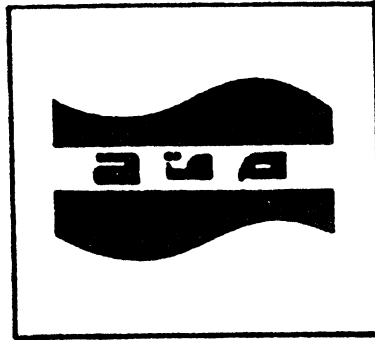


SUB-REGIONAL INFORMATIVE SEMINAR ON:

"COMPUTER APPLICATION IN EDUCATION"

14 -16 NOVEMBER 1987

Baghdad, Iraq



**UN ECONOMIC AND SOCIAL COMMISSION
FOR WESTERN ASIA**

DEC 13 1987

LIBRARY + DOCUMENT SECTION



Sponsors

- *National Computer Centre NCC Ministry of Planning - Iraq*
- *United Nations Educational, Scientific and Cultural Organization's
Regional Office for Science and Technology for the Arab States
ROSTAS*
- *United Nations Economic and Social Commission for Western Asia
ESCWA*



UNITED NATIONS

ECONOMIC AND SOCIAL COUNCIL

Distr.
LIMITED
E/ESCWA/ID/87/WG.1/10
16 November 1987
ORIGINAL: ENGLISH

ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA

Seminar on Computer Application in Education
14-26 November 1987
Baghdad

A TENTATIVE OUTLINE OF A PROPOSED PROJECT
TO PRODUCE EDUCATIONAL SOFTWARE AND
COURSEWARE IN THE ARAB REGION

UNESCO
Regional Office for Science and Technology
for the Arab States (ROSTAS)

The opinions expressed in this paper are those of the author and do not necessarily reflect those of the United Nations Economic and Social Commission for Western Asia.



REGIONAL OFFICE FOR SCIENCE AND TECHNOLOGY
FOR THE ARAB STATES (R O S T A S)

A tentative outline of a proposed project
to produce educational software and
courseware in the Arab Region

MAY 1986

I. DEVELOPMENT OBJECTIVE:

The overall development objective of the proposed project is to facilitate the incorporation of all aspects of informatics and computer-based technology into educational systems at all levels in the Arab States in order to :

- 1) Reduce dependence on foreign imported materials and expertise by increasing systems development capabilities, particularly in the area of development of Arabic software, courseware and programming ability.
- 2) Keep pace with developments in other regions, whilst maintaining Arabic specificity.

II. OPERATIONAL CONSIDERATION:

Computerized information systems have been introduced with increasing rapidity into various business, financial and industrial enterprises in the Arab region over the past decade. The impetus has come mainly from the entrepreneurial and industrial sectors. Due to rapid development and changes in the technology itself, as well as the new skills required in this domain, most manpower development has been carried out through on-the-job training and orientation provided by equipment suppliers. Some specialized institutions for post-graduate training in informatics do exist in the region, but developments have generally by-passed formal

education systems at the primary and secondary levels and the potential of information systems remains largely unexploited.

The operational emphasis of this project is, therefore, on human resources and systems of the countries concerned. However, since these educational systems have not played a leading role in these technological developments, nor in familiarizing the population with their educational and developmental potential, it will be necessary to incorporate these new fields into the various existing disciplines in a coherent manner, calling for a wider and more innovative series of actions than would be the case.

III. IMMEDIATE OBJECTIVES:

The following immediate objectives will need to be met in order to achieve the stated development objective:

- 1) Systems development: calling upon and compiling existing activities and expertise to develop new approaches to systems development through experimentation and support of pilot projects. Particular attention should be paid to :

- a) standardization of Arabic codification for computer language.

- b) establishing priorities for regional software and courseware production and technological innovation.
- 2) Arabization of computer software and courseware to ensure compatibility between the various existing English / French systems and thereby overcome the barriers created by the use of foreign languages.
- 3) Development of software and courseware adapted to the requirements of the Arab region for use inside and outside the educational systems. Particular attention should be paid to the production of appropriate software for teaching Arabic, science and mathematics.

IV. OUTPUTS:

The project will further the introduction of informatics into the educational systems of the region by providing technical assistance to those institutions and departments already active in this and related fields and by building up links between these bodies and between the regional educational authorities. It will encourage experimentation and development of pilot projects relevant to regional educational development. The final output will be the establishment of a self-reliant decentralized network of cooperating national

institutions covering experimentation, research and implementation at all levels of formal and non-formal education.

Indicated outputs for the immediate objectives can be stated as follows :

- 1) Standardization of terminology.
- 2) Development of methods to ensure compatibility of Arabic software.
- 3) Establishment of a catalogue of existing relevant courseware.
- 4) Development and testing of about thirty programmes for teaching Arabic.
- 5) Adaptation or production of about fifty programmes for teaching science and mathematics.

V. ACTIVITIES:

Project activities will be undertaken by the institutions participating in the regional network. They will be assisted by coordinating mechanism under the supervision of UNESCO's Intergovernmental Informatics Programme (IIP), but limited to activities within the Arab region and supported by a project coordinator who will provide orientation and ensure coherence for the decentralized activities.

The development of links between the participating bodies will call for major efforts in the standardization of procedures and regulation of the range and types of software and courseware deemed acceptable to the region. Such regulation would encourage the local production of software and courseware for which the teaching of computer science will lay the foundations. The development of educational industries, of which computer programmes and courseware form a part, was the theme of a feasibility study completed in September 1985 by UNESCO, ALECSO and AFESD in collaboration with UNIDO.

The Arabization of software and courseware is an essential component, and is a domain in which research and development facilities and expertise of several of the constituent institutions will be in a position to play an innovative role. As a result, the language and culture of the region would be protected from undue encroachments of foreign language material to which only a minority of the population of the area would have access due to language barriers. The production of Arabic software, courseware and the adoption of transcription and codification standards will strengthen regional cooperation and promote cultural and linguistic homogeneity.

The decentralized nature of the project will necessitate the organization of technical or expert meetings and consultations in the various subject areas to ensure overall progress and information exchange and pooling of experience for the benefit of the region.

VI. INPUTS

1) Inputs in kind from cooperating governments and institutions

The participating countries will:

- a) provide facilities for information exchange on the activities of and output from their national institutions to other cooperating institutions in the region.
- b) facilitate travel and other administrative arrangements for any national staff participating in the activities.
- c) provide facilities for workshops or training courses, such as seminar rooms, access to libraries and laboratories, research material etc.
- d) continue payment of salaries and emoluments of any national staff during their absence at regional workshops or seminars conducted within the framework of this project.

2) Inputs from Funding Agencies:

- a) US Dollars 1,000,000 to be provided for experimentation, pilot studies and production of software to be carried out by the organizations and institutions participating in the project. This activity will also stimulate activities based on regional concepts and approaches and may attract further funding from foundations if the material is innovative and of high quality.
- b) A modest sum to be set aside for the acquisition of equipment. Equipment may be available on a lease or loan basis from manufacturers, or distributors, or from some of the participating institutions.

VII. WORKPLAN

A more detailed and definitive workplan, particularly in respect of timing and locations will be elaborated on during a proposed meeting of experts. Subsequent modifications would be considered at a mid-term review meeting. As the project is essentially a pioneer operation, full details of how it is to develop and progress will not be available until options have been reviewed and decided upon.

Preliminary activities to achieve objectives and the subsequent development of the project are as follows:

- 1) Fielding project coordinator or appointment of consultant acting principally as a deputy.
- 2) Questions of software, programme, development of materials for educational informatics.
- 3) Information exchange between cooperating centres and establishments.

Exchange of data on experimentation, pilot projects and related programmes.

Details of access and means of increasing same to educational informatics systems inside and outside the region.

Review of bases of compatibility of systems,

Measures to overcome existing French-English language barriers, pending progress and adaptation of Arabic norms.

Promotion of experimentation and pilot projects to be implemented by cooperating bodies.

- 4) In the area of Arabization : technical reports on the transcription and codification of non-Latin scripts for informatics have been prepared by Unesco and by IERA (Morocco).

There will be technical discussions with ASMO and other regional standardization organizations.

Development of recommendations for implementation of standard Arabic codification, particularly for software.

- 5) Development of software, courseware and instructional packages.
- 6) Organization of a technical workshop with participating institutions and regional producers of software.
- 7) Utilization of material from UNESCO/ALECSO/AFESD feasibility study on educational industries in the region.

VIII. INSTITUTIONAL FRAMEWORK

The motivating power behind furthering the objectives of the project is the various specialized bodies or those with specific interest in informatics and computer science. Most of these institutions are in close contact with the educational systems and university faculties in their countries and thus able to take an active part in promoting the introduction and application of informatics into the educational process.

It is, however, the educational systems themselves which have the main interest in the project activities and will thus act as the principal formal institutions with which the project will operate.

The project will be implemented by Unesco (IIP).



