Section 4

REGIONAL CENTRE FOR
EDUCATION IN SCIENCE AND MATHEMATICS (Malaysia)

Background

The Southeast Asian Ministers of Education Organization (SEAMEO) was established in 1965 to foster regional co-operation in education, science and culture. The eight member countries are Indonesia, the Khmer Republic, Laos, Malaysia, the Philippines, Singapore, Thailand, and the Republic of Vietnam. In addition there are three associate member countries, namely Australia, France and New Zealand.

The policy-making body of the Organization is the Southeast Asian Ministers of Education Council (SEAMEC) composed of the Ministers of Education of the member countries. The executive arm of the Council is the Southeast Asian Ministers of Education Secretariat (SEAMES), located in Bangkok, Thailand. Programme activities are mainly carried out through a series of Regional Centres/Projects located in various member countries. The Regional Centres/Projects are:

1. The Regional Centre for Tropical Biology (BIOTROP) located in Bogor, Indonesia.

2. Regional Centre for Educational Innovation and Technology (INNOTECH), temporarily located in Bangkok, Thailand (previously in Saigon, Vietnam).

3. Regional Centre for Education in Science and Mathematics (RECSAM) located in Penang, Malaysia.

4. Regional English Language Centre (RELC) located in Singapore.

5. Regional Centre for Graduate Study and Research in Agriculture (SEARCA) located in Los Banos, Philippines.

6. Central Office of the Governing Board of the Regional Tropical Medicine and Public Health Project (TROPMED) located in Bangkok, Thailand.

A further Centre, the Applied Research Centre for Archaelogy and Fine Arts (ARCAFA) is under consideration, and was originally planned to be located in Phnom Penh, Khmer Republic.

The Regional centres conduct a wide range of training courses. BIOTROP, INNOTECH, RECSAM and RELC award certificates and diplomas to their participants on completion of the courses, whilst SEARCA and TROPMED award master's and doctorate degrees and postgraduate diplomas.

Structure of RECSAM

RECSAM was established by SEAMEO as an autonomous institution in May 1967, with the main purpose of assisting member states in the improvement of science and mathematics teaching and thereby providing the firm foundation necessary for meeting the scientific and technical manpower requirements of Southeast Asian countries in the future. The Centre is hosted by the Government of Malaysia as her contribution to regional co-operation, and administered by a Director under the guiding policy of SEAMEC which channels its policy decisions through a governing board. The Director is guided by an International Advisory Council in the development of the Centre's programme.

The Centre is organized under four broad headings, namely Training, Research, Information and Special Services, and Administration.

The Training Division operates courses aimed at training key personnel in modern techniques of teaching and evaluation in science and mathematics.

The Research Division operates courses aimed at developing complete prototype units or modules in science and mathematics as well as conducting some pilot studies on child learning. The two most important projects are the Southeast Asian Science and Mathematics Experiment (SEASAME) and the Science and Mathematics Concept Learning of Southeast Asian Children.

The Information and Special Services Division produces and disseminates the various reports and other RECSAM publications, as well as maintaining contact with appropriate institutions and bodies both within and external to the SEAMEO region.

The Administration Division handles the organization and running of the Centre.

Location of RECSAM

RECSAM is located on the Malayan Teachers' College campus, near Georgetown, Penang. It began limited operations in 1968 in borrowed accommodation from the college, and occupied its own premises on the completion of the first building phase in 1972. This phase involved the construction of hostel accommodation and the recreational block (the latter being temporarily used as the teaching/administrative block pending the completion of phase two). The phase two building will contain two laboratory/workshop blocks, a library/information block, a conference hall and an administrative/teaching block. Details are shown in the drawing on page 37.

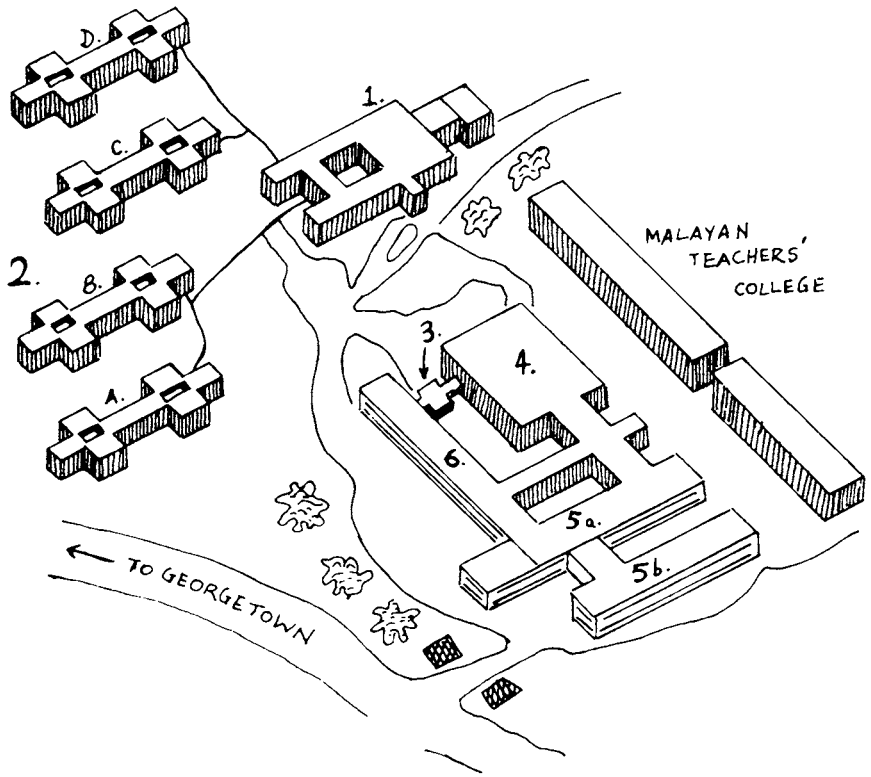
The building priorities were based on the provision of satisfactory accommodation for the course participants together with adequate teaching facilities, followed by purpose-built teaching facilities. By using such a plan, course participants suffered minimum interference to their work. (Accommodation is often a source of discontent on residential courses.)

Facilities

The building currently being used to house the activities of RECSAM is the recreational block, which will revert to this function when phase 2 is completed. The block contains classroom/laboratory space, a small workshop, stores, printing/duplication space, a small resource area (the main library is located in the Malayan Teachers' College building) and a small darkroom for photographic work. In addition, office space for staff, the administrative offices and the dining room are located in the building.

The new building is scheduled to have an administrative and teaching wing, two wings containing science laboratories and workshops, a library and information block, and a conference block. It is envisaged that the workshop facilities will be able to cater for course work by the participants, whilst a separate workshop will be concerned with prototype production of science and mathematics apparatus.

SKETCH PLAN OF THE RECSAM SITE



KEY

1. Recreational Block
2. Hostel Blocks (A, B, C, D)
3. Conference Room
4. Library and Information Block
5a. Science Laboratory/Workshop Block
5b. Science Laboratory/Workshop Block
6. Administration and Teaching Block

At present these two functions are carried out with some difficulty in the one small workshop in the recreational block. Basic hand tools are used for the construction of apparatus: machine tools are not used.

The hostel accommodation is located near the teaching area and consists of some 100 units of single/double accommodation, some of which are air conditioned. There are common rooms and laundry facilities in each of the four hostel blocks. A large dining room/recreation room is located in the recreational block, which at the moment is also used as a general purpose hall.

Functions of RECSAM

To achieve the purpose for which it was established, RECSAM undertakes the following activities:

1. Training programmes for key educators in modern methods of teaching science and mathematics.

2. Development of action-research techniques.

3. Critical study of selected pilot project materials.

4. Development of specific studies and instructional materials to be carried out as pilot projects.

5. Critical examination of research on curriculum materials and methodology.

6. Development of simple techniques in apparatus-making using low-cost materials.

7. Organization and conduct of professional seminars and workshops for educators in the region.

8. Gathering information and acting as a clearing house for science and mathematics education.

9. Consultation and special services for SEAMEO member countries.

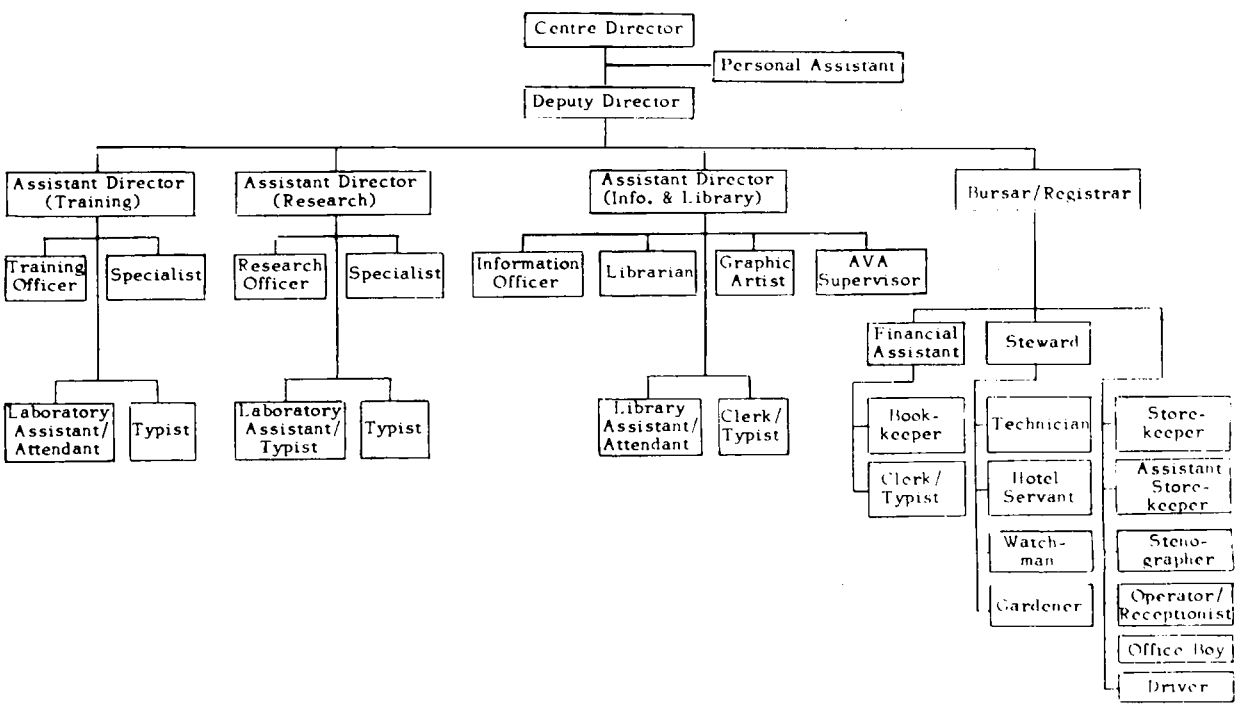
10. Promotion of indigenous efforts in curriculum development.

Formal relations have been established with UNESCO, thereby providing mutual co-operation in matters and activities related to science and mathematics education in Southeast Asian countries. This link will also enable the Centre to benefit from the provision of specialists, consultants, etc. when required.

Staffing of RECSAM

RECSAM is staffed by tutors recruited from within the SEAMEO region and by specialists from elsewhere. In addition, the services of short-term consultants are utilized when required. Often these are generously provided by governments throughout the world. The organizational structure of RECSAM is shown in this diagram:

RECSAM ORGANIZATIONAL CHART



The actual staff and posts for 1975-76 are as follows.

ADMINISTRATION

Academic Staff	Non-Academic Staff
Centre Director (1)	Registrar/Bursar (1)
Deputy Centre Director (1)	Financial Assistant (1)
	Personal Assistant to Director (1)
	Stenographers (2)
	Book-keeper (1)
	Clerical Officers (4)
	Clerical Assitants (2)
	Typists (2)
	Store-Keeper (1)
	Assistant Store-Keeper (1)
	Van Driver (2)
	Office Boys (3)
	Maintenance Technician (1)
	House Servants (10)
	Gardners (6)
	Watchmen (4)
	Steward (1)
	Security Officer (1)
	Receptionist/Telephone Operator (1)

TRAINING DIVISION

Academic Staff	Non-Academic Staff
Assistant Director (1)	Laboratory Assistant (1)
Training Officer (Science) (1)	Laboratory Attendants (4)
Biology Officer (1)	Typists (2)
Chemistry Officer (1)	
Mathematics Officer (1)	
Physics Officer (1)	

RESEARCH, DEVELOPMENT AND EVALUATION DIVISIONS

Academic Staff	Non-Academic Staff
Assistant Director (1)	Laboratory Assistant (1)
Biology Officer (1)	Workshop Technician (2)
Mathematics Officer (1)	Laboratory Attendants (2)
	Typists (2)

INFORMATION/SPECIAL SERVICES DIVISION

Academic Staff	Non-Academic Staff
Assistant Director (1)	Clerical Officer (1)
Information Officer (1)	Clerical Assistant (1)
Librarian (1)	Typists (2)
Library Assistants (2)	Library Attendants (2)
A.V.A. Supervisor (1)	
Graphic Artist (1)	

Financing of RECSAM

In mid 1970, RECSAM became semi-operational with the first phase of its building programme, and this commenced the first five-year operational plan for the Centre. The total cost of the plan was projected as being US $ 8.7 million, of which the U.S.A. contributed 50%. The Government of Malaysia, as the host country, assumed responsibility for the capital and operating costs of the Centre whilst

SEAMES had the responsibility for raising the funds required for the Centre's activities. The latter are generally raised from grants and donations, in either cash or kind, from interested governments and other organizations and institutions. The second phase of the building programme is being financed jointly by the U.S.A. and the Malaysian Government. Work on this phase commenced in 1975, and occupation of the premises is expected in late 1976.

The second five-year development plan commenced in July 1975, and for this RECSAM is completely responsible for obtaining its own finances.

The responsibility for the total operational costs for the second five-year development plan was taken over by the Government of Malaysia in June 1975. The amount allocated was about M$ 4.6 million, with an additional M$ 3,150,000 for the construction of additional facilities in the building programme and for awarding scholarships and fellowships.

The breakdown of financing for the second five-year plan is as follows:

SECOND FIVE-YEAR FUNDING PLAN (1975-1980)

OPERATIONAL COST ESTIMATES

	Total for 5 years
Personnel emoluments for SEAMEO staff, including other personnel costs and benefits	M$ 4,092,500
Services and Supplies	1,655,900
Grants and Subsidies	145,000
Total	M$ 5,893,400

SPECIAL FUND ESTIMATES

	Total for 5 years
Training and Research Scholarships	M$ 2,516,800
Seminars/Conferences/Workshops	137,500
Governing Board Meetings	96,250
Personnel Exchange	15,000
Total	M$ 2,765,550

(M$ 1.00 = £S 0.20 approx. in January 1976)

ACTIVITIES

The Training Division and the Research Division are responsible for the courses conducted at the Centre and work closely together. The courses run by the Training Division aim at training key personnel in modern techniques of teaching and evaluation, whereas those run by the Research Division deal with the development of complete prototype units or modules and with conducting pilot studies on child learning. The range comprises elementary science, elementary and secondary mathematics, integrated science, biology, physics, chemistry, and elementary and secondary science apparatus. Up to June 1975 some 900 participants had attended training courses at the Centre. Depending on the nature of the course/seminar/workshop, participants spent from two weeks to twelve weeks there.

In the second five-year plan, some streamlining of courses has been introduced to reflect more clearly the intentions of the activity and distinguish more clearly the expected outcomes. Table 7 indicates the types of courses and the numbers of participants for the second five-year plan 1975-1980.

TABLE 7: PROPOSED PROGRAMMES FOR 2½ MONTHS EACH

TRAINING COURSES	NUMBER OF SCHOLARS				
	1975/6	1976/7	1977/8	1978/9	1979/80
TC-S1 Modern Methods of Teaching Primary Science	16	16	16	16	16
TC-M1 Modern Methods of Teaching Primary Maths	16	16	16	16	16
TC-C Modern Methods of Teaching Chemistry	16		8		8
TC-B Modern Methods of Teaching Biology	8		16		16
TC-P Modern Methods of Teaching Physics	16		8		8
TC-M2 Modern Methods of Teaching Secondary Maths	16		8		8
TC-E1 Modern Methods of Primary Science and Maths Evaluation/DP-SM	16	16	16	16	16
TC-E2 Modern Methods of Secondary Science and Mathematics Evaluation		8		8	
TC-1 Modern Methods of Teaching Integrated Science	16		16		16
TC-Q1 Training in Development of Primary Science/Mathematics Apparatus	8	8	8	8	8
DEVELOPMENT					
DP-SM Development of Teaching Modules for SEASAME Project	16	16	16	16	16
DW-02 Development of Secondary Science/Maths Apparatus (Production and Design)					
DW-LM Manual of Laboratory Management and Techniques	16	16			
DP-1 Development of Teaching Units in Integrated Science		8		8	
RESEARCH					
RP-SL Studies in Concept Learning - Primary Science	8	8	8	8	8
RR-M1 Studies in Concept Learning - Primary Maths	8	8	8	8	8
DEVELOPMENT					
DW-SIN Development of Pre-Service Teacher Training Modules in Primary Science		16		16	

Development (continued)

DW-M1N Development of Pre-Service Teacher Training Modules in Primary Maths		16		16	
DW-S1R Development of In-Service Packaged Units in Primary Science and Maths		16		16	
DW-M2G Development of Maths Teaching Units for Secondary Students (General Curriculum)		16		16	
DW-S2V Development of Science Teaching Modules for Vocational Studies			8		8
DW-M2V Development of Mathematics Teaching Modules for Vocational Students			8		8
TOTAL	176	176	176	176	176

N.B. If more scholarship funds were available more courses per year could be mounted or more scholars could be accepted for any course approved for any year.

Some idea of the range of the courses listed in Table 7 may be obtained from the following outline of three of them.

1. MODERN METHODS OF TEACHING BIOLOGY (TC-B)

Objectives

To train key educators from participating countries in the principles of curriculum development, their implementation and evaluation.

To acquaint participants with modern curricular projects in Biology (e.g. BSCS and Nuffield Biology).

To introduce participants to modern methods employed in teaching Population Biology with emphasis in field exercises and laboratory studies relevant to Population Education Studies.

To make use of readily-available resources in SEAMEO countries to introduce Population Education into their Secondary School Biology Curriculum.

To produce prototype instructional units in Population Education consisting of Pupils' Texts or Teachers' Guides.

Description

Under the guidance of specialist-consultants the participants will engage in the analysis of modern Biology curriculum projects from outside the SEAMEO Region (BSCS & Nuffield Biology). The course will also involve the participants in actual laboratory experiences as well as field exercises which have been planned to develop concepts which could then be presented to and understood by secondary students.

The participants will be acquainted with basic skills in: (a) planning and writing their units; (b) teaching techniques; (c) examination techniques; and (d) evaluation techniques. At the end of their term at RECSAM they will be required to produce prototype instructional units in Population Education. These units may be in the form of a teachers' guide or pupils' text. Participants will also evaluate their product in the classroom situation when they return to their home countries and send some feedback to RECSAM.

Participants — Two or three educators who are involved in or are likely to be involved in curriculum development and/or teacher training programmes on returning to their own countries.

Duration — A ten- to eleven-week course offered annually.

2. SECONDARY SCIENCE/MATHEMATICS APPARATUS (DW-02)

Objectives — These workshops are aimed at the variety of problems of design and production of secondary science/mathematics equipment in SEAMEO countries.

Given the various national priorities for secondary level equipment, participants will:

(a) Design and produce industrial prototype (hand-made) for selected priority items of equipment.

(b) Produce small quantities of selected items for tryout in their countries' curricula.

(c) Produce plans for in-country testing and evaluation of these items.

(d) Produce a set of guidelines for co-operation (liaison) between curriculum development centres (educationists) and equipment design and production units (engineering personnel).

Description — These workshops will be product-oriented, but on a small scale in order to ensure that the work of the participants will provide them realistic exposure and training in the techniques of mass production in the light of the equipment situation in their own countries. To some degree the workshops will be future-oriented.

Participants' work and training will include the following concerns: designing for small-scale mass-production from a tested educational prototype; making industrial prototypes; making inexpensive dies; properties of raw materials; manufacturing methods (small-scale); quality control (educational and industrial specifications); evaluating equipment in the classroom; and the nature of working relationships in the development of educational equipment.

Participants — Two to four (depending on details of workshop's structure and duration).

Duration — Ten to 20 weeks. The length of the workshop will depend on its implementation. If design and production are separated into two sequential workshops, both could extend for ten weeks. If design and production are not separated, but run simultaneously, the duration could be ten weeks.

3. STUDIES IN CONCEPT LEARNING - PRIMARY SCIENCE (RP-SL)

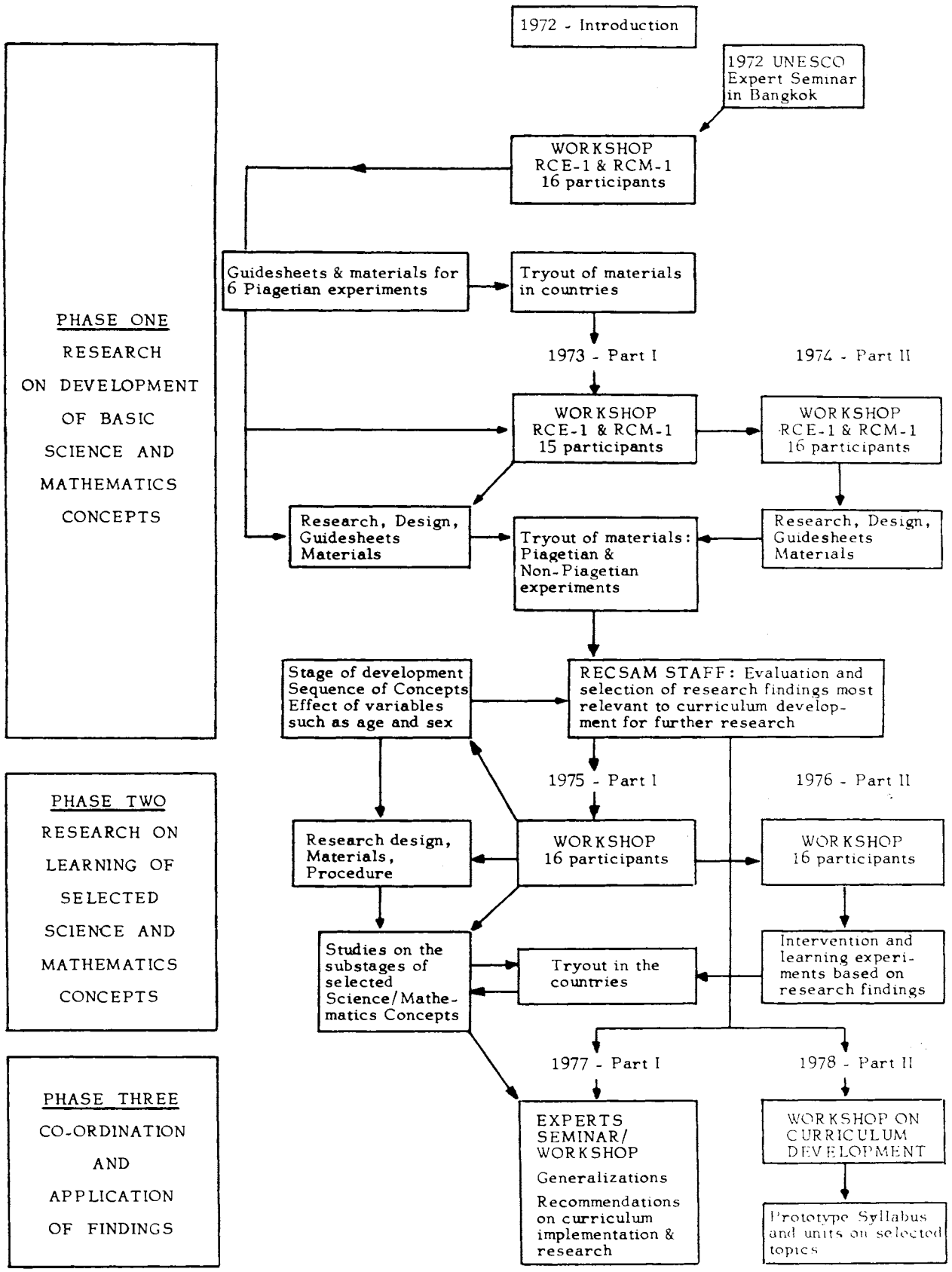
Objectives and Benefits — This course is part of a series implementing RECSAM's Pilot Project on Science/Mathematics Concept Learning of Southeast Asian Children. The project aims to:

(a) Gain a better understanding through research, of how children in the region form science and mathematics concepts, and the variables influencing the process.

(b) Develop procedures, materials, research design and techniques for experimenting with children's thinking for possible use by member countries interested in conducting similar research or for diagnostic purposes in science classrooms.

PILOT PROJECT ON SCIENCE/MATHEMATICS CONCEPT LEARNING OF SOUTHEAST ASIAN CHILDREN

1973-1978



(c) Develop guidelines on how to teach primary science based on the findings of the research done by the participants and of similar research in the region.

(d) Design and test learning experiences which utilize the research results and which can be incorporated in the primary science curricula of member countries.

An added benefit is the training and experience gained by the participants in designing, conducting and evaluating research of this kind.

Description

The stages in the development of the project are shown in the flowchart on page 44. The 1976 course, which is now in progress, concentrates on the learning of science concepts. By the end of this phase of the programme, it is expected that participants will have devised or replicated intervention experiments for the basic science concepts and creative learning experiences for the various substages of certain concepts.

Phase 3 begins in 1977 when findings at RECSAM and those of other researchers will be co-ordinated. Tentative generalizations will be made about how Southeast Asian children develop and learn science/mathematics concepts. Recommendations for curriculum implementation and further research in the region are expected. The course will be in the form of an expert's seminar.

The last course in the project is that of 1978 wherein the participants, after examining the various primary science curricula in the region and the recommendations of the 1977 seminar, will co-ordinate with the SEASAME Project to develop a prototype syllabus and selected units for primary science.

Participants

These should be from one of the following groups:

(a) Researchers (graduate students or college lecturers) who have been involved in children's learning and/or the teaching of primary science.

(b) Senior teachers or educators connected with primary science teaching who, upon their return to their own countries, are likely to be involved in research or curriculum innovation.

(c) Classroom teachers or inspectors or supervisors of primary science who have shown active interest in children's thinking or the teaching of science.

Duration

Ten weeks.

RESEARCH PROJECTS

The Southeast Asian Science and Mathematics Project (SEASAME) aims to design, develop and produce relevant teaching and learning modules which include teachers' guides, pupils' worksheets, evaluation procedures and instruments, and appropriate apparatus and equipment. It is hoped that the modules will complement and supplement national efforts to innovate primary science and mathematics curricula.

The initial unit "Introduction to Systems", comprising twelve lessons as well as teaching aids and evaluation instruments, was developed early in 1973 and tried out in Penang. Some 600 primary children were involved in the trials. The materials were developed and tested by course participants in the first half of 1973. At the same time a course for senior national administrators recommended

that each member country should have a national co-ordinator in charge of the whole project at national level. This recommendation was accepted by the member countries, and a workshop for the national co-ordinators was held in March 1974 under local conditions. The workshop produced regional and individual country plans for trying out the materials.

Trials were carried out in the eight member countries and, as a result of the feedback, modifications were carried out in courses during 1975. In addition,new units were prepared and trial tested in Penang. The second phase of country tryout was prepared for testing in late 1975/early 1976.

Another research project on "Science and Mathematics Concept Learning of Southeast Asian Children" commenced in 1972 with two courses in which the participants were exposed to concept formation in general. From these courses guide sheets were developed, and selected Piagetian experiments were tried out in schools in Penang.

The 1973 courses again discussed general theories of learning and then critically examined the material prepared and used in the previous year. Further tests were developed as well as guide sheets, work sheets and summary sheets which were then tested in seven Penang schools. RECSAM requested the national Ministries of Education to release the participants from regular duties so as to carry out the field trials in their respective countries. In all, 2,860 tests were carried out on 847 seven- to twelve-year-olds using the eight experiments so far developed.

The 1974 courses built on the previously-developed material, and field trials were again carried out in the participants' home countries with three additional experiments. Twelve participants returned their results containing 6,460 tests involving 1,086 children.

At the 1975 course, which included five participants who had been on the 1974 course, the activities involved analysis of the 1974 field trials as well as the preparation of further material and its trial in schools. A longitudinal study also commenced in 1975 using twelve children from near-by areas. Equipment to suit the study was constructed both by the participants and the technical staff at RECSAM and all the experiments developed on previous courses were used.

A third project, on self-instructional materials, is related to the functioning of RECSAM. Basically, the eight member countries can be divided into English speaking or French speaking, although each country has its own language and regional variations. This presents a problem for RECSAM in that participants on courses have different levels of understanding. To overcome the problem of language, and other possible areas of weakness, a programme has been implemented on preparing self-instructional, self-paced materials in defined areas. Four areas have been chosen, namely: instructional goals and objectives; how children learn; evaluation; and science/mathematics topics.

The material prepared so far has been translated into Lao, Indonesian and French. It has been tested, and is currently being revised. The development of this project is being undertaken by members of the RECSAM staff. The provision of research fellowships is another component of the RECSAM research programme.

Equipment Unit

In October 1973, RECSAM hosted a regional workshop on the "Production of Low-cost Teaching Materials for Primary Science and Mathematics" which was sponsored jointly by SEAMEO and Deutsche Stiftung Fur Internationale Entwicklung (German Foundation for International Development). Amongst the recommendations of that workshop were:

SEAMEO Regional Programmes

1. There should be established a regional equipment unit at the SEAMEO Regional Centre for Education in Science and Mathematics, with the following functions:

(i) Designing and fabrication of prototype equipment for science and mathematics.

(ii) Training of key personnel from the SEAMEO countries for designing and production of prototype materials.

(iii) Acting as a clearing house for collection and dissemination of information regarding materials for science and mathematics.

(iv) Exploring ways and means by which the science and mathematics equipment needs of the region can be met.

National Programmes

1. Each member country examines the feasibility of establishing a national design and prototype production unit as a component of its curriculum development centre or similar institutions. Multilateral and/or bi-lateral assistance in establishing such a centre should be explored.

2. Countries should decide on their own priorities for prototype equipment development which should cater for the present curricula in mathematics as well as science.

The Fifth Governing Board Meeting of RECSAM, held in September 1974 decided "that the Centre in its attempts to implement some of the recommendations of the Workshop, should develop the necessary materials only to the stage of educational prototypes, and that the emphasis should be on the training of personnel who would be likely to be employed as designers in national equipment workshops."

One member of the academic staff, namely the Training Officer (Science), is responsible for the technical component of the course work as well as arranging the specialist courses on laboratory management/equipment, etc. In addition, he is involved in other duties related to his own academic discipline, and he is assisted by one workshop technician, two laboratory assistants and a laboratory attendant. Technical staff are trained by the RECSAM staff. The workshop facilities consist of a laboratory area equipped with hand tools and workbenches (see photo). The new building will have two workshops - one for course work etc, and one for prototype design and development.

Those courses that relate specifically to equipment offered at RECSAM are perhaps best described in the following extract from a paper entitled "RECSAM's Programmes and Courses for Development and Production of Prototype Science Equipment" presented at the aforementioned workshop:

To assist each member country build up a core of equipment key personnel who could develop prototype equipment and produce design plans for dissemination, as well as organize in-service training of teachers and laboratory personnel in equipment production, RECSAM has successfully implemented the course 'Development of Primary Science Apparatus' code titled RMI-1 in 1972 and again in 1973. This intensive course of about ten weeks' duration is specially designed for SEAMEO key peronnel who are actively involved in equipment design, development and manufacture in their respective countries, or who are in positions which make them likely to be so. So far, fourteen SEAMEO key personnel have undergone this course, namely, two each from Indonesia, Khmer Republic, Malaysia, Philippines, Singapore, Thailand, and one each from Laos and Vietnam.

The terminal behavioural capabilities expected of participants on completion of the RME-1 course are that they should be able to:

(a) improvise simple science and mathematics equipment for use in the primary grades.

(b) carry out routine maintenance and minor repairs on simple equipment.

(c) transform new ideas for simple equipment into reality through designing, constructing and testing of such.

(d) produce an equipment design plan acceptable for publication with the necessary technical drawings and parts specification included.

(e) provide sound advice for the procurement of equipment from commercial sources.

(f) carry out refinements on prototype equipment for possible mass production.

(g) advise on plans for mass production of prototypes by government and non-government agencies.

(h) assist in development of curriculum materials through design, and development of equipment hardware for these materials.

(i) organize and conduct in-service courses for teacher trainers, teachers and laboratory personnel, to train them in the basic skills for equipment production leading to actual production of urgently needed equipment.

(j) play leadership role in science/mathematics exhibitions and in school science/mathematics activities.

The course work described above has been continuing, and the Centre has a display area for apparatus developed. In addition, the workshop staff have been constructing apparatus for the Concept Learning Project.

Audio Visual Aids

The Centre has a specialist in audio-visual aids on its staff, and this topic is a constituent part of the majority of courses offered at RECSAM. A small darkroom is available where course participants are able to receive instruction in the use of photographic materials and techniques, and a small amount of resource-centre space is available for using a range of audio and visual apparatus and for receiving instruction in the operating techniques and the preparation of material. It is expected that, along with the expansion of the workshop facilities in the new building, an expansion of the audio-visual facilities will also take place.

Curriculum Development Centre - Kuala Lumpur, Malaysia

This is an example of a national centre established by a member country of RECSAM. It is a division of the Ministry of Education and was established in January 1973 with assistance from UNESCO. The activities of the centre include: (a) curriculum development at primary and secondary school levels with an emphasis on science and mathematics; (b) research in conjunction with a Malaysian university on problems related to linguistics in education; (c) pre-school education and compensatory education; and (d) prototype equipment research and production.

The curriculum development projects are related to an integrated approach to learning and also reflect some of the materials developed at RECSAM.

The workshop unit of the centre constructs apparatus in wood, metal and plastics, and has workshop capacity for developing prototypes. Once a design is accepted, the designs are made available to local commercial manufacturers who construct and market the approved article.

Course work is carried out at the centre and is particularly related to key personnel from the Federation, who in turn are in a position to further expand the "multiplying effect" in their own states.

The centre has a comprehensive resource area containing a range of audio-visual aids as well as the Library and a printing/publication section for producing its own materials. In addition, a number of vans, located at selected establishments (often teacher training colleges or higher secondary schools), serve schools within their area. They carry a kit of tools developed at the centre and other equipment, and they act both as repair units and as in-service training centres.

The centre has received assistance from UNESCO, UNICEF and other donor agencies. It will be moving into its own purpose-built facilities late in 1976. Besides having workshop and teaching facilities it will have hostel accommodation for some 140 persons.