Computers: The School-Room Dilemma

Sylvia Mortoza

THE world's student population is likely to exceed a billion by end of the century but experts are yet to agree on how societies can incorporate technical progress in the field of education and to what extent traditions can be radically changed. Up to now, teaching the use of computers to children while still in the school room was the most fashionable view to take as the key to development. But today, the experts are no longer so sure.

The shortage of skills to be found nowadays as countries attempt to step into world of hi—tech in the 21st century is becoming a constant constraint on economic growth. But most countries, particularly agmong the developing ones, are finding themselves caught between the need to keep pace with technological advancement and the need to expand basic education to take in the needs of the illiterate masses. Faced with such a situation, the where, when and how of investing in the symbols of advanced technology by installing micro-computers in school rooms, has become a hot issue of debate.

When one-third of Americans below the age of 30 are functional illiterates, and possible half of all secondary school graduates unable to write a paragraph correctly, one may be forgiven if one questions the need to move into the era of computer technology without first alleviating, if unable to eliminate, such impediments to learning.

Although adherants to the idea of rapid introduction of computer technology to enable youngsters to attain computer literacy while still in the tender years believe firmly that education and society will be revolutionised, others have strong doubts and believe money spent no computers would be better spent on improving curriculums, strengthening teachers training and a greater emphasis on basic primary education and reducing widespread illiteracy. Even the Chairman of UNESCO believes there is a greater need for a revolution in thinking rather than a revolution in technology.

In today's Britain where the government has already spent more than US$ 24.4 million on microcomputers in educational programmes and the aquisition of software, 45% children leave school without even 'O' level pass, or its equivalent, whereas in France and Germany, only 10% leave wihout any form of qualification. 60% of British children abandon full time education at 16 years, the minimum leaving age whereas, in the United States and Germany, the figure is far less, at 10%. In Japan it is even lower with only 4% leaving school at such a tender age the major reason being an increasing competitiveness in a highly technological environment where skills are at a premium.

To upgrade skills, schools in the United States are alredy flooded with computers but the programme is handicapped by a chronic shortage of good educational software. Although there were more than 10,000 software packages on the market, in 1988, only 25% reportedly met the minimum technical and instructional standards. Of these, however, only 3—4% were considered to be excellent.

But a survey carried out in 1989 indicated that computer time in most schools was indequate at both elementary and secondary levels and cites a study of sixth-graders where programming with "Logo" software had been introduced. The study revealed that 69% of the students exposed this software had memorised the commands which tell the computer to draw a right angle but only 19% actually knew how to draw the same angle on paper.

The cost of installing computers in the school room being anything but cheap, the French programme to install 120,000 micro-computers and train 100,000 teachers cost about US$200 million. Yet, the government developed software for the "Informatique pour tous" programme launched in 1985 with the aim of providing each school with at least 50 packages quickly came to grief. A study showed not enough were distributed and those which failed to meet the requirements but, by the end of 1988 there were already around one million computers in school-rooms throughout the European Community.

Those countries which are in the forefront of the plan to introduce computers in school rooms are still unable to provide each student with more than just a few minutes of computing time with only one computer for every fifty students. In America, for instance, although more than one million computers are already installed, 64% of all computing time spent by students at secondary level and 36% at elementary level are devoted to only what is called "computer literacy" getting to know you computer.

Within the developing world, however, some countries have embarked on ambitious pilot schemes like Kenya where 3,280 students, aided by 245 teachers, were introduced to the world of computers with the disappointing result that most of the students did not get the opportunity to work with the computers at all and only a small percentage of the teachers showed any real interest in the technology. Other developing countries in Africa to show interest in computers in schools are Burkina Faso, Cote d'Ivoire and Senegal who have also reported disappointing results mainly due to a dearth of trained teachers and poorly designed software.

Countries like Mexico, Brazil, Chile and Argentina where computerisation has spread rapidly, few state schools have any computer experience and the teaching of "Informatics" has been left entirely to private sector institutions. Costa Rica, has however, embarked on an elaborate state programme where more than 4,000 micro—computers have been distributed to 210 laboratories in the public schools with the aim of teaching 42% of all primary students the intricacies of computing.

In India, computers have already been introduced in 1,250 schools and those teachers selected for the job are being trained at computer resource cetres most of which are in the private sector. Imported software is being used which includes word processing packages like "Wordstar" and "Word Perfect" "Logo" graphics "Database" management and spreadsheets like the commercial package "Lotus". Imported software, however, has been found in practice not to be well matched to either the syllabus or the cultural and linguistic diversity of the nation.

In Pakistan although pilot projects have received adequate funding from the education department they have suffered from a lack of trained teachers. In Sri Lanka, despite government support, their pilot project suffered from such the same problems.

Possibly a similar fate will await the efforts by Bangladesh to introduce computers in the class-room although some privately run schools are claiming success. Nost of the expansion in computer education has been confined to the private training schools and institutions. like India, a total dependence on imported commercial software not always suited to local needs especially in education, serves to handicap progress due, in the main, to an inability to fully comprehend instructions in English.