts and home economics are completed during the first two years, three hours per week in the first year and four to six hours per week in the second year, and optional subjects only are completed in the third year. The new curriculum has increased the proportion of the basic subjects that contribute to overall personal development. In the Republic of Korea, the middle school, in fact, can be called the common education centre of the nation. With rapid industrialization, the difference between men and women will diminish gradually as also will the gap between the urban and the rural inhabitant. In about 4 or 5 years the present seven vocational subjects will be combined into one subject in the middle school curriculum.

Sri Lanka. Selection of technical subjects and the revision of syllabuses to suit the objectives of an activity-oriented curriculum was undertaken in 1977/1978 by the Curriculum Development Centre (CDC). Since the CDC lacked personnel who had experience in teaching and knowledge of many of the selected subjects, practicing teachers as well as personnel from technical institutions and appropriate industries were summoned to participate in this exercise. The availability of teachers, school facilities and other available resources were taken into consideration when the syllabuses were drawn up. The existing syllabuses were carefully examined and areas for generation of activity based teaching experiences were further strengthened by including more activities and by inviting the comments of other local resource personnel on this exercise. When schools were unable to teach these activities, the resources of the community and those of the local resource personnel were used. The new content and the activities that have gone into this session were explained in the accompanying teachers guide.

At the junior secondary level, students are offered 10 subjects in addition to physical education and library work. Therefore at this level, some subjects which are likely to be dropped by students when they enter grade 9, are given less time, compared with those which are compulsory. For example, science, mathematics and social studies are given more time than vocational studies.

Since 1978, pre-vocational subjects have been replaced by 14 technical subjects. The basic objective of the technical course is the acquisition of life experiences

and life skills. The integrated curriculum at primary and secondary levels exposes pupils to industry, fisheries, agriculture and other trades to enable them to make occupational choice in terms of their talents and interests.

The problems encountered with these courses are as follows:

a) Lack of properly qualified teaching staff for vocational courses;

b) Lack of interest by administrators to adopt innovative practices;

c) Opposition by parents to vocational subjects; and

d) Lack of equipment and materials.

Thailand. The curriculum reforms of 1978 provide for: (a) development of positive attitudes towards all occupations and group disciplines; (b) provision of vocational education relevant to local conditions and requirements; (c) provision of opportunities for learners to acquire knowledge and skills from various academic sources and institutions; (d) development of self discipline and team spirit; (e) development of knowledge and skills sufficient to form a basis for the improvement of one's own life and that of one's family.

At the elementary level, the time allocated for work-oriented education programmes is distributed as follows: 10 per cent of the total time for grades 1-2; 20 per cent for grades 3-4; and 30 per cent for grades 5-6. The minimum instruction time is 25 hours per week, 40 weeks per year.

The lower secondary curriculum provides for four compulsory periods for work education in a total of 35 periods per week; and 6-6-12 periods for elective vocational courses in grades 7, 8 and 9 respectively. At the upper secondary level, 12 learning units are compulsory for each student in any vocational subject he chooses from the following: trade and industry, agriculture, home economics, business, handicrafts, and arts and crafts. In addition, schools may organize other courses in work and vocation as appropriate and relevant to local needs. Emphasis is laid on such basic practical work experiences as household jobs and agricultural jobs.

Some problems encountered are:

a) Students and their parents prefer general subjects to vocational subjects;

b) Lack of appropriate instructional materials, such as tools, equipment and workshops;

c) Lack of in-service training opportunities for teachers to acquire teaching skills;

d) Lack of co-operation among educational institutions, government agencies, factories and companies in providing training opportunities; and

e) Lack of standardized tests to measure vocational aptitudes.

Socialist Republic of Viet Nam. The overall educational principles guiding the curriculum are that theory must go hand in hand with practice, education must be combined with production, and industriousness must be associated with thrift. In March 1981, the Council of the Government promulgated a decision on vocational orientation in general education schools, with the following aims:

a) To ensure that pupils are ready to join production after leaving schools;

b) To foster and guide them in choosing a career in keeping with the development of society and their individual aptitudes;

c) To instil in them a correct attitude towards labour;

d) To acquaint them with a number of occupations; and

e) To encourage them to take up occupations where there is a need for young and civilized workers.

The Ministry of Education has established a number of pilot schools in each locality to work out concrete plans for implementing this decision. The policies in these schools focus on the training of teachers in technical courses of varying duration, instilling into the pupil's mind a love of the home village, revolutionary traditions

and devotion to study aimed at building of the society. To facilitate these developments, the time-table is arranged to provide each day for four hours for study, four hours for work, one hour for rest, and three hours for individual study; on a yearly basis this becomes nine months for study, two months for revision and one month for vacation.

The results have been extremely encouraging. In addition to giving the student necessary work training, schools have been able to generate income for financing their improvement.

The following example illustrates the work-oriented curriculum of the Vietnamese general secondary school system:

Grade	Number of periods	Contents	
		Industrial area	Agricultural area
10	99	- Technical drawing (49) - Workshop practice (50) *Service techniques (for girls only) (66)	Technical drawing (33) - Cultivation (33) - Sea products (33) *Service techniques (for girls only) (66)
11	99	- Workshop practice (66) - Cultivation, animal husbandry (33)	- Workshop practice (33) - Cultivation, animal husbandry (66)
12	99	- Electrical, Wireless techniques (66) - General economy (33)	- Electrical techniques (33) - Animal husbandry (33) - General economy (33)

* Please see the text below.

Thus, the school curriculum of the upper secondary general school of Viet Nam, comprises:

Three periods per week for technical subjects, total = 99 periods plus three periods per week for productive work total = 99 periods.

While the tenth grade boys go out to undertake productive work, girls stay at the school workshop to learn "service techniques" such as sewing, tailoring and home making. Girls go out to undertake productive work for only 33 periods (plus 66 periods for service techniques). while boys must attend all 99 periods for productive work.

This means that tenth grade boys have 99 periods for technical subjects, 99 periods for productive work, while girls have 99 periods for technical subjects, 66 periods for service techniques plus 33 periods for productive work.

Instructional Materials

The instructional materials presently used in work-oriented programmes in most of the countries may be classified as:

1. Most commonly used teaching devices, such as real objects, tools and instruments;
2. Non-projected visuals;
3. Projected visual aids;
4. Printed instructional materials; and
5. Specialized equipment.

Bangladesh. The instructional materials are mainly textbooks for vocational subjects which have been introduced into general education. Textbooks have been planned for preparation in home economics, industrial arts and agriculture, in conformity with the work-oriented system of education. A teacher's manual for classes IX and X is also under preparation.

Some teaching charts for these subjects have been developed, though much more remains to be done in this respect.

People's Republic of China. The printed instructional materials are prepared in the following manner:

The teaching materials of academic courses for general secondary schools are written and published by the People's Educational Publishing Press. However, there is no standard list of instructional materials for work-oriented subjects or for vocational subjects in general

secondary schools. The instructional materials are written collectively by groups of authors, according to local conditions. The authors' groups include experienced teachers, engineers and technicians from industry or veteran farmers from various provinces and cities. Some schools use the instructional materials prepared for technical schools, others select suitable materials from various books on science and technical engineering and use them as instructional materials, while some use the instructional materials prepared by their own teachers.

India. Good textbooks and teaching aids are needed for teaching vocational courses.

As the production of instructional materials for a large number of modules would be a formidable and time consuming job, suitable publications might be procured for adaptation from countries where similar courses are conducted. Simultaneously, publishers should be encouraged to find knowledgeable authors to write well illustrated books in simple and clear language with authentic practical details.

Teachers' guides and manuals of activities should also be prepared.

Instructional materials prepared for socially useful productive work (SUPW) include curriculum guides, handbooks, resource units, unit-plan, and doing-learning units. These play a vital role in the implementation of SUPW. The nature of SUPW is different from other subjects which have textbooks as it is concerned with doing-learning. Therefore, conventional textbooks will not serve the purpose. The problems-solving approach and integration of knowledge relating to the different subject areas with SUPW demand a new type of literature for the guidance of teachers.

The doing-learning units should cover all aspects of the teacher's needs in a pragmatic manner. They are not to be limited merely to each day's experience. Instead, they are to be spread over three to five days work, depending upon the size of the unit.

Indonesia. Various instructional materials for skills education are mainly prepared at the school level by the teachers. The sequence of their preparation is as follows:

by the teachers. The sequence of their preparation is as follows:

(a) study of curricular objectives; (b) development of instructional objectives; (c) selection of contents/ topics relating to instructional objectives; (d) selection and development of teaching - learning process; (e) development of teaching-learning resources; and (f) development of test instruments.

The following criteria are used for selecting and developing instructional materials:

a) Relevance to instructional objectives;

b) Relevance to community working activities;

c) Availability of materials;

d) Clarity of instruction;

e) Involvement of student participation; and

f) Built-in evaluation system components.

Types and organization of materials produced in Indonesia:

Instructional materials in skills education consist of teachers' guides, handbooks, curriculum guides, teaching-learning materials, evaluation instruments, audio-visual aids and worksheets to accompany a specific learning package. The package is designed for one semester and consists of a number of topics, or sub-topics (as the case may be) for the development of certain types of skills. A set of practical worksheets, as mentioned above, is prepared for use by the students.

As an example, a teacher's work plan, reproduced from the teacher's guide is given below as an illustration:

A. General guide

B. Specific guide

1. Topic = Wood construction

2. Class

3. Time allocation

4. Instructional objectives

a) General instructional objectives

b) Specific instructional objectives

5. Basic learning units
6. Teaching procedures
   a) Teacher's activities
   b) Student's activities
7. Supplies
8. Evaluation.

Japan. The Ministry of Education has published a guide which explains the aims and contents of the recent curriculum revision, including some explanation of work experience activities and has also published several guides in each field of vocational courses offered in general education. These guides are also useful for the teachers who teach some basic vocational subjects as a part of work experience activities in general courses at upper secondary schools, even though they are primarily designed for vocational course teachers. Some local educational authorities have printed teachers' guides for work experience activities in school.

There are no special textbooks for work experience activities introduced in the general schools, but textbooks and other instructional materials prepared for vocational education courses are being offered for consideration for work-oriented programmes in these schools.

Pakistan. A variety of equipment for teaching agro-technical subjects, worth about US$3 million, was distributed to schools after the introduction of the new scheme in 1976. Most of the equipment purchased before 1979 from abroad, including books, transparencies, machine tools, drawing instruments, overhead projectors, blackboards, screens, woodwork tools, training manuals, wall charts, electric accessories, relevant material for teaching metal work and applied electricity, mobile workshop units and other audio-visual equipment went to the six Agro-technical Teachers' Training Centres. During the current financial year, an amount of Pakistan RS. 4 million has been released to the National Educational Equipment Centre for purchasing a variety of items, the requirements of which were identified by the representatives of the Provincial Education Departments/Directorates of Technical Education.

Philippines. In order to implement the policy of giving equal emphasis to academic subjects as well as work-oriented programmes, a series of seminars/workshops on how to prepare instructional materials to accomplish this objective were held. Teachers with theoretical background were mobilized by the different departments to write instructional materials which would suit the objectives and philosophy of the school. Modules, as well as textbooks were prepared, placing emphasis on the principle that work and academic subjects can be combined.

Republic of Korea. The Ministry of Education developed some model instructional materials in 1977, aiming to shift the emphasis from theory to practice and to rectify problems such as the shortage of industrial arts teachers and to facilitate further development of teaching materials for vocational subjects.

The printed materials for middle schools consist of teachers' guides (for each grade, one book); films; and list of the teaching charts used in all grades.

For general high schools:

- Teachers' guides and students' textbooks have been written for general high schools.

Thailand. For work education at the lower and upper secondary school levels, instruction is conducted in classrooms, workshops and laboratories. For some subjects students have a basic textbook. For other subjects, there is a need for teachers to also have references and handbooks developed by the Supervisory Unit, Department of General Education, Ministry of Education. Most handbooks usually contain lesson objectives, guidelines on teaching, suggested activities and evaluation procedures.

Sri Lanka. First syllabuses for the skills-oriented subjects were prepared by the appropriate subject committees of the Curriculum Development Centre (CDC). These subject committees consist of both the CDC specialists and practicing teachers, carefully selected by the authorities considering their experiences, interest in teaching the subjects and their background knowledge. These syllabuses were then expanded and teachers' guides prepared for covering the expanded syllabuses. The teachers' guides

help even the most inexperienced teachers to teach the subjects in a manner that will ensure that the intended outcomes are achieved. They spell out the sequence to be followed, the types of activities and the ways they should be organized, the facilities which are to be used and, in the absence of such facilities, the alternative approaches which could be adopted. The guides also indicate the references which are to be made for the content in a particular area. These teachers' guides are printed and distributed to the schools by the CDC. When requests come for clarification of certain points/areas, enrichment materials are prepared and sent to the schools.

There is a lack of other types of instructional materials, such as projected teaching aids for vocational subjects in general education.

Socialist Republic of Viet Nam. Textbooks are available on agricultural techniques for grades six to twelve; on technical drawing for the grade 10; and on generators for grade 12.

Other textbooks being prepared for publication, including two textbooks and one document which deal with vocational education in the lower secondary schools; vocational education in the upper secondary schools; and rational employment of school-leavers.

All the above textbooks are accompanied by appropriate handbooks for the teachers. These handbooks contain lesson objectives, teaching guides, suggested activities and evaluation procedures.

Physical Facilities

The physical facilities in work-oriented education include special building or rooms; laboratories, workshops, storerooms, plots of land and the necessary equipment, tools, machines, furniture and fixtures, which are used for vocational subjects or practical experience activities. The equipment and fixtures in various classrooms for theoretical activities usually include chalk boards, bulletin boards, tables, chairs, electrical fittings and non-portable projection screens. Physical facilities for the practical activities for learners are planned in such a way as to provide for their most effective use. Their

size, furniture, equipment, tools and machines vary - according to the specific practical activities carried out in them.

A brief review of the physical facilities of the countries follows:

Bangladesh. Government schools have sufficient large classrooms and workshops which are adequately equipped with basic equipment for teaching vocational subjects. But in the general education system, there are about 7,000 non-government schools with practically no physical facilities and a lack of adequate equipment and facilities for work-oriented activities. Technical standards and equipment lists for these activities are not provided.

China. The need for special physical facilities for work-oriented education is met by providing opportunities for the students to work in factories. Among those middle schools which have introduced work experience and technical courses, most are situated in cities with school-run factories, in which students study and practise metal casting, timber-processing, fur-processing, carpet-weaving, motor-repairing, production of stationery materials and teaching aids. Schools in rural areas run small agricultural farms, small tea plantations, small orchards, fish ponds and animal breeding farms.

India. In the work education programme, 'social usefulness' is of paramount consideration. While production of marketable foods or rendering of remunerative services are not excluded, socially useful work (SUPW)/community service is particularly emphasized. This means that a lack of physical facilities is not a serious constraint. It is also relevant to recognize that SUPW is implemented, as far as possible, through regular school subjects. In other words, there is no requirement for large-scale additional inputs in terms of physical facilities.

However, at the secondary stage (i.e. classes IX and X) students are exposed to actual crafts/trades and are introduced to the use of tools in a scientific manner. Some physical facilities are required for this purpose.

According to the third educational survey nearly 5,000 schools had sufficient workshop area. Of these, 3,000 were schools managed by government/local bodies

and 2,000 were private schools. Of the 5,000 schools having adequate workshops, about 2,500 were adequately equipped. These schools offered excellent opportunities for work experience in subjects such as cane and bamboo work, spinning and weaving, carpentry and woodwork. About 7,000 schools had adequate equipment even though they did not have adequate workshop area. Many other schools had facilities of varying types. With such facilities about 200,000 schools were teaching crafts. Of these, about 150,000 schools were managed by government/local bodies and about 50,000 were private schools. The survey revealed that about 10,000 schools (5,000 Government and 5,000 private) had separate craft/work experience teachers.

Indonesia. All Government schools offering science and mathematics courses maintain well equipped laboratories for the students. These laboratories are also used in teaching skills education through practical work and to support theoretical activities. The laboratories, their equipment and the materials for practical work, are provided by the Government.

Special workshops and facilities for skills education are not yet provided in adequate numbers. The facilities are inadequate, both in quantity and in variety. The specifications do not meet the present standard requirements.

To be able to run skills education satisfactorily, each general school must have at least one workshop. To achieve this target, the Government has provided a skills Education Pilot Project as a part of the Five Year Plan.

In the frame of community and parental participation in the preparation of educational materials, the utilization of local resources is being implemented.

Japan. The local government authorities and some private organizations which are involved in establishing schools, have the main responsibility for the provision of the necessary facilities and equipment for work experience activities.

The Ministry of Education and Culture usually shares half the cost of all equipment for municipal compulsory schools (at elementary and lower secondary level), which includes the equipment used for work experience activities. At upper secondary school level, the Ministry of Education provides financial assistance in certain cases for

vocational subjects which are included in the general education courses under the Vocational Education Promotion Law.

The facilities and equipment for vocational courses are commonly used by general education courses. Some upper secondary schools also provide facilities and equipment for work experience activities by establishing a close co-operation with nearby vocational schools and there are some schools which use privately owned facilities such as private farms, on a contract basis, either voluntarily or on a fee paying basis.

Republic of Korea. At the middle school level, vocational subject activities are carried out using the following equipment and machines: working tables, drawing tables, lathes, drilling machines, fine measuring instruments such as micrometers and vernier calipers. In addition, about 250 kinds of tools are also used. For home economics classes, there are sewing machines and about 50 kinds of cooking utensils.

General high schools use the same equipment with the addition of drafting machines, computers (FORTRAN and BASIC) and typewriters.

Pakistan. Of the 3,500 general secondary schools offering agro-technical education programmes, some are well equipped, particularly those that were set up previously as comprehensive or Pilot Secondary Schools.

Sri Lanka. Most of the schools are provided with workshops and home science laboratories. A phased programme is underway to provide the remaining schools with physical facilities. The completion of this programme will depend on the level of funds allotted to this programme annually. In the meantime, the principals of the schools have been requested to set aside classrooms, preferably wire-meshed (for security and work-safety) for work-oriented subjects. All schools have been supplied with basic equipment and materials required to teach these subjects in a meaningful manner. A petty cash facility is also granted to all schools to buy various materials necessary for practical work. Circular-instructions are issued annually as to how this petty cash imprest should be used. This circular is revised periodically to increase the number of items on the list that could be purchased using this petty cash. Pending

covering sanction, the principals are authorized to exceed the petty cash imprest by 20 per cent. Non-consumable items of equipment are issued to the schools from the central equipment stores on request by principals.

Thailand. Instruction in work education at the elementary school level is usually conducted both inside and outside the classroom. Schools usually provide soil-boxes for planting, green houses, vegetable beds, farming areas and fishery ponds for agricultural activities.

At the lower and upper secondary school levels, most of the schools offering industrial subjects maintain well-equipped workshops and laboratories for students. Most large schools in every province can offer different kinds of work education and vocational courses. Students are provided, to the greatest extent possible, with real-life-experience opportunities in the farms, plantation fields, fishery areas, green houses and gardening areas. They are involved in working activities either in groups or individually within the school premises.

Socialist Republic of Viet Nam. There are 20 centres for technical education, established with the assistance of UNICEF, attached to 20 upper Secondary General Education schools. Many schools utilize the existing physical facilities in the local factories and adjacent farms in the districts for learning and working activities.

Each school receives the necessary physical facilities for technical practice and productive work from three sources: self reliance, aids from the local community and equipment from the central authorities. These facilities are used for school gardens, animal husbandry farms rearing fish (all the year round), pilot fields (strains, azolla), embroidery workshops, brick-kilns workshop, weaving and lace-making workshop, wood workshop, sewing workshop, tailoring workshop, blacksmith workshop, metal workshop, mechanical workshop, tractor driving workshop and radio workshop.

Preparation of Teachers

Intensive internship programmes are offered in some countries while in other countries some factories and agricultural farms are used for on-the-job training.

The training of teachers for work-oriented educational programmes in some countries is provided by teacher training colleges while in other countries the training is undertaken by the technical teacher training colleges and/or university departments of vocational and technical education.

As for in-service training, there are also substantial variations in the approaches adopted in the member countries.

Bangladesh. There is a severe shortage of technically trained teachers for work-oriented programmes in general secondary education. To meet the present need, the Bangladesh Education Extension and Research Institute is proposing to undertake a programme of in-service training of teachers.

People's Republic of China. Teachers of vocational subjects are mostly trained by the teacher training colleges. This also includes intensive practical training in factories or agricultural farms for a period of several months.

Other teachers for various vocational subjects are trained by the Industrial Engineering Institutes, Agricultural Institutes or the trade institutions.

Engineers and technical/vocational personnel from factories or agricultural farms, work at the above institutions as part-time teachers, or join the institutions as regular teachers after acquiring qualifications by attending courses offered by the state or institutions run by the economic enterprises. Experienced workers and farmers are also invited to share their knowledge and skills in guiding the students in practical activities.

The practical in-service training of general subject teachers undertaking vocational subjects is organized mostly in factories and agricultural farms. The engineers or technicians working at these factories or farms also act as instructors to the teachers during their in-service training, in addition to their utilization as substitute vocational teachers in the secondary schools.

India. All regional colleges of education provide courses consisting of two hours theory and two hours practical work per week in work related to specialization.

The National Council of Educational Research and Training (NCERT) undertakes regular in-service training courses for teachers of vocational subjects. The departments of education, in state governments, through SCERTs, also undertake in-service training courses.

Regional Colleges of Education have a one year B.Ed. course in work experience to enable subject-teachers to take up SUPW. There are about 1,000 elementary teacher training institutions and about 450 graduate teacher training institutions. The National Council of Teacher Education prepares model curricula for teacher training for the guidance of Board of Education/Boards of studies of the universities.

Indonesia. Teachers in vocational subjects or skills education programmes are graduates from technical/vocational departments of the universities. Some teachers are recruited from other areas of specialization and are then exposed to skills education programmes. Some teachers, with other educational backgrounds, volunteer to teach vocational subjects.

The pre-service training of teachers is one of the handicaps. Many people undertake pre-service teacher training only as their last choice. This does not provide a good basis for the pre-service training of teachers. In-service education for skills education programmes has been undertaken by the Ministry of Manpower and by institutions such as the Institutes of Technology and Agriculture.

Japan. The requirements for obtaining a teacher's certificate in vocational subjects at the lower and upper secondary school levels of general education are the same as those for obtaining a general-subject teacher's certificate. These are granted to university graduates (4-year education) who have acquired the prescribed number of credits in specialized subjects as well as in pedagogical subjects. As far as in-service training of teachers is concerned, the prefectural boards of education and prefectural Institutes of Educational Research are providing regular training courses.

Vocational teachers in upper secondary schools are quite distinct from teachers of other subjects, in terms of teaching content and ways of job execution, since they are responsible for practical work and experiments.

This results in their having a larger work load, both mentally and physically, then other teachers. They also have to undergo in-service education and training in relevant specialized fields because their teaching content is closely connected with fast changing industrial technology; thus, there is a need to update their knowledge and skills, demanded by industrial circles. In this connection, teachers undergo frequent in-service training in their relevant specialized fields.

Pakistan. The Institute of Education and Research, Lahore and the Technical Teachers' Training Colleges have been training M.Ed. and B.Ed. degree holders in relevant technical fields. Teacher training is also provided by six agro-technical teacher training centres with the task of preparing specialized teachers for teaching agro-technical subjects at middle and high school levels in the fields of industrial arts, home economics, agriculture and commerce. Nearly 3,000 teachers have been trained at these centres. New buildings are being constructed to create permanent training centres.

The Bureau of Curriculum and Textbooks under the Federal Ministry of Education conducts some in-service training programmes for master teachers. In addition, the provincial directorates of technical education, in co-operation with the government colleges of technology, organize in-service courses.

Orientation courses have been designed for heads of institution and inspectorial personnel. These courses are expected to provide the desired motivation among key personnel responsible for implementation of the programme.

An Advanced Technical Teachers' Training College is being set up at the federal level to prepare teachers for work-oriented programmes.

Philippines. Public and private institutions are providing special training for technical and vocational teachers. The Technological University of the Philippines is the leading institution in the country, providing such programmes. It works very closely with the National Manpower Office in carrying out these programmes. Other public and private institutions are also helping the government to carry out this programme. Another school which provides special training is the Marikina School of

Arts and Trade, situated in Metro Manila. These schools provide 3 to 4 years of vocational and technical training, including six weeks internship. Within this period of training, guided occupational experiences are also arranged.

Republic of Korea. Most of the teachers involved in teaching vocational subjects at the middle schools as well as the teachers of high schools (senior high schools) are trained by relevant vocational/industrial education departments in the universities and/or the universities providing certified vocational teacher training courses. The Chung Nam University has set up a model preparation programme for these teachers.

The Ministry of Education periodically organizes in-service education for these teachers in co-operation with the Department of Industrial Education of Chung Nam University.

Sri Lanka. Teachers of vocational subjects are trained by the technical teacher training colleges. The training is provided for two years, followed by one year of internship. Within these three years, action is taken to provide guided occupational experiences, that is, practical experience in industry which will enable the teacher to give effective counselling and guidance to the students who will be entering the field of work.

For those technical teachers who are already teaching in schools, the Curriculum Development Centre of the Ministry of Education is conducting regular in-service sessions, which are both residential and non-residential through its master-teacher network. As and when necessary, the master-teacher network is reinforced by providing the services of experienced technicians to assist the master-teachers who are regularly serviced by the Curriculum Development Centre. For this activity, too, the services of experienced technicians as well as university personnel are made use of. The master-teachers are either vocationally trained teachers or science trained teachers with many years teaching experience.

Socialist Republic of Viet Nam. The Faculty of Agricultural Techniques and the Faculty of Industrial Techniques in the pedagogical institutions are responsible for training technical/vocational teachers at the upper secondary school level. The prospective teachers undergo four years of study at these institutions and receive certificates of teaching upon graduation.

There are 33 pedagogical colleges, each of which has two faculties that train the technical/vocational teachers for the lower secondary schools.

As for in-service training of technical teachers, the provincial governments organize in-service training courses during the summer vacations. The schools which have a shortage of technical teachers are asked to send teachers of general subjects to participate in the in-service training offered in factories and farms.

Thailand. The College of Technical and Vocational Education offers two levels of vocational courses.

Graduates of the College of Technical and Vocational Education under the Department of Vocational Education who hold a secondary school teachers certificate or a higher certificate of vocational education are eligible for appointment as teachers of vocational courses at the secondary school level.

At present, a large number of vocational teachers are needed to meet the requirement of the schools.

The teachers of vocational courses require periodic in-service training for upgrading both vocational skills and teaching skills, to enable their students to effectively pursue careers and acquire desirable work habits.

Vocational training centres in the country periodically organize in-service training for teachers of vocational/technical courses. However, there is a need for more systematic organization of various technical colleges, vocational colleges and vocational training centres.

Career Guidance

While in some countries this particular aspect has not been given emphasis, in most countries efforts are being made to develop career guidance and vocational counselling as an integral and essential part of the school curriculum.

Special features of the programme

1. It subscribes to the idea that career development is a process within a person and its focus is the self. Work enables an individual to have value clarification and self awareness.

2. It adopts an integrative as well as an integrated approach: integrative because it enables the student to continuously assess himself and integrated because it is multidisciplinary.

3. It makes provision for students to explore role options, to try out, evaluate and if so desired, change choices.

4. It recognizes that career commitments are tentative; stress is therefore placed on continuous evaluation of the self, appraisal of the environment, and development of decision-making skills.

Educational components

The life career development model is composed of the following domains:

1. Self-knowledge and interpersonal skills.
2. Knowledge and understanding of life roles, settings and events.
3. Life-career planning knowledge and skills.
4. Basic studies and occupational preparation.

Bangladesh. Although in the existing four Universities there are fully-fledged psychology departments, any provision for career guidance in work-oriented secondary school activities is not available at present. It is expected to be introduced in the near future.

People's Republic of China. The general high schools train qualified students for higher institutions and train a labour force for the developmental needs of the country.

As for the selection of vocation, there are no special organizations for professional guidance, but the schools themselves organize various kinds of out-of-school activity groups, such as those involved in techniques, or groups dealing with electrical engineering technology, and involved in plane model making, fine arts, singing and dance, table tennis and other sports. Children's Palace and spare-time sports schools also organize various kinds of extra-curricular activities. There are teachers for providing guidance in all these activities. Many students choose their future vocations through participation in

these activities. For example, many of the sportsmen in the country emerge from such groups or spare-time sports schools.

India. NCERT has a fully-fledged Psychology Department and runs a diploma course in guidance and counselling. Various universities also run similar courses. The Ministry of Labour, through its Directorate of Employment and Training, offers facilities for vocational guidance. State Education Departments appoint guidance counsellors in educational institutions. These counsellors receive in-service training in colleges of educational psychology or, through NCERT, in Regional Colleges of Education.

In the scheme of vocationalization at the senior secondary stage, these counsellors are expected to be of particular help to students under training to enter the vocational stream.

Indonesia. The number of personnel involved in guidance and counselling activities is sufficient for the general junior high school level. However, there is a shortage of personnel who can perform such services at senior high school level. The existing personnel are mostly assigned for general guidance and counselling service programmes.

The guidance personnel are mostly trained in IKIP*) (university level institutions for pre-service education of teachers), for the bachelor's and master's programme. The number of graduates from these IKIPs cannot meet the present requirements of junior and senior general secondary education programmes. In order to cope with the shortage of personnel in this field, special in-service teacher training programmes on vocational guidance and counselling are regularly organized for all headmasters of senior general high schools.

At each school level, detailed cumulative records of students' progress are kept, which are helpful in providing appropriate guidance and counselling.

Japan. In a recent revision of the curriculum standards for lower secondary and upper secondary schools, the importance of career guidance was stressed and resulted

*) IKIP - Institut Keguruan dan Ilmu Pendidikan

in the decision to provide career guidance in a systematic manner, through a whole range of school activities. The classroom or home-room teachers are expected to play a very important role in this field.

Pakistan. The organization of career guidance programmes remains limited due to the unavailability of standardized diagnostic testing instruments. Pending preparation of tests standardized on Pakistani students themselves, a core of personnel who have completed special courses in vocational guidance and counselling at the Institutes of Education and Research, offer rudimentary career guidance services. However, both their scope and success remain limited. Parents, demanding that their sons and daughters become medical doctors and engineers, particularly in urban areas, do not attach proper importance to the 'world of work', and consider general education as preparatory to higher education in fields which have greater potential of higher returns in terms of social status or monetary gains.

Republic of Korea. Career guidance in the Republic of Korea is a process of self-development that starts from the second grade of the middle school. This programme has been carried out through the following approaches:

1. Career guidance through aptitude testing. Aptitude testing is administered to all students of the second grade of the middle school. The results are discussed with the parents.

2. Orientation towards choice of career through counselling. The counselling services provided to assist students are based on their personality, scholastic achievements, family background and aptitude testing.

3. Career guidance through participation in practical work and experiments. Through participation in various experiments and practical work, the student's interests, abilities and aptitude are identified.

4. Career guidance via extra-curricular activities. The secondary school sets aside two hours per weeks for extra-curricular activities. This

period is provided to enable students to explore activities and opportunities related to their role and future occupation.

Sri Lanka. At present, unfortunately, there is no facility to provide career guidance to the students of general education. However, the teachers through the assessment on students performance have a fair knowledge about the direction of the students' main interests and capabilities, which enables them to advise the students, after consulting their parents, on what courses to follow and what subjects to select. This is not done in a very systematic manner and is still not promoted in all schools. There have been occasions where teachers are found to have been giving a wrong advice. In addition, some teachers are reluctant to advise the students regarding their future studies, or choice of occupations. Perhaps the teachers do not know the proper techniques for assessing a student for proper guidance. Hence the latest proposals for educational reform give an important place to vocational guidance and counselling including career guidance.

Thailand. Career guidance is deemed important and necessary for schools at all levels of general education. Great efforts have been made by the Guidance Centre, the Department of Curriculum and Instruction Development, to supervise school administrators and teachers, to conduct in-service training for school counsellors, to publish guidance handbooks, to render counselling services to students and to utilize all kinds of mass media for guidance of the general public.

In terms of career guidance, school counsellors usually provide a variety of programmes and activities, such as individual and group guidance, work orientation, placement services, vocational interest surveys and inventories, vocational aptitude testing, occupational information services, vocational bulletin-boards, plant tours, lectures and discussions on interesting occupations and projection of selected slides and films. Nevertheless, the effectiveness of career guidance depends largely on the qualification of school counsellors. Owing to the shortage of school counsellors and the deficiency of their counselling techniques, the Guidance Centre has planned to conduct annual in-service programmes to increase both the quantity and quality of school counsellors throughout the country. It is hoped that when every school

has at least a qualified school counsellor, career guidance will be more effective.

Socialist Republic of Viet Nam. Vocational orientation and guidance play an important role for the preparation of the necessary manpower according to the developmental needs of the country.

1. Choice of a career. Pupils follow their social conscience in the choice of a career. It is necessary for students to be fully conscious of the present trends of the development of the national economy (the development of agriculture being most essential) and of the strong demands for skilled man-power in the various branches and trades of the society (agricultural, fishery, forestry, handicrafts, and small industries).

2. Self-determination in the choice of a career. It is essential that pupils have the right to self-determination in the choice of a future career. This self-determination enhances a sense of responsibility in their choice, brings into full play their initiative in amassing professional knowledge and encourages them to work hard in the chosen field.

3. Discussions and elucidations in the choice of a career. Teachers are used to assist pupils in their choice of career, in accordance with their aptitudes and the prevailing needs of the country.

CHAPTER THREE

IDENTIFICATION AND ANALYSIS OF ISSUES AND GROWTH POINTS - IN-DEPTH STUDIES ON SELECTED ISSUES

Based on the overview of policies, programmes, and plans of the participating countries, the Panel identified 36 issues and growth points for in-depth consideration. For purposes of further attention, the Panel made a short-list of eight issues, keeping in mind the gravity of problems encountered and the seriousness of concerns expressed. The eight issues so identified for in-depth study are as follows:

(i) Developing work ethics and work habits at school;

(ii) Including vocational orientation and guidance in the school programme;

(iii) Taking education to the work situation;

(iv) Using of local human and material resources;

(v) Promoting public acceptance;

(vi) Researching and summing-up experiences;

(vii) Assessing of student performance; and

(viii) Training teachers and providing instructional materials.

Work Ethics and Work Habits

Attitudes towards work

1. The importance of work-oriented education for the development of work ethics (industriousness, sense of responsibility, creativity, honesty, diligence) and proper work habits (discipline, punctuality, work-safety habits, sense of perfection and excellence) of young people, as well as other characteristics of personality (loyalty, collective spirit, devotion to a common goal, altruism) was stressed by all participants.

2. Although adequate research and surveys have not been undertaken with regard to the attitude of young people towards work, the country statement have shown clearly that, while some countries have promoted work ethics and proper work habits, in other countries these were tasks for improvement.

3. It was also clear that negative attitudes and the lack of appreciation of work ethics and proper work habits were one of the main factors for the re-orientation of many countries towards work-oriented education. This resulted in their strong efforts to introduce productive work and vocational experiences in their general education systems, especially at secondary level (junior and senior high school levels), coupled with the introduction of vocational career guidance at a very early stage and providing for further vocational training upon graduation from high school.

In this connection, it was interesting to note that many countries in Asia have introduced some extra-curricula activities for the development of positive attitudes towards work, such as cleaning up of schools by the students themselves together with their teachers, participation of non-student youth, and youth organizations in voluntary and socially useful activities.

Movements like the young pioneers in China and Socialist Republic of Viet Nam, and the boy scouts and girl guides in Bangladesh, India and Sri Lanka can be cited as good examples.

Factors influencing attitudes towards work.

1. Deeply rooted traditions of a dislike of manual labour, coupled with the hardships of the working class and a heavy, exhaustive workload - due to old-fashioned, primitive and non-productive technologies, leading to low productivity and low income; a generated preference for so-called 'white-collar' occupations while the developmental needs of the countries present a strong demand for skilled labour.

2. Many changes in social and family life in the process of socio-economic development in some countries have led to a considerable reduction of opportunities for young people to participate in such work-related activities as making things, raising animals and plants, and helping with house work.

3. The rapid pace of social and technological change, coupled with a high rate of population growth, has exposed children and adolescents to new patterns of life. Parental control over the young generation seems to be gradually weakening. This situation appears to have already affected the work ethics and work habits of many young people.

4. The strong desire of many young people to enter universities and sometimes wrong emphasis placed by the universities on their entry requirements has resulted, in some countries, in general education programmes where academic subjects dominate the work-oriented, practical subjects.

5. An over-emphasis on academic subjects by teachers has also affected the learners' attitudes toward the world of work.

6. The ever increasing ambition of parents to see that their children pursue higher academic education is another contributing factor for this tendency.

Innovative experiences in promoting appreciation of the dignity of labour.

1. In most of the countries the development of positive attitudes towards work has become one of the main educational goals.

2. The extension of the general secondary education course, introduced in some countries (like China), strongly emphasizes work-oriented vocational subjects and out-of-school activities assisting the local community, help which brings about a change in attitudes and the development of work ethics.

3. The orientation of teachers and the whole society towards socially useful activities through various campaigns has resulted in changing young people's to useful work at home and in the community, and has helped in building positive attitudes towards the world of work.

4. In this connection, it is noteworthy that not only at the secondary school level but also at the elementary level, meaningful work experiences have contributed to building the right attitudes of young people towards work and the choice of a working career. This has also contributed to the development of proper work habits.

Need for research. It was strongly felt that there was a need for concentrated research work in these aspects and that inter-country exchange of ideas and experiences in innovative approaches in promoting work ethics and proper working habits should be carried out.

VOCATIONAL ORIENTATION AND GUIDANCE

Background

Guidance and counselling are always an important part of educational programmes; it is through them that the students are guided in their choice of occupation or vocation. For this reason most countries have Teacher-Training Institutions that offer training for guidance and counselling teachers, and which include guidance and counselling subjects in the training of elementary and secondary school teachers. In-service training is also provided for teachers who are already on the job to enrich their training in guidance and counselling. Every elementary or secondary school teacher is expected to provide some guidance and counselling to the students.

Aside from the special training mentioned above, some countries are using activities outside the classroom to enrich the guidance programmes. These include: seminars and workshops on guidance and counselling-both international and national in scope; celebration of Guidance Weeks which proves very effective in information drives. Needless to say, the effectiveness and success

of guidance and counselling programmes depend largely on the qualifications of the people who will carry them out.

Objectives of Guidance and Counselling Programmes

The Guidance programmes in countries of the Region have the following major objectives:

1. To help to know one's self and promote self-realization and self-fulfilment;
2. To develop interpersonal skills;
3. To have a better understanding and knowledge of life roles, settings and events;
4. To help develop the ability to plan life-careers;
5. To help students in their basic studies and occupational preparation; and
6. To help students choose work experience, according to their aptitudes.

Description

Guidance and counselling programmes are one aspect of education which is very important to the learners. They consist of a long and continuous process of self-examination, self-appraisal, especially in the choice of a life career. Such programmes cover three aspects: educational, vocational and personal. They are learner-centered and are intended for all learners at all levels of learning.

These programmes help the learner to make decisions regarding his choice of vocation and realize his special interests, his strong and weak points so that he will be properly guided in choosing a career.

Implementation Details and Innovative Approaches

In most countries efforts are being made to improve guidance and counselling programmes. In the Philippines, the College of Education of the University of the Philippines is offering a Master's Degree and Ph.D. courses in Guidance. All elementary and secondary schools, both public and private, are required to employ guidance counsellors to provide directions for students in choosing their life careers. The same is true for Viet Nam, Thailand and Korea. India has a well-organized programme handled by

the NCERT, involving even the Ministry of Labour and Employment in running guidance programmes. In Pakistan, guidance and counselling is a compulsory subject in programmes preparing secondary school teachers. At M.Ed./ Ph.D. level, guidance and counselling can be taken up by students as a major in the graduate courses.

In China, schools organize various kinds of out-of-school activity groups, such as groups of radio engineering, electrical engineering and fine arts, to carry out this programme. Childrens' Palace and spare time sports schools also help organize these activities. Children exposed to these activities often choose their vocation in accordance with their vocation in accordance with their interests.

In Indonesia, IKIP, the Institute for Teacher Pre-service Training is offering a Bachelor's Degree and a Master's Degree Programme for teachers. Most countries are now starting to formulate aptitude tests to help carry out guidance and counselling programmes.

Different innovative approaches have been used to carry out these programmes more effectively: group and individual guidance and counselling; conferences with students and with their parents; home-room activities; utilization of academic subject teachers; practical experiments; psychological testing; co-curricular activities; the use of student profiles and records; and home visits.

Constraints and Problems

Any change from a traditional practice is bound to encounter some resistance. Prior to the introduction of guidance and counselling programmes, many people, especially parents, believed that they knew best regarding the future of their children. Thus, resentment grew when guidance counsellors started giving direction to the choice of careers of the children. Parents wanted their children to take up careers that would lead them to white collar jobs after graduation, even if their abilities did not suit them for such careers. This resulted often in children being torn between the guidance counsellors on the one hand and their parents on the other.

In some countries the training given to guidance counsellors and teachers is not adequate, with the result

that they often commit mistakes in their work. This is turn destroys the credibility of the guidance counsellors.

The lack of aptitude and psychological tests is also felt in some Asian countries. Even when these tests are available, they are often culture-bound or have different norms. The proper use of such tests involves considerable expertise on the part of guidance counsellors, which they often lack.

Other problems experienced in some countries include an inadequate supply of guidance counsellors and a lack of relevant training institutions.

Recommendations

1. Guidance and Counselling Programmes should be included in all elementary and secondary schools;
2. All teachers should be provided with training in guidance and counselling;
3. In-service training should be conducted periodically to upgrade guidance counsellors' quality of performance;
4. Psychological tests and diagnostic instruments should be formulated;
5. The linkage between the parents and the teachers should be strengthened;
6. Information campaigns for public acceptance of the programmes should be enhanced; and
7. Preparation of instructional materials and teachers handbooks should be hastened.

TAKING EDUCATION TO THE WORK SITUATION

Perspective of Life-Long Education

Programmes of interaction between education and productive work should be developed in the perspective of life-long education. The effective interaction between education and working life has to be promoted in the context of preparing all children and young persons for their future work and life by strengthening the relevance of educational

programmes of life-long learning. Efforts to establish such interaction should, therefore, relate to all levels and all forms of education.

'Taking Work to Education'

Action to establish such interaction at different levels of education may include the introduction into educational curricula and programmes creative and productive activities, and participation in socially useful activities or actual practical work within or outside the educational establishments.

'Taking Education to Work'

In a rapidly changing world of work it is important to introduce training in the areas of new technologies while further developing knowledge in the traditional sectors, and to ensure that life-long education affords young persons and adults opportunities for regular updating and upgrading of their skills and knowledge in line with scientific, technological, economic, and social advances. It is equally important to promote an understanding of the basic scientific principles applied in the various fields of work.

The Two Options

Interaction between education and work experience has thus to be established in two ways:

a) by including productive work in the teaching and learning process in educational institutions;

b) by establishing more favourable conditions for working people to continue their education without giving up their work.

Target Groups Children

In this paper we take up for detailed consideration the latter proposition. 'Working people' may comprise young persons or adult workers; but, the proposition will be equally valid in either case. Ideally, children should go from 'education' to 'work'. But, this may not always happen. In developing countries, particularly, children are required to work to supplement parental income. We have, therefore, also to think of taking education to their work situations. So long as children are not

engaged in occupations which are hazardous to their health/ safety or harmful to their harmonious development and so long as they are not subjected to exploitation, there may not be any objection to child-labour per se. In such cases, the interests of children may be served by offering educational opportunities which will not interfere with income-generation activities.

Conventional education, whether it is general or vocational, has been criticised for its inflexibility - for permanently consigning students to one or the other stream. There was little scope for self-learning and, consequently, for educational or occupational mobility. Hence, the emphasis now is on a wide choice or combination of courses, provision of 'bridge'/remedial courses. It is in this context that vocational courses now seek to incorporate elements of language teaching and general education subjects, just as general education courses incorporate elements of socially useful work experience.

General Foundation Course (GFC)

This general education component for persons already engaged in vocations (or, vocational education) can be described as a 'general foundation course'. It is recommended that this should provide a broad background area of knowledge of life and history. Such a course will equip the student with the minimum knowledge which will broaden his outlook and provide him with essential information about various inter-related matters which are helpful for successfully pursuing any work on his own. Vocationalized knowledge and the development of related skills on their own are not enough to enable a person to enter life and set up his own establishment, however small it may be. The general foundation course is expected to fill this gap, giving general information on the history of science and technology, or on the elements which are common to different vocations. With regard to the latter, for example, the course could include units on marketing of products, entrepreneurship, co-operatives, credit facilities, management of small farms, small cottage industries, adaptability to changing situations, and a general exposure to world trends. Special emphasis can be laid in the general foundation course on rural vocations.

Objectives of GFC

The objectives of the course will be to enable the students to:

a) become aware of the need for rural development and self-employment;

b) understand the place of agriculture in the national economy;

c) develop skills and managerial abilities to run small scale and cottage industries; and

d) gain insight into the problems of unemployment, under-employment, under development, and economic backwardness.

This was apparently what the International Conference of Education Ministers (1981) had in mind when it resolved that 'vocational and technical education and training programmes should, wherever possible, be arranged so as to provide training in professions which are not narrowly specialized, allowing the interaction between general education, theoretical instruction, practical training workshops, and other similar facilities, including field-work'.

Workers

Apprentices and other persons undergoing training in employment for whom non-educational authorities or employers have primary or joint responsibility must be given adequate opportunities to attend school on a part-time basis or to follow courses of related instruction and further general education through day release, block release, sandwich or other similar arrangements. The status of apprentices should be improved with respect to their rights and obligations as workers as well as with respect to the right to a full education*. Those responsible for such training should be obliged to take the educational needs of their trainees, including the need for future mobility, fully into account. Educational authorities and institutions should take steps to gradually introduce such opportunities, or should participate in designing them and ensure their implementation.

* The Shramik Vidyapith project organized in India as part of its Adult Education Programme does exactly this for workers in factories.

Adult Education

Where education of children is properly taken care of, the problem of adult education from the illiteracy angle may not be there. But, even these adults would require education as part of a life-long continuum. In adult education, interaction between productive work and education should be established by:

a) programming of educational activities as an integral part of national plans and programmes for technical and economic development, change in occupational structures, the combating of under-employment and unemployment, and the development of new economic activities;

b) providing educational opportunities in line with the needs of countries on the one hand and of individuals and groups seeking improved opportunity on the other; and

c) applying, as appropriate, functional principles in teaching basic literacy and numeracy as well as the capacity for creative and critical thought.

Different Models

Various arrangements are possible for taking education to work situations. Some of the more common ones have been cited in the Resolution quoted earlier. Described below are some other alternatives:

Distance learning. It is promoted through distance-learning techniques. This is not exactly uncommon; many correspondence courses and other media-based approaches have been tried out. But, special mention can be made in this context of two new developments:

i) ETV programmes, particularly using the satellite technology, for direct address to specific target groups in far-flung areas.

ii) 'Open Schools' for providing general education and life enrichment courses through a correspondence-cum-contact process.

Open schools are different from routine correspondence courses in that they do not insist on a

rigidly prescribed combination of subjects. It is open to the candidate to pick from the list any subject or subjects of his choice. More interestingly, it is not necessary to do a group of subjects at the same time. A learner can accumulate credits, subject by subject. After accumulation of a minimum number of credits a certificate/diploma is awarded. India has a model in operation of such an open school for courses at the secondary level.

Functional Literacy Programme. In many developing countries, besides adult education programmes, special 'functional literacy' projects are organized for mothers/adult women. It will be useful to exploit this forum for promoting an understanding of the basic scientific principles applied in the various fields of work. An approach to this target group has been singled out for special mention because of the potential available through this medium of reaching children. The expectation will be that once properly oriented, mothers/women will be able to help children at home to understand the basic scientific principles with reference to routine domestic chores.

Condensed Course for Women. In some developing countries, in the context of increasing emphasis on education, 'condensed courses' are being organized for rural women. As in the case described in the preceding sub-paragraph, here again excellent opportunities are available for reinforcing interaction between 'work experience' and 'education'.

Nomadic Tribes and Migrant Labour. Special mention has also to be made of nomadic tribes and migrant workers. The international conference of Education Ministers (1981) had also called for 'efforts to secure interaction between education and productive work..... in respect of the education of migrant workers and their children'. There are cases of appointment of peripatetic teachers with nomadic tribes or of establishment of 'mobile creche/ schools' for migrant labour.

More authentic information should be available about the experience of such experiments to enable improvements.

Context-Oriented (Non-formal) Education for Children

Some countries are beginning to organize such special (out-of-school) education even for children in the school going age group. This is out of a realization that many children are unable to avail themselves of the facilities offered by the formal school system because of socio-economic factors. Provision of free education or any amount of compulsion is not likely to be of any consequence in that situation. Hence the need of alternative strategies.

One significant alternative strategy is a non-formal system of education. (Care is taken here to clarify that not enough experience is available yet with this new strategy to designate it as an alternative). The non-formal system seeks to provide educational opportunities for out-of-school children without interfering with their domestic duties and income-generating activities. In the model in operation in India, the non-formal system initially has divested itself of the rigidities of the formal system,e.g. rigidities relating to location, timing, duration, frequency and session. Even this limited innovation seems to have produced substantial returns, judging by the 73,000 centres serving 1.5 million children.

In the next phase of the operation, India is preparing to further non-formalize education in these centres by changing the content and the methodology. The significance of the strategy lies in the attempt to decentralize the process of curriculum development.

Built-in 'Integration of Work and Education'

Through every teacher training institution, all teacher trainees are trained to prepare teaching-learning materials with reference to locally relevant problems/ issues/events. These materials will be known as 'learning episodes'. Every episode is designed to impart knowledge and skills about a locally relevant work experience.

Incidentally, there will also be educational inputs relating to literacy, numeracy, and so on. An effort has been made to identify sequentially the minimum levels of competencies that are achieved in the formal system and care has been taken to build them into the 'learning episodes', so that the context-oriented education is not devoid of substance. As can easily be seen, such an approach has built-in provisions for integration of work experience with education. Since it is related to the life needs, it is expected to be more relevant and, therefore, more attractive. The results of this phase of non-formalization of education in India will have far-reaching implications and will need to be closely observed and chronicled.

Spare Time School. The 'Spare Time School' project of China has also demonstrated that education can be integrated with work experience in out-of-school situations. Under this project, school facilities are utilized during spare time for the benefit of out-of-school groups. There are both spare time primary schools and spare time middle schools. The schools in the countryside offer literacy programmes. The middle schools in the countryside relate education to specific vocations e.g. farming, fishing, weaving. Such schools in the industrial sector offer refresher courses for workers to reach the middle school level.

Viet Nam Project. The Socialist Republic of Viet Nam has an interesting project of integrating educational institutions with the community and thereby providing opportunities for workers to have access to education - general and technical. In a sense, this project is akin to the Community Polytechnics set up in India. The results of these efforts deserve to be reported in detail.

Saemaul Movement in Korea. The Korean Saemaul Education project has demonstrated that work-oriented concepts stressing work ethics and work habits can be well integrated with the vocational and technical curriculum of the Saemaul Secondary School.

The Indonesian Experiment. The Indonesian project of integrating education with farming is worthy of mention. In this experiment opportunities are provided for farmers to receive general and vocational education. These farmers are either illiterate persons or are from the primary school drop-outs. As a result of this experiment, they become literate enough to read and write; some of them are even able to pursue higher levels of education.

Projects in Thailand. Thailand has some useful models to offer. Their projects relating to work-oriented education for refugee - children of Laos and Kampuchea and for the children of their own hill tribes - are worthy of study. Besides, the adult education projects of their non-formal education department are well known. Mention may also be made of the voluntary social work rendered by students in Thailand.

The Young Pioneers, Scouts Guides. It will be relevant in this context to recognize that there are some voluntary movements like the Scout/Guide movement (many countries), the pioneer movement (Viet Nam) the young pioneer movement (China), the National Service Scheme (India) which seek to promote integration of education and work experience both in school and out-of-school. These movements, particularly the scout movement, place emphasis on values like self-reliance, helpfulness, service to society and are, therefore, of fundamental significance in promoting integration of education with work experience. It will be of value to take account of such movements while prescribing co-curricular activities.

Experiences of Pakistan. Some projects in Pakistan have related objectives. The Allama Iqbal Open University, for example, offers credit courses on topics like food and nutrition, vegetable growing to help workers to learn more and to improve their skills as well. The 'Mohalla School' project is intended to enhance the knowledge and skills of women in home science subjects like cookery, embroidery, rural crafts. The 'Village

Workshop School' project is intended to cater to the needs of school-dropouts to learn in their work-oriented activities.

Refinements Required to Improve Work Experiments

Whatever the arrangement evolved, care has to be taken to ensure that both educational and vocational inputs are of acceptable standards. In the situation in which work experience is brought into schools there will be no difficulty because both inputs will remain regulated. In the situation of non-formalization through 'learning episodes' described in the preceding paragraph there will also be no problem because adequate scope to regulate the work experience will be available while formulating the 'episode'. It is in the situations that fall between these two extremes of the spectrum that some problems may arise. Provision of special faciliti s for nomadic tribes or migrant labour, for example, may not have much mano-euvrability for effective integration of education with work experience. Unless definite steps are designed to meet such situations, 'routine labour' may pass off as 'work experience'. At the same time, the work efforts of people involved cannot also be brushed aside lightly. It will be necessary to explore possibilities of refinements to their effort to improve them for integration.

Criteria for Assessment

Bearing in mind the basic principles that have been enunciated, it will be useful, in this context, to keep in view some criteria for selection of work experience.

a) To be educative, the experience should be according to the developmental level of the children; cater to their developmental needs; help to develop the total personality of every child and help the process of their self-realization. The activities should involve problem-solving skill and creative thinking and help formation of values like honesty, discipline, industry, team-spirit, inventiveness, thrift; help children acquire relevant knowledge, skills; and help children to grow as efficient workers.

b) To be productive, the experience should result in either products which are directly consumable by the children and the community, particularly, the school community and if need be, saleable; or services having social and economic values.

c) To be socially useful, the work should be relevant to meet the needs of the community and the individual child.

UTILIZATION OF LOCAL HUMAN AND MATERIAL RESOURCES

In most developing countries the budget earmarked for education is not adequate to carry out programmes in educational innovations both in terms of personnel and of physical facilities. Efforts have been made to meet the increasing cost of education by making use of all available trained personnel and material resources. Some countries have even employed retired teachers, engineers, technicians and farm workers to deliver lectures and to assist in the vocational training of the youth. Available inexpensive materials are also used such as bamboo, recycled materials and rattan. Old machinery is repaired and used by students. As a result, in spite of the very limited budget and the ever increasing population, these countries have been able to implement the programmes with very encouraging results.

In some countries, such as China, India, Indonesia, Philippines and the Republic of Korea engineers and technicians from the Institute of Technology and Agriculture, the Ministry of Manpower and from senior secondary vocational schools are invited to help with the training of work education teachers. At the same time private factories, firms and hotels help in training students.

The Ministry of Education in Thailand has been trying to utilize the local resources surrounding the schools. At present the Ministry of Education has proclaimed 'The Regulations Governing Students - Training at Learning Resources, Business Enterprises and Self-employed Business Secondary Level', of 1980.

Low-cost local materials are recommended for use in work-oriented programmes. Some of these materials have been neglected and wasted. Old machinery and other

equipment must be put into use. Repairs of this equipment can even be a part of technical education.

People's Republic of China

China is a vast country with a large population whose economy needs rapid development. The budget for education is limited and there are no specialized vocational teacher training institutions. Therefore, the role of local district authorities and the active involvement of the masses has to be brought into full play.

The Utilization of Human Resources. The professional teachers for work-oriented education and vocational education are usually trained in the departments of physics, chemistry, biology and other departments of Teacher Training Universities and general universities. After graduation they work in factories and farms for three to six months, and then teach work-oriented and vocational courses in general middle schools. These teachers have already spent some time working and having practical experience in factories or farms while studying in universities. In addition, many of the university students in China come from factories and farms, hence many have already acquired some technical skills. As a result, the teaching quality is quite good.

Schools invite engineers, technicians from industry and agricultural technicians to become part-time teachers. Some of them receive very little pay, while other work voluntarily.

Schools invite retired teachers and engineers to teach or give guidance services.

Schools invite outstanding workers and veteran farmers to deliver lectures and share their experiences with the student.

The Utilization of Material Resources. Frequently enterprises or other organizations supply materials and equipment, much of which consists of old machines provided by factories, to set up school-run factories.

Teachers and students work together to produce instruments and tools.

People's communes offer land for the schools to use as farms, fishing ponds and animal breeding farms.

The schools which do not have their own factories establish links with certain local factories where their students may go to work on a regular basis or from which they can receive raw materials for processing in the school; e.g. carpet-weaving. Schools and students receive some income for doing these jobs.

Existing Problems. Limited financial resources and the low salaries of teachers are not very attractive to the specialists. This creates difficulties in obtaining highly qualified part-time specialist teachers.

The equipment at the school factories is often inadequate and unsophiticated neither satisfies the training needs of the students nor directly links theoretical knowledge with practical experience.

Some factories, which are heavily involved in their own production plans, are unwilling to accept the young junior middle school students.

India

Utilization of Local Human and Materials Resources 'Earn While You Learn' Programme. With regard to the utilization of local human resources, an interesting Indian experience can be cited. In many places in India elementary schools buy jute mats for students to sit on. In the central Indian state of Madhya Pradesh an attempt was made to utilize the manpower available in schools and teacher training institutions to produce these mats.

With some seed-money, looms were installed and raw materials were supplied. The educational institutions responded enthusiastically to supplying large quantities of mats.

There was no problem of marketability because the mats were made to order by the Director of Education for supply to schools.

The experiment was so successful that it has been expanded to cover about 500 schools. Mats worth about $250,000 are produced every year. Besides gaining work experience and the development of positive attitudes towards work, the students also earn an income of about $5 per month. This monetary incentive has its own influence on the enrolment and retention of students in schools.

In order to prevent the economic aspects predominating at the expense of educational implications, efforts are underway to introduce academic linkages with this 'Earn while you learn' programme. For example, students may be required to have a minimum level of classroom performance if they wish to register for the programme.

In the State of Kerala in India, school students engage themselves in the manufacture of exercise-books. There, again, the experience has been very encouraging.

HOW TO PROMOTE PUBLIC ACCEPTANCE

The idea of work-oriented general education is still unpopular in some developing countries. Such countries are not in favour of incorporating work-oriented education in the general secondary education stream. After graduating from secondary school the young people aim for higher education and try to qualify to get a job which will not involve any physical labour. This system of education cannot meet the various demands of the country, particularly in the fields of agriculture and technology. In addition, there is unemployment among those who finish academic course.

Work oriented education is essential for a developing country. In order to promote public acceptance the Panel made a number of recommendations.

1. In developing a work-oriented education curriculum:

   a) Work experience should be made compulsory in the general secondary education stream and technical and vocational subjects should be made 'examination subjects' and a pre-requisite for higher education.

   b) Work-experience must be based on environmental and local needs. In different localities work-experience subjects should be relevant to local needs. For example, if a locality is mainly an agricultural one, then the children of peasants should go to an agricultural school. If a student learns the skill of producing an improved product, applies that skill in a practical way and increases production, pubulic acceptance will be increased. Also if

parents are involved in choosing work-experience subjects in particular communities, public acceptance will be promoted.

c) The subjects taught in general secondary education should be related to work-experience. This system has been introduced in Viet Nam. Studies are being conducted to find a way of linking general subjects to work experience. If the outcomes are fruitful, they will promote public acceptance of this system of education.

d) Work-experience should be introduced at an early stage: the younger the students are, the less status conscious they are likely to be.

e) Pilot technical and vocational schools should be established in each locality. Local artisans and skilled persons should be engaged, if necessary.

f) Progress reports on vocational subjects, along with other subjects, should be sent to the parents. These comparative subject reports will help the parents understand the aptitudes of their children and the importance of vocational education to them.

2. Job provision and self-employment instructional materials should be made easily available to those who graduate from secondary schools. Jobs should be based on the vocational and technical training offered in general secondary education. Good employment prospects will make the younger generation realize the importance of technical and vocational education.

Involving the young generation in socially productive work could lessen the socio-economic problems of a country. Students, weak in academic subjects, should be oriented in time towards vocational courses so as to acquire better jobs, rather than becoming failures

in the academic stream. It is important to promote the vocational orientation of these students among their parents who often wrongly force them towards the academic area for which they are not suited.

3. The successful introduction and acceptance of work experience by the public depends a great deal on the teachers of these subjects. If technical and vocational teachers are not well-trained and cannot provide quality education to the learners, the results will be a failure and acceptance by the public will not be forthcoming. Therefore, there must be provision for adequate incentives for the teachers to remain in this area of education.

4. Some 'part-learn, part-work upper secondary general education schools'; where students can learn culture and technology should be established. At the same time they should be able to engage in the production of materials which will help them earn an income.

5. Precautions must be taken to avoid accidents in vocational training. Also, care should be taken to ensure that this system of education will not be harmful to the learner's health and psychological development.

6. Work and vocational education should be widely promised through various kinds of media.

   a) Experts on vocational and training programmes should write articles in newspapers and magazines stressing the need and usefulness of this kind of education and different programmes relating this kind of education to nation - building should be promoted through radio and television.

   b) Statistics on the rate of unemployment due to the academic oriented education and lack of technically trained personnel must be well publicized.

   c) The teachers and the parents of the learners should hold discussions about the usefulness

of work experience. The parents should be allowed to actively participate in this programme. Also the articles produced by the learners should be displayed to the public. The best participating parents should be rewarded.

d) In schools, the teachers must work with the learners. The learners should be asked to apply what they learn in school, in the home and in the country. Work will make them physically strong. It will also develop in them the habit of honouring the dignity of labour and respect for people who are engaged in work. This might lead the parents to a gradual acceptance of this system of education.

e) Through media and public discussion, it should be explained that work experience does not and will not, dilute academic components.

7. A 'Council of Education' should be established to co-ordinate the activities among the work-oriented schools.

APPLIED RESEARCH AND SUMMING UP OF EXPERIENCES

Significance.

If educational decision-making is based on conclusions reached through survey and/or experimental research, there are far greater chances of success for the programmes so conceived and launched. Otherwise, judgemental decisions are unlikely to be based on a valid assessment of the position or correct assumptions.

Research activity usually involves a long process. Research findings planned today may only be available after months or years. As such, the administrators or politicians, in their genuine anxiety to be able to accomplish things quickly, become impatient and, by implication, attach inadequate importance to research. The problem of a 'time-lag' becomes an excuse for the decision-makers to downplay research. The slow pace of a large number of research workers often inhibits the promotion of research.

Applied Research

Before undertaking any major programme of research in relation to work-oriented education, the question of what the proposed study intends to achieve must first be answered. Research should not be merely pedantic or purely theoretical. As far as possible effective use should be made of the findings. Therefore, applicative aspects of research must be emphasized - as against the usual traditions of polemic discourses and theorization.

The purpose of sponsoring or conducting research should not be to add to the number of volumes of studies stacked on the shelves of libraries and then to be forgotten to collect dust. The problem of 'publish or perish', notable in some Western countries, may imperceptibly permeate research workers in the developing countries. Not every document alleged to be a research report can and should prima facie be accepted as 'research'. In order to separate the grain from the chaff, there appears to be a need to introduce some measures of 'quality control'. To adopt a pragmatic approach in relation to education and the world of work necessitates giving importance to only those research studies that actually have close linkages with an improvement of prevailing situations. An application of research findings is possible only if the topics selected are closely related to a solution of the problems actually faced.

Utility of Research

1. Significance and relevance of the planned programmes to the national goals, societal needs and requirements of students;
2. Feasibility and propriety of the implementation processes and procedures;
3. Public acceptance or rejection of the programme;
4. Assessment of the level of success in terms of positive or negative outcomes; and
5. Guidelines for future restructuring of programmes, taking into account the past performance.

Though difficult to adopt, the 'quasi-experimental design' approach to a solution of problems in work-oriented education appears to be among the best. By following this

technique, not only is the much needed flexibility for promotion of innovation possible, but also the main theme of improving the products and boosting production through gradually improved skills and gradually revised methods is ensured. Though not designated as such, this approach already appears to be popular in China and Viet Nam as well as in some other countries of the Region. The 'action-research' technique is evident in teacher training programmes particularly in China where teachers simultaneously learn the teaching techniques and do actual work to produce things. They deal with tangibles rather than theoretical discourses on methods of teaching.

Proper Choice of Research

While survey research is needed for fact-finding about existing situations with regard to available facilities and other numerical data, its utility in relation to quality improvement remains limited. Mere collection of data and statistics need not be supported by Unesco. Duplicative or replicative studies should also not be sponsored unless their use is obvious.

Precision in identification of specific but small size problems is the hallmark of a scientific approach. Yet, research into work-oriented education need not remain so segmental that it becomes a negligible fraction of the whole. The scope of studies should be neither too wide to be unmanageable, nor too narrow to be of any real use.

Information Retrieval

Because the 'Information Retrieval System' of the countries of the Region is not up-to-date, research findings are not disseminated and consequently not properly made use of. Unesco has recently initiated an analysis of different research studies with a view to identifying how the findings of studies conducted in, say, the Philippines or the Republic of Korea, can actually be made use of. Unesco can and should play an important role in the dissemination of results of relevant studies for the mutual benefit of the countries of the Region.

Judged on the criteria of significance with regard to work orientation, the following, among other topics, may be considered by the national governments:

1. Curriculum and instructional materials.

   a) relative weight to be assigned to work-oriented streams of curricula or, if the general and vocational education programmes are integrated and imbedded, the relative emphasis on each in different disciplines of knowledge; integration of arts and work experiences, through school subjects;

   b) selection of curriculum content and development of textbooks;

   c) special methods of teaching work-oriented subjects;

   d) allocation of time to work-oriented programmes and scheduling - in case the work programmes are offered as a separate stream of the curriculum;

   e) selection and use of instructional materials with particular reference to skill development subjects;

   f) linkage of work programmes of secondary schools with those of higher education institutions;

   g) variety of instructional programmes for the talented and the slow learner; and

   h) individual and group exposure to work experiences.

2. Availability and use of manpower and material resources.

   a) properly trained teachers and other types of manpower;

   b) school plant facilities - laboratories, equipment, teaching aids, machine tools, etc.;

   c) financial inputs commensurate with the requirements for proper implementation of curricula;

d) natural resources available in different geographical settings;

e) linkage of resources allocated with positive outcomes; and

f) provision of hobby centre facilities.

3. Impact of work-oriented programmes on the national economy and local industry:

a) linkage of school programmes with popular industry in local environment;

b) utility of the programmes with respect to the national economy; and

c) effect of income generation activities on educational aspects of work experience.

An Overview of Research Completed or Underway and Summing Up of Experiences

From the available data it appears that research into work-oriented programmes has been receiving a different priority in different countries. Some countries have not so far launched any major research projects in relation to work-oriented education, while others have done quite a lot in this area.

China. In China, as in other countries, a research study has already been completed on 'How education can help the students to develop morally, intellectually and physically'. In 1958 the Chinese Education Ministry decided that work-oriented courses should be included in the curricula of all secondary schools. By 1965, nearly 4,000 schools had implemented this directive. After the Cultural Revolution of 1978, a national education conference was organized. Accepting their recommendations the Ministry of Education re-emphasized work-orientation and made it an important component of Chinese education. In order to study the results of work-education, personnel from the Ministry and the Central Institute of Educational Research visited different schools, factories and farms. After talking to students, teachers and other concerned, the experiences were summed up.

In 1981, another national conference was held in which educational bureau of each province presented reports. Selected schools offered their experiences. With material

collected from the grass-roots level and exchange activities it was concluded that, through work-education, the students developed correct work habits and work ethics. They acquired a better understanding of academic subjects. Their health also improved through work experiences. After graduation, they found employment more easily. The research concluded, through summing up of experiences, that the results were very positive. This approach provides a good example of a summing up of experiences.

Another study underway in China relates to the contribution of work-education to the process of modernization and economic development. High priority is being given to this research. Another research study in progress in China pertains to the combination of work-education with academic education. As pointed out earlier, these research studies are in addition to studies being done on the pattern of 'quasi-experimental design'.

Indonesia. In Indonesia two major research projects have been undertaken. The study on National Assessment of Educational System (1969-1973) has already been completed. As a result, the curriculum of the 1968 general education programme was revised for introduction with effect from 1976. A vocational education component was offered on the basis of recommendations of the study. A research study currently underway deals with the 'Development of a school pilot project'. The project aims at combining prevocational and vocational subjects in general education - prevocational for those intending to continue their studies in the vocational stream later on. This way if the students cannot go on to the University, they could earn their living through some useful activities.

Japan. In Japan, studies have been completed, providing details of statistical data relating to the number of prefectural schools offering vocational subjects at the upper secondary level (students taking vocational courses). Since January 1981, the Vocational Education Sub-committee of the Science Education and Vocational Education Committee - which is an advisory organ of the Ministry of Education, has undertaken to study the feasibility of an expansion of vocational subjects in general courses in the upper secondary schools. Japan intends to carry this research forward.

Pakistan. Besides a collection of numerical data, Pakistan has conducted case studies to evaluate the agro-technical education programme. Unesco and the British Council assisted in the preparation of reports on the basis of data collected.

Philippines. In the Philippines, major emphasis has been laid on conducting evaluation studies. An evaluation of the Continuous Progression Scheme (National) was completed in addition to that of some electives in the U.P. Integrated School. The Elementary School Curriculum (National) and the U.P. Integrated School Entrance Examination were also evaluated. At present the evaluation of the following programmes is underway:

1. Work-oriented curriculum (National);
2. Competency based approach to curriculum and instruction;
3. Secondary School Curriculum with particular reference to work-orientation.
4. U.P. Integrated School Curriculum:
   (a) Elective programme,
   (b) Required subjects, and
   (c) Work-oriented programmes.

Determined to improve the programme on the basis of comprehensive assessment/evaluation of their offerings, the Philippines is interested in collaborating with Unesco in further work on their studies.

Republic of Korea. In the Republic of Korea, an effort was made to consolidate research studies in relation to work-oriented programmes. Approximately 150 studies were conducted. Unesco/ACEID has received a list of these studies.

Sri Lanka. In Sri Lanka, evaluation of curriculum and instructional programmes forms a regular activity of the Curriculum Development Centre. The Centre's interest in scientific assessment of the success or failure of work-oriented programmes is evident by the high priority given to this aspect in its future research programmes.

Viet Nam. In the Socialist Republic of Viet Nam, the following major studies have already been completed or are underway:

1. New curricula for technical and vocational education (from Grade I to Grade XII);
2. Technical/vocational activities in the lower and upper secondary schools;
3. Experience of the Tran-Hung-Dao Study-and-Work Secondary School;
4. Formation of technical orientation in pupils;
5. Quang Trung School experience in building material and technical basis for productive labour;
6. Organization of production groups in the villages for senior school pupils;
7. Development of general secondary 'study-cum-work' schools;
8. Initial experience in building the general secondary 'study-cum-work' school in agricultural areas on farm production bases;
9. Vocational orientation for general school pupils;
10. Personality and vocational orientation; and
11. Responsibility of general education branch for vocational orientation.

One experiment in the Socialist Republic of Viet Nam demonstrating the relationship between a selection of individual careers in response to the needs of the society and the formation of a new personality is described below.

The work-oriented programme offering 36 periods of vocational type subjects in grades X - XII was tried out in one upper secondary general school and one lower secondary general school. The technical/vocational subjects offered in various grades were:

a) Grade X: mechanical workshop practice (60 periods per year);

b) Grade XI: electrical workshop practice (60 periods per year);

c) Grade XII:electronics, including radio technique (10 periods per year).

The teachers conducted the thoery classes, helping the pupils to acquire a basic knowledge about these occupations. Through their involvement in practical activities the students reached the necessary conclusions themselves. Each pupil was involved in observation, studying theoretical principles, comprehending the information in various vocational subjects. On that basis, students acquired some information on various occupations and developed a desire to undertake those occupations. In this way the student's familiarized themselves with various aspects of each career. Each student was thus able to make the choice of a career.

By taking the vocational subjects included in the curriculum, each pupil was given a chance to try out his abilities in each subject. The more such trials are made, the better the chances for the selection of a suitable career. This made it possible for each pupil to develop and confirm his interests in the chosen career. The main aim was not to develop and master skills, but to initiate the formation of initial skills in some areas through vocational experiences.

The following results were achieved:

1. Most of the pupils agreed to stay and serve the rural community after completion of the vocational courses, if they did not qualify for further studies in higher schools;
2. Many of the school graduates became skilled workers; and
3. This structure of vocational subjects influenced the formation of new personality patterns of Vietnamese pupils.

Recommendations about Research to be Undertaken in the Future

In view of the over-riding consideration of meeting the requirements of each country, the Panel decided to request each participant to indicate topics, which in his/her personal view, were of greatest significance for

the respective countries and which, if possible, might be partly sponsored by Unesco or other International Organizations. The following topics were identified as high priority areas for undertaking research:

1. Career guidance in Bangladesh.
2. Integration of work experiences in general secondary education programmes in Bangladesh.
3. Determinants of positive attitudes of junior and high school students towards different work-oriented programmes in China.
4. Experimental study for determining the feasibility of offering vocational courses at the general high schools of China.
5. Study of relative effectiveness of investment in teachers, physical facilities, curriculum and instructional materials in Indonesia.
6. In-depth study of the school pilot project in Indonesia.
7. National-level assessment of work-oriented aspects of the Indonesian educational system.
8. Effectiveness of the new general school curriculum in relation to the ability of students to work for themselves and for the Indonesian society.
9. Involvement of local artisans, technicians, workers and parents in work-oriented educational programmes in India.
10. Should work experiences be common for boys and girls in India or should they be different?
11. Study of the vocational subjects and methods of instruction at the junior and senior high schools in the Republic of Korea.
12. Research and development of curriculum for the training of teachers for work-oriented programmes of the Advanced Technical Teachers Training College in Pakistan.
13. Development of instructional and other resource material for students enrolled in work-oriented programmes in Pakistan.

14. Study of students' performance in the National Entrance Examination: those who went through the Work Programme in the Philippines and those who did not.

15. Evaluation of the new national elementary school curriculum in Philippines.

16. Evaluation of the impact of non-formal education on industry and national economy in Philippines.

17. Evaluation of Ability Grouping in CA (English) subjects - (U.P. Integrated Schools of Philippines).

18. Evaluation of work-oriented programmes in Sri Lanka.

19. Pilot study of career guidance: in-service training (development, try-out and finalization) of secondary school counsellors of Thailand.

20. Standardization of vocational aptitude tests for secondary school students of Thailand.

21. Study of effectiveness of teachers guidebooks on work-education in Thailand.

22. Development of the 'part-learn and part-work' programmes in Upper Secondary General Education Schools in Viet Nam.

23. The rational employment of school leavers in Viet Nam.

ASSESSMENT OF STUDENTS' PERFORMANCE

An assessment of students' performance is always an integral part of any school curriculum programme. The following points must be considered in relation to the assessment of students' performance.

1. A special instrument for the assessment of students in work or vocational subjects must be used to accommodate aspects which are not found in academic subjects.

2. If standardized evaluation instruments are available, their norms must be well-studied and adjusted to suit the norms of the country where they will be used.

3. All persons involved directly in the programme must be given the opportunity to evaluate the performance of the learner.

4. Criteria for evaluation must be well formulated.

5. Formative evaluation must be done periodically to ensure the continuity and regularity of performance of the learner.

Objectives

Results of evaluation are used for the following purposes:

1. For improving the instructional materials as well as the learning process;

2. For making a decision whether or not a student can be promoted to the higher level; and

3. For grading each student.

Formative evaluation should be carried out continually, so as to determine the progress of the students. It should be conducted at least four times a year.

After a unit of skill studies has been covered, students sit for evaluation. Summative evaluation is given after a period of studying or training is finished. If the student passes the test he may obtain a certificate which enables him to advance to the next level or, to get a job.

Implementation

1. For the assessment of vocational subjects or skills education in general education, different criteria must be considered from the ones used in the assessment of academic subjects, because of the different characteristics of each subject. For example, skills education includes also performance or demonstration in preparing a product as part of the training. The employment of practical methods in skills education has called for observation and performance tests, beside written tests as a means of evaluation. Thus, the use of direct evaluation of the process and the product is advisable.

2. Central, local and institutional agencies are involved in the development, implementation, and evaluation of academic activities, as well as vocational

subjects. In the case of vocational courses, outside agencies must be involved. This involvement will bridge the gap between the skills education or vocational education in the general education and the world of work.

Some special instruments will be needed in evaluating academic subjects where working skills aspects are embedded.

The following are suggested as topics to be included in the assessment of students' performance:

Attitudes, work habits and work ethics:

- willingness to work
- pleasant disposition
- ability to work with others
- responsibility
- neatness and orderliness
- respect for authority
- regularity of attendance
- punctuality
- honesty
- thrift
- inventiveness.

Skills:

a) General work performance

- motivates to work
- works consistently
- monitors own performance
- organizes own work area
- cares for tools, equipment, etc.
- works unsupervised
- makes decisions independently.

b) Work quality

- works accurately
- discovers own errors
- overcomes own errors
- expresses interest in product and/or completed job.

c) Work quantity

- achieves speeds comparable with workmates
- expresses interest in own productivity and output

- seeks alternatives when job completed
- seeks means to increase output.

d) Work process

- draws appropriate plans
- implements accurately, effectively and efficiently
- copes with problems faced during the process
- follows safety regulations
- evaluates for better future plans

Achievements

- knows the name of the tools, spare-parts, and their proper use, can tell the correct procedures
- achieves needed accuracy and precision
- works safely, observing standards.

After all these instruments are accomplished and weights are assigned for the different sub-topics, the sum total of the 'scores' must be translated to a 100 per cent basis. Then the final rating of the student can be determined.

Suggested weightings to be assigned to the different criteria should be made before the use of the instruments. Likewise, weights assigned to the different "rater" must be well-defined.

Suggestions and Recommendations:

1. Set a standard for the students to attain;
2. The students should be involved in setting this standard; and
3. Extra credit should be given to students for additional creative work.

Advantages of the proposed methods of grading:

1. Students will realize the importance of what they are doing;
2. Mutual respect and understanding between teacher and students will be promoted;
3. Co-operation will be promoted;
4. Grades will be more meaningful to the students; and
5. Grading will be made easier for the teacher.

Suggested Assessment Format

Attitudes, work habits and work ethics/skills/achievement/general

Performance

Rating:

always	- 5	excellent	- 5
very often	- 4	very good	- 4
sometimes	- 3	good	- 3
occasionally	- 2	fair	- 2
never	- 1	poor	- 1

	1	2	3	4	5
Love of work					
Willingness to work					
Pleasant disposition					
Ability to work with others					
Co-operation					
Responsibility, neatness & orderliness					
Regularity of attendance					
Honesty					
Thrift					

Highest Total, = 50

PROVISION OF TEACHERS: SPECIAL TEACHERS AND/OR SUBJECT TEACHERS THEMSELVES (TEACHER'S GUIDEBOOKS, MANUAL OF ACTIVITIES)

Provision of Teachers

The introduction of vocational subjects is a new area of study in general education at the secondary level in many Member States and the provision of suitably prepared teachers to teach vocational education subjects is being experienced as a major constraint in the proper imple-

mentation of vocational education programmes. The experience and background knowledge needed for teaching vocational subjects are completely absent or are insufficient in a majority of the teachers in the school systems of the various countries/and immediate steps should be taken to overcome this.

Competencies. The necessary competencies have to be carefully studied, analyzed and arranged in a priority order, developed without many facilities and resources and built into a programme of training, that must be designed and planned for immediate implementation.

Curriculum. In designing the training programmes, careful note has to be taken of the target teacher population, for which the programme is meant with respect to educational background, the prior level of training of the members of the group, the interest shown for vocational subjects, facilities and other materials and human resources, that are available to the teachers in their respective schools. Curriculum designers will need to undertake a quick survey of the available teachers for each field of training in order to gather relevant information, (some of which are listed above), before they embark on a training programme, which would be geared to meet the training needs of the different target groups.

Nature of training. On the basis of the survey, it would be possible to identify groups of teachers who need short term training. Those that will fall into this category, will be the ones, who have some competencies that need strengthening, and in addition, such teachers need to acquire new competencies, to enable them to teach the subjects in a meaningful manner. In order not to disturb the schools by drawing out such teachers too often, the short term programmes could be run after school hours or during weekends. Perhaps such a programme could be completed in a period of 3-4 months. Human resources to run these training programmes could be drawn from the community* as well as from industry and business world. It would be advisable, when depending on outside human

* Any member of the community, who has an expert knowledge through long experience of the particular skills, e.g. the mason, the carpenter, the technician, the health educator or the farmer.

resources, to select those resource personnel who are acceptable to the group.

An intensive, phased, on-the-job training programme should be prepared for teachers who do not have any of the required competencies in the field of vocational education. The programme should be directed to equip them with selected competencies, which will be required in the majority of the schools. The duration of this on-the-job training will depend on the speed with which they master the required competencies. This training could take the form of assignment-cum-contact courses.

The training centres could be some well equipped schools or teacher training institutes, so that facilities and resources of these institutions could be utilized for both the proposed training programmes.

> Note: Since vocationalization of general education is becoming increasingly a component of the national curriculum in most Member States, the number of teachers specialized in vocational subjects will not be sufficient to implement the curriculum reform. Therefore it will be necessary for teachers of academic subjects such as science, mathematics, social studies, and agriculture to receive adequate training.

Pre-service programmes. While running short-term and long-term programmes to meet the immediate need of teachers for work-oriented subjects, pre-service programmes should be stepped up. In so doing the existing curriculum should be revised with a view to accommodate all these new areas of study. This should be treated as an urgent need. Unless this is done, the pre-service programmes will not be able to generate the stream of teachers the school systems so badly need. Pre-service programmes and the 'crash' programme should be run in parallel.

Funding requirements. It should be the responsibility of the educational authorities of the Member States, to encourage the respective governments to provide sufficient funds to operate these programmes. Some Member States drew the attention of this meeting to the difficulties they faced regarding a lack of funds. In conformity with national policies, it will be imperative

to request the private schools to adopt similar training programmes to equip their teachers also with the basic skills necessary to teach the practical and work oriented subjects. Private schools, too, will have to provide for this kind of training in their annual budget.

Teachers' guide

A teachers' guide is a tool in the hands of the teacher to direct his teaching to attain the objectives in a given course of studies. As such it should not only be carefully prepared, but also must offer a preferred sequence. In addition a well prepared teachers' guide should comprise the following aspects in particular:

1. An expanded syllabus, with objectives for each topic clearly stated;
2. Topics arranged in a preferred sequence indicating the time allocation (periods);
3. The activities involved in each topic, spelling out how various activities should be carried out:
   a) group activities,
   b) individual activities,
   c) teacher demonstration with student participation;
4. How to capitalize on the available facilities, equipment and tools with suggestions for improvisation, where applicable;
5. Content enrichment sequences to materials available on the particular area of study/ activity;
6. Resource personnel or resources to be tapped;
7. Methods of evaluation;
8. Alternative approaches,

Note: A common syllabus could be taught in any Member State which has regional/ district difference in terms of geography, resources or material, provided that teachers' guides are prepared to meet these regional differences. Reference may be

made to the Indian example, where in the state of Maharashtra, which is divided into five sectors on geographical and other considerations, the same textbook is used, but with five different teachers' guides; and

9. Indication of the preparatory work on the part of teachers - planning and time budgeting.

Manual of Activities

A manual of activities may be summed up as a document/handbook consisting of worksheets, for each activity, specifically prepared for student use. These worksheets should give direction to the teacher and his students as to how each activity should be organized and how it should be conducted.

It would include the following topics:

a) the listing of items of equipment or tools required;

b) the operational details;

c) use of equipment/tools for optional utilization;

d) the safety precautions to be observed;

e) substitute equipment/tools that could be used in the absence of traditional or standard equipment/tools;

f) Measurements for recordings to be made and how they should be recorded and tabulated;

g) precautions to be taken for accuracy of results/or finish of the product;

h) instruction for efficient use of equipment/ tools;

i) care and safety of equipment; and

j) discussion of results/products, regarding:

  i) accuracy/quality,
  ii) type of equipment used or tools used,
  iii) handling of equipment/tools,
  iv) instructions not followed.

The above list is not exhaustive, for many more items of instructions could be added. Another important aspect to be followed is to arrange the activities in such a way, that the activities that follow will provide practice for skills acquired earlier and will further strengthen and develop them. The preparation of a manual of activities should take high priority.

Note: A teachers' guide is primarily meant for the use of teachers, and it would be not available to pupils. Whereas a manual of activities, while helping the teachers, is primarily meant for the students.

CHAPTER FOUR

SUGGESTIONS ON FUTURE ACTIVITIES

The Panel reviewed the outcomes of the Meeting and considered the subsequent actions to ensure the effective dissemination of experiences, exchange of personnel and co-operative actions to promote self-reliance and national capacities for designing further innovations, and implementing and evaluating existing innovative programmes and projects in the participating countries.

The countries provided specific information on research findings and one country offered to translate the results of its research efforts specifically for the Unesco Regional Office for dissemination in suitable forms in the region. Several titles of new research studies were proposed along with brief write-ups on each. These will also be brought to the notice of countries participating in APEID.

The Panel observed that it was necessary to sum up experiences of inter-country study visits and suggested a collection of information on the topics of selected case studies for consideration by Unesco and the participating countries so that the prospective activity in the theme under consideration could be effectively, and economically implemented. The greatest concern of the Panel was to ensure that the outcomes of such visits could be immediately fed into the national programmes. Several suggestions were developed and are included in this chapter. Finally the Panel, having earlier emphasized the need for research and evaluation, suggested that special priority should be given under national (country) and regional programmes, particularly in the context of APEID, to promoting experimental and evaluative research. This discussion was followed by the framing of suggestions for establishing the feasibility of a study, and the method for its planning and presentation.

Inter-Country Study Visits

One of the stated objectives of APEID is to promote exchanges of information and shareable experience. This is done, both bilaterally and multilaterally, in various

ways. One of the methods adopted is to organize inter-country study visits. This Planning Panel would like to suggest the following guidelines for inter-country visits on the subject of educational and vocational experiences in general education.

Directory of projects. Firstly, Unesco could prepare a directory of projects/experiences of all countries in the region. The directory should contain the following information:

a) Projects (experimental/extended experimental/ intensive application)

   (i) completed,
   (ii) in progress,
   (iii) discontinued.

b) Experiences

   (i) a digest of research work,
   (ii) summing up of the status of the project.

Besides geographical and historical details, the directory could give a brief account of the objectives, hypotheses, modalities, and outcomes of the projects listed.

As far as possible, information should be supplied according to the following format:

a) background, including research phase;

b) objectives and scope;

c) implementation - strategy;

d) inputs;

e) key innovative features:
   - special features,
   - problems and constraints;

f) evaluation, of processes/projects;

g) source of information; and

h) contact - organization/person.

Directory of experts. The Panel considered that it would be useful also for Unesco to prepare a directory of experts. The term may be liberally defined to include policy-planners/project directors/evaluators/researchers/

trainers. It was recognized that much of this information about such people, would be available during the preparation of the directory on projects. It was felt that Member States might need experts for:

a) help in formulation of policy/plan/programme;

b) help in organization and implementation of projects;

c) help in training; and

d) help in assessing the outcomes and impact.

Given the above range of requirements, it was felt that experts would not necessarily have to be drawn from the projects listed; only, they should have known expertise in the subject of study and obviously the language competencies should be compatible.

Institutional information. The Panel also recommended the compilation of information relating to selected research and development institutions, resource centres, professional support organizations, and leading (model) schools.

Subjects of study. It was suggested that proposals for inter-country visits should be specific about the subject of study. Obviously, they should be related to the plans/programmes of the country in the near future. In addition, it is expected that they should conform to the concerns/priorities of the Planning Panel. Any variations would need to be properly substantiated. Only within such a matrix can any meaningful networking be developed so that Member States will be able to

a) derive the maximum benefit from this panel meeting; and

b) prepare the ground for a review/monitoring meeting later.

It was agreed that there should be a review, in particular, of all inter-country visits in the next Planning Panel Meeting.

Choice of places/projects. The choice would rest with the country and be based on the information contained in the directory of projects. (A request for visits may or may not be accompanied by a request for experts).

a) Member States have access to exchange of visits under the Cultural Exchange Programmes. If bilateral visits are covered under such programmes, the limited resources available under APEID can be optimally utilized for multilateral visits. Nevertheless, care will need to be taken to eliminate duplication of visits under different programmes.

b) Proposals should contain a clear statement of the context, needs, and the focus of attention e.g. planning, curriculum development or training.

Number of countries visited. As a general principle not more than 2 or 3 countries should be covered in one visit. The present norm of 3 or 4 countries should, it is felt, be scaled down. As far as possible, the countries should be in close proximity; otherwise, considerable time and money will be spent in travel. Since this exercise will call for a grouping of countries with reference to a number of factors viz. stated desire to visit, relevance from a subject point of view, readiness of the host-country and the contiguity of areas, the final choice of grouping should be left to Unesco.

Implied in this recommendation is the assumption that requests from more than one country will be considered for possible groupings. This does not, however, rule out the possibility of visits to other countries by a team from only one country.

Intensive studies. It will be preferable to limit the number of projects for study so that intensive studies of selected subjects are possible. If more than two countries are to be visited, there should be only one (common) subject. Likewise, if more than one country is participating in the visits, there should again be only one (common) subject.

Duration. Ordinarily, a study visit should not last for more than 25 days, including travel time. This would allow about 7 to 10 days in a country which should serve the purpose, provided adequate preparatory work is undertaken. The present norm of 4-7 days should, it is felt, be increased. At any rate, senior functionaries/ key personnel cannot afford to be away on tour for longer periods.

Nominees. Member States should continue to have full discretion in choosing their nominees. But, States should be requested to exercise that discretion judiciously. In the past, there have been cases of nominations of personnel who have ceased to have connection with or who were about to leave the area of work connected with the subject of study. Nominees/representatives should as far as possible be senior/key personnel who have (and, will continue to have) responsibility for policy formulation, planning, implementation, research/evaluation. It would be a desirable practice to associate the co-ordinator of the National Study Group in choosing the nominee/representative. The nominee/representative need not necessarily be the same person who attended the Planning Panel Meeting. It should be possible for a country to send more than one person.

Amplification of Country Reports and Preparation of a Directory

The panelists agreed to send additional materials (or revised country reports containing some additional materials) and to supply information for inclusion in the proposed Directory as follows:

a) Supplementary data and information to fill the gaps in the country reports:

The panelists agreed to check the information contained in their country reports, to compare it with what was requested by Unesco/ACEID in the letter addressed to the participants, and to supply additional information not included in their country reports.

b) Additional information to be provided in the light of the review and other outcomes of the Meeting:

The information received from the countries was, in general, adequate. However, there were some items on which enough information was not available. The participants agreed to send additional information on such matters as policies, programmes, curriculum, instructional materials, and teacher training so that this can be suitably compiled and disseminated.

c) Notes on selected topics:

The meeting selected eight topics of major concern to Member States and prepared detailed notes on them. On some of these topics (or some other topics which may be of special interest to a particular country) the panelists agreed to send notes on their countries' experiences and needs. It was agreed that, in selecting the topics, the countries would take into account the experiences which were specially sought by other countries during the Meeting, or the topics on which they would like to know more about the experiences of other countries.

d) Co-operation in the preparation of a Directory: A directory of institutions, projects and resource persons is to be produced in the light of the recommendation of the Meeting. Panel members were requested to supply information for inclusion in the directory according to the sub-headings suggested in the note prepared by the Meeting.

Case Studies of National Experiences in Introducing Vocational Courses and Work Experience in General Secondary Education

In several countries, important projects have been launched. However, proper documentation on these important ventures is not available for dissemination to other Member States. In view of the desirability of collecting useful experiences and of making these available to other countries for the purpose of promoting innovation for development, it was considered to undertake case studies of selected projects. A number of projects, such as open schools, linkage of factories/farms and schools, were identified by participants during the Meeting.

The Panel suggested the collection of the following information about topics of the proposed case studies:

a) why the proposed case study needs to be undertaken - its importance with reference to exploiting opportunities and solution of problems;

b) purposes, scope and limitations;

c) phases and time-framing;

d) who will do it, and according to what procedures;

e) how the results will be reported and interpreted; and

f) utilization of outcomes.

It was agreed that for the studies which are undertaken, it would be desirable to adopt a format for the submission of final reports. The following format was suggested, with the observation that it should be used flexibly depending on the nature of the study topic, and the preference of the qualified group of researchers undertaking the study:

1. Background.
2. Objectives.
   a) problems to be solved;
   b) opportunities to be exploited.
3. Significance of the study.
4. Scope of study and limitations.
5. Phasing and time frame.
6. Methods of case studying:
   a) how to collect data/information;
   b) time schedule/visitation programme;
   c) distribution of responsibilities;
   d) how to analyse information collected.
7. Collation of information/reporting of results and interpretation of facts/observation, summaries of findings.
8. Conclusion.

LIST OF ANNEXES

Annex 1 - Address by Mr. Raja Roy Singh, Assistant Director-General/ROEAP at the opening session

Annex 2 - Agenda of the Meeting

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ANNEX 1

Address by Mr. Raja Roy Singh, Assistant Director-General, Unesco Regional Office for Education in Asia and the Pacific, at the opening session.

Distinguished Participants and Observers,

Ladies and Gentlemen,

It is a great pleasure and honour for me to be here with you this morning at the opening of the First APEID Regional Planning Panel Meeting on Work and Vocational Experiences in General Education.

On behalf of the Unesco Regional Office for Education in Asia and the Pacific and on my own behalf, I wish to extend a warm welcome to all distinguished participants.

I am happy to note that this Planning Panel Meeting will discuss some important issues relating to the linking of education to the world of work.

The problem of providing strong linkages between education and work or learning and work has been one of the major concerns of the member countries for quite some time. In the general education programmes in most of the countries, work education has been included in the curriculum in the form of skills development and/or as a general orientation to the world of work. Various approaches have been adopted in the countries in this regard: skills training in particular subjects and elective specialized courses in the general education or introduction to work through participation in community development projects, and introducing special programmes based on the principle 'Earn while learning', etc.

The present trends in most of the Asian countries are towards:

a) Providing work education as an essential part of general education to orient young people to the world of work. This includes promoting the development of positive attitudes towards work, and utilizing work-related experiences for development of manipulative and associated intellectual skills as a base for socio-economic development; and

b) Development of skills and knowledge related to specific occupations by making the education more relevant to the changing structure of modern science and technology, with a view to help individuals to adjust successfully to continually changing patterns of employment and economic development in each country.

These trends in the educational programmes of the countries in the region emphasize the importance of the interaction between education and socially useful work, and between education and the world of work, as well as the relationship between education, training and employment.

I would like to underline the great importance, both for the individual and for the society, of the establishment of effective interaction between education and working life with a view to meeting the demands for relevance in education and continuing adaptation of educational structures, programmes and content to changing economic, cultural and social conditions of work. It is important to prepare all children and young persons for their future work and life and personal satisfaction. This calls for examining and restructuring of various programmes of life long learning.

I am sure that the participants of this Planning Panel will take into consideration the fact that the practical application of theoretical knowledge, and the productive work performed by learners either within or outside the education system, are an important factor in modern education, that they promote the all-round development of the personality of each individual. The exposure to the world of work contributes to the individual's and the group's understanding of social, moral, aesthetic and economic values.

We live in an era with a favourable tendency for a gradual disappearance of the division between physical and intellectual work.

Looking through the discussion papers and other documents submitted by you for this meeting, one could say that the forms that the interaction between education and productive work vary from one country to another, but it is notable that almost all countries are considering the importance of introducing training in the areas of

new technologies in a rapidly changing world of work while further developing knowledge in the traditional sectors, and are ensuring or trying to ensure, that life-long education enables young persons and adults to acquire, to update and upgrade their skills and knowledge in line with scientific, technological, economic, cultural and social advances.

The discussions, exchange of experiences, and formulation of suggestions for future actions at national and international level through fruitful collaboration - during this Planning Panel Meeting will, no oubt, reflect the important consideration that one of the most pressing needs of the present-day societies, is to produce skilled manpower suited to the employment situation and development requirements, arising of national needs and programmes for economic and technical development.

As we are all aware, however, there is a severe lack of resources that are a necessary pre-requisite for linking the school to productive work and working life, and that many developing countries are concerned about the lack of resources for acquiring even the simplest tools and equipment and for creating plant for practical activities, or for ensuring a dependable supply of materials necessary for carrying out even the most basic forms of productive work.

Therefore, upon identifying the major problems in our countries, based on some innovative successful experiences and approaches, we will attempt to formulate concrete and realistic suggestions for rectifying those identified problems.

Further studies of various national innovative experiences will emerge after this meeting. We may attempt to formulate their scope and design.

The present Meeting is only a beginning, a first step in a long way to future co-operation and I am sure that the professional dialogue which will start now, will continue among all of you, the pioneers in this important endeavour.

I wish you all success in your deliberations.

ANNEX 2

AGENDA OF THE MEETING

1. Opening of the Meeting.
2. Election of officers.
3. Consideration of the provisional Schedule of Work and introduction of documents.
4. Presentation and consideration of issues and problems faced by the countries, shareable experiences, future plans and relevant findings of research and evaluative studies.
5. In-depth study of selected aspects, such as; inter-departmental co-operation, curriculum, teacher training, development of work ethics, transition between school and world of work, etc.
6. Concrete suggestions on development of action programmes at national and regional levels in relation to national needs and priorities.
7. Closing of the Meeting.

ANNEX 3

List of Participants and Officers of the Planning Panel and Composition of Working Groups

Bangladesh	Mrs. Khodeja Azam Assistant Director (Planning and Development) Secondary and Higher Education Education Directorate 16 Abdul Gani Road Dacca
People's Republic of China	Mrs. Li Bingjie Head, Office of School Administration Research Central Institute of Educational Research No. 10, Beihuanxi Road Beijing
	Mrs. Zhang Ye Bureau of Foreign Affairs China Academy of Social Sciences Beijing
Indonesia	Mr. Jeremias Marpaung Head, Sub Directorate of Secondary General Education Innovation Directorate General of Primary and Secondary Education Jalan Hanglekir II/16 Jakarta
India	Mr. S. Sathyam Joint Secretary Ministry of Education and Culture (Department of Education) Government of India New Delhi

Japan	Mr. Michitoshi Urabe Deputy Director Vocational Education Division Elementary and Secondary Education Bureau Ministry of Education, Science and Culture 2-2 Kasumigaseki-Sanchome Chiyoda-ku, Tokyo, 100 Japan
Pakistan	Dr. M.A. Bhatti Joint Educational Adviser Ministry of Education National Bureau of Curricula and Textbooks Sector H-9 Islamabad
Philippines	Prof. Socorro L. Villalobos Principal University of the Philippines Integrated School University of the Philippines Manila
Republic of Korea	Mr. Sang Hyuk Lee Senior Researcher Office of Supervision and Curriculum Development Ministry of Education Seoul
Sri Lanka	Mr. M.M. Premaratene Director of Education (Secondary Education) Curriculum Development Centre 255, Bauddhaloka Mawatha Colombo
Socialist Republic of Viet Nam	Dr. Tran Thuc Trinh Head Department of Educational Research Institute of the Educational Science Ministry of Education Tran Hung Dao Street, 101 Hanoi

Thailand	Mr. Swasdi Suwanaagsorn Director Curriculum Development Centre Department of Curriculum and Instruction Development Ministry of Education 928 Sukhumvit Road Bangkok
Observer	Mr. Cameron Clark FAO Regional Office Bangkok
Unesco ROEAP	Mr. Raja Roy Singh, ADG/ROEAP
	Mr. A. Latif
	Mr. A. Dyankov
	Mr. H.K. Paik
	Mr. Tun Lwin
	Mr. A. Qureshi

Officers of the Meeting

Chairman	Mr. Swasdi Suwanaagsorn (Thailand)
Vice-Chairmen	Mr. Michitoshi Urabe (Japan) Dr. M.A. Bhatti (Pakistan)
Rapporteur	Mr. M.M. Premaratene (Sri Lanka)
Members of the drafting committee	Mr. S. Sathyam (India) Prof. Socorro Villalobos (Philippines)

Secretariat of the Meeting

1.	Mr. A. Latif	Chief of ACEID
2.	Mr. A. Dyankov	Specialist in Instructional Materials (ACEID)
3.	Mr. H.K. Paik	Specialist in New Methods in Teacher Education (ACEID)
4.	Mr. A. Qureshi	Specialist in Technical and Vocational Education

Composition of the working groups

Group I:

Mrs. Khodeja Azam (Bangladesh)

Mr. S. Sathyam (India)

Mr. Michitoshi Urabe (Japan)

Mr. M.M. Premaratene (Sri Lanka)

Dr. Tran Thuc Trinh (Viet Nam)

Mr. Swasdi Suwanaagsorn (Thailand)

Mr. A. Dyankov (Secretary)

Topics discussed:

- Work ethics and work habits (Convener - Mr. M. Urabe)
- Public acceptance - how to promote (Convener - Mrs. K. Azam)
- Taking education to work situations (Convener - Mr. S. Sathyam)
- Provision of teachers: special teachers and/or subject teachers themselves (Teacher's guidebooks; manual of activities) (Convener - Mr. M.M. Premaraten)

Group II:

Mrs. Li Bingjie (China)

Mr. J. Marpuang (Indonesia)

Mr. Sang Hyuk Lee (Korea)

Prof. Socorro L. Villalobos (Philippines)

Dr. M.A. Bhatti (Pakistan)

Mr. Swasdi Suwanaagsorn (Thailand)

Dr. H.K. Paik (Secretary)

Topics discussed:

- Vocational orientation and guidance (Convener - Prof. S. Villalobos)
- Applied research and summing up of experiences (Convener - Mr. M.A. Bhatti)
- Utilization of local human and material resources (Convener - Mrs. Li Bingjie)
- Assessment of students' performance (Convener - Mr. Jeremias Marpaung)

APEID PUBLICATIONS

RELATING TO VOCATIONAL AND TECHNICAL EDUCATION

1. *Curriculum development for work-oriented education; report of a Regional Field Operational Seminar, Japan. 1975**

2. *Diyasena, W. Pre-vocational education in Sri Lanka. 1976**

3. *Work and learning; final report of a Joint Operational Study of on-going pilot projects in Asia. 1978**

4. *Singh, P. Harbans. Centralized workshops in Singapore. 1975*

5. *Inventory of educational innovations in Asia and the Pacific, EIA Nos. 96–109 (1979) and EIA Nos. 145–172 (1981)*

6. *Development of productive skills; report of a Sub-regional Workshop, Philippines. 1979*

7. *Vocational and technical education: Development of curricula and instructional materials for mechanical and civil/building subjects; report of a Technical Working Group Meeting, Republic of Korea. 1980*

8. *Co-operation in vocational and technical education in Asia; exploratory field studies on vocational and technical educational systems and projects. Report of Inter-country and Inter-project Study Visits. 1980.*

9. *Vocational and technical education: Development of curricula, instructional materials and physical facilities, and teacher training, with focus on electrical and electronic subjects; report of a Technical Working Group, ROEAP, Bangkok, 1981*

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* Out of stock

The Asian Programme of Educational Innovation for Development (APEID) has as its primary goal to contribute to the building of national capabilities for undertaking educational innovations linked to the problems of national development, thereby improving the quality of life of the people in the Member States.

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

The 21 countries in Asia and the Pacific participating in APEID are: Afghanistan, Australia, Bangladesh, China, India, Indonesia, Iran, Japan, Lao People's Democratic Republic, Malaysia, Maldives, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Singapore, Socialist Republic of Viet Nam, Sri Lanka and Thailand.

Each country has set up a National Development Group (NDG) to identify and support educational innovations for development within the country and facilitate exchange between countries.

The Asian Centre of Educational Innovation for Development (ACEID), an integral part of the Unesco Regional Office for Education in Asia and the Pacific in Bangkok, co-ordinates the activities under APEID and assists the Associated Centres (AC) in carrying them out.

The eight programme areas under which the APEID activities are organized during the third cycle (1982-1986) are:

1. Universalization of education: access to education at first level by both formal and non-formal means;
2. Education for promotion of scientific and technological competence and creativity;
3. Education and work;
4. Education and rural development;
5. Education and urban development;
6. Educational technology with stress on mass media and low-cost instructional materials;
7. Professional support services and training of educational personnel;
8. Co-operative studies, reflections and research related to educational development and future orientations.