An Overview of Information Technology and Education in Malaysia

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In the last decade, Malaysia has experienced a period of rapid economic growth accompanied by parallel developments in the IT industries. In line with the national aspiration of transforming itself into a developed country by the year 2020 - all within one generation - much effort in education has been focused on making the nation IT-literate, beginning with the school children. As such, since 1986, numerous IT pilot projects have been initiated in schools. But, to this day, none of these projects has generated into a nationwide project as originally intended. This paper describes IT development and future trends in education institutions in Malaysia, as well as some issues and problems associated with IT uptake. The paper concludes with the writer’s observation that the transformation envisaged for IT and education in Malaysia necessitates the emergence of a new culture and a paradigm shift in education.

Since the mid-1980s until now, Malaysia has experienced a period of rapid and sustained economic growth which is catapulting the country into an industrialized and urbanized economy. At the same time, keen observers of the Malaysian information technology (IT) scene would agree that something significant is unfolding in the IT arena. Developments have been very rapid in the last few years with signs of impending change abound: increasing expenditure on IT, ready availability of IT products and services in the marketplace, new infrastructure development programs all round and most of all, greater sophistication of ideas flowing from both government and private sector, as exemplified by the latest Multimedia Super Corridor (MSC) Project. Yet, in the opinion of some educators, including the country’s top IT figure, Tengku Mohd. Azzman Shariffadeen, “...there exists, especially in the field of education and training, a high degree of confusion and apprehension about the future potential of IT.” (Tengku, 1991, pp. 2). The situation has somewhat improved since then, as educators and education decision-makers become more IT literate through experiences gained from the various IT projects in Malaysian schools in the last few years. The following is a description of IT development in education institutions in Malaysia, and some future trends in the light of the MSC Project currently underway.

IT Projects in Malaysian Schools

Computer Labs and Computer Literacy Pilot Project

As far back as 1981, schools in Malaysia, especially secondary schools, started setting up computer clubs to teach students computing skills as part of the schools’ extra-curricular activities. Most of these clubs were supported by funding from the Parent-Teacher Associations or fees collected from club members. At the same time, in an attempt to keep abreast of the world-wide computer literacy movement then, the Ministry of Education (MOE) embarked on creating a computer literacy curriculum for schools (Gan, 1992). The Computer Literacy Pilot Project (CLPP) was launched in April 1986 in twenty pilot schools, where Form Four pupils were taught a subject called Computer Literacy. The CLPP was rather abruptly discontinued the following year, much to the disappointment of the computer literacy advocates and the chagrin of many skeptics. The project was aborted due mainly to two reasons. Firstlly, the MOE felt that the project was
duplicating the role of the computer clubs (New Straits Times, April 1987). Secondly, the cost of supplying an adequate number of computers for a nationwide implementation involving about eight thousand schools was a hefty RM 126 million (Computimes/New Straits Times, September 1987).

While it was true that a large-scale computer literacy program would not be feasible without an abundant supply of microcomputers to schools, it was a mistake to think that the clubs could provide a long-term solution to the computer literacy program. This was because computer clubs had limited number of computers and only benefited a small portion of students who could afford to pay a fee to become members. Even though the clubs did familiarize some students and teachers with the PC, in reality, they were not the most efficient nor effective vehicle for the implementation of the computer literacy program nationwide.

**The Computers-In-Education (CIE) Policy**

The quest for a long-term and sustainable program prompted the MOE to set up a joint committee with the Malaysian Institute of Microelectronics Systems (MIMOS) in 1986. A report, the Computers-In-Education (CIE) Policy was subsequently prepared by MIMOS and presented to the MOE in early 1989. To begin with, this report noted that computer literacy was no longer the major issue in education. What was perceived as needed was the wide spread use of computers in the delivery of educational programs across the board as an integral part of the curriculum. The assumption was that with such an approach, computer literacy would be naturally acquired (Computimes/New Straits Times, January 1989).

At the root of the recommendation is the recognition that information and knowledge will increasingly manifest themselves in electronic form, requiring that IT systems be made widely available in schools so that students can become familiar with them and acquire the skills to apply them effectively in their work. By introducing computers into the school curriculum through this means, the process of education would not only introduce new skills. It would also fulfill a pressing obligation of preparing the foundation for the development of an information society, a concept that was later to become the cornerstone of the Vision 2020 Plan.

Thus, by late 1980s, the MOE seemed to have shifted its focus from learning computer literacy or learning about the computers as a subject per se, to the acquisition of computer literacy through learning with the computers. This move was sparked off, to a certain extent, by the CIE Policy mentioned above, that was proposed by the MOE-MIMOS Joint Committee on the Use of Computers in Schools. The specific aim of the policy is to enable the MOE officials to manage information more effectively and subsequently raise the quality of education. In addition, computers would be introduced in schools to enhance the teaching-learning process through the use of specially prepared educational software. Following that, a Learning With Computers Pilot Project, the result of one and a half years of planning by the MOE’s Educational Planning Committee, was launched in April 1989.

Reactions to the CIE policy were somewhat mixed, although a considerable amount of enthusiasm was generated. It was quickly pointed out that a nation-wide implementation of Computer-Assisted Instruction (CAI) in the Malaysian school system as proposed by the CIE Policy needs careful, meticulous, long-range planning (Gan, 1989). Among the many factors that warrant considerations are: the availability of trained educators (especially those knowledgeable in the application of computer technology to curriculum and instruction) to plan and do staff development, including in-service teacher education; and major staff development of CAI taken over by the universities and other teacher training institutions as pre-service education.

**The MOE-MIMOS Projects**

In summary, here are some of the projects/programs that resulted from the MOE-MIMOS joint report. First, the Atom-1 PC compatible which was designed and produced locally was officially launched in December 1990. This project provided for the first time a cost-effective and functional school computer. Encouraged by this breakthrough, the MOE went on to launch its Computer-In-Education (CIE) Pilot Project in July 1992, which introduces a new Computer Literacy syllabus designed to expose Forms one and Two students to computing concepts (Computimes/New Straits Times, March 1992). Each of the sixty project schools in the rural areas were equipped with 20 Atom-1s networked together with a powerful server. The MOE also made the promise that more powerful machines can and will be used in schools when justifiable by functional needs and cost.

At the same time, MIMOS and MOE set up a Computer Technology Laboratory to embark on a joint project to design a software system for use in schools nationwide. A group of education consultants from the various local universities, including this writer, were appointed to work out the blueprint. The objective of the project was to formulate fundamental ideas, concepts and strategies towards effectively integrating computing, including software and telecommunications, as a tool for teaching and learning in Malaysian schools (A Computer-Integrated Learning System, 1990). The education consultants were expected to propose the basic features of an integrated software system that can be used to enhance teaching and learning. Inherent in the concept of such a computer integrated learning system is the belief that using the computer as an integral part of teaching and learning at all levels of school is the most natural way for pupils to acquire computer literacy.

The blueprint of the ComIL system (Computer Integrated Learning System) was completed by mid 1990. After that, a group of computer software consultant engineers and programmers took over and began work on the development of the ComIL System. In its present form this system has basic tools and functions for generating educational materials for teaching and learning. It is believed that such a system is essential to draw the vast pool of talent in education to actively participate in creating local courseware. In the past, the lack of
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