

LEGCO PANEL ON EDUCATION

Information Technology in Education – Way Forward

Purpose

This paper seeks Members' views on the way forward for information technology (IT) in education.

Background

2. In 1998, the Government announced "*Information Technology for Learning in a New Era: Five-year Strategy – 1998/99 to 2002/03*". The key missions under the Strategy were –

- (a) to help teachers to become facilitators for student learning, as well as comfortable and habitual IT users as soon as possible;
- (b) to incorporate IT elements in the school curriculum and to enhance the provision of education software to support learning and teaching;
- (c) to progressively enhance the provision of IT facilities for schools and work with them to overcome constraints; and
- (d) to build up network infrastructure to facilitate sharing of education resources and communication among schools, teachers, students and parents.

3. Five years down the road, the Strategy has brought about tremendous change to the education scene in Hong Kong. The Government has reviewed the progress made under the Strategy and outlined a road map for the future. In crafting the way forward, the Government continues to uphold that IT is a tool to help learning and teaching. We have to ride on

our strengths, and continue to unleash the potential of IT in support of the Education Reform, particularly in enhancing the effectiveness of learning and teaching. In doing so, we will help equip our younger generation to face up to the challenge of an increasingly knowledge-based and competitive world of tomorrow.

Present position

4. With the implementation of the Five-year Strategy on IT in education, we have laid the necessary infrastructure, provided teachers with basic training on the use of IT, and collected a rich repository of digital education resources. Regional centres of IT excellence have emerged, innovative pedagogies and practices have surfaced, and students' generic IT skills have improved. The following is a brief account of where we stand under the four key components of the Strategy.

Access and connectivity

5. A survey conducted early this year found that on average, each primary school now has 91 computers while secondary school has 247. These are well above the original targets of 40 in primary schools and 82 in secondary schools now in the Five-year Strategy. All schools have broadband connection to the Internet, with over 60% of them having fibre access and enjoying 10 to 100 Mbps bandwidth.

Teacher enablement

6. At the end of August 2003, all teachers (about 50,600 including 4,600 teaching assistants) have completed IT training at the Basic Level, 35,600 (77%) teachers at Intermediate Level, 12,500 (27%) teachers at Upper Intermediate Level and 2,600 (6%) teachers at Advanced Level. The Education and Manpower Bureau (EMB) provided refresher training courses, seminars and workshops to keep teachers abreast of IT developments. The Hong Kong Education City (HKEdCity), an education portal set up by the Quality Education Fund and subvented by the Government, has also organized various activities to promote IT solutions to schools.

Curriculum and resource support

7. In 2000, the *Information Technology Learning Targets* were issued by the Curriculum Development Council (CDC), paving the way for the integration of IT into the curriculum. To support primary schools in implementing the learning targets, a computer awareness programme comprising eight learning modules was developed. The curriculum reform document “*Learning to Learn – The Way Forward in Curriculum Development*” published by the CDC in 2001 reinforced the role of IT as a tool to support the reform measures. The “*Basic Education Curriculum Guide – Building on Strengths*” published by the CDC in 2002 provides, among others, guidance to schools on fostering an appropriate environment for interactive learning with IT, and making appropriate use of IT in teaching various subjects.

8. As Hong Kong’s market for education software was then at an early stage, EMB assumed the dual role of forerunner and facilitator in the production of curriculum resources in the past five years. The education software developed by EMB helped the private sector and other parties understand the needs of schools. In just a few years, schools, teachers, tertiary institutions, the private sector and non-government organizations (NGOs) have produced a remarkable volume of curriculum resources and materials. Many are available for sharing online and at physical resource centres.

9. The HKEdCity was launched in August 2000 to serve and promote quality education and IT for lifelong and life-wide learning. It quickly became one of the most popular education portals in Hong Kong, offering rich learning resources and education contents, facilitating learning communities and organizing promotional activities. The HKEdCity was corporatized in 2002 and continues to receive support from the Government to develop into an e-learning and e-business platform for teachers, parents and students.

Community participation

10. Expositions, activities and competitions have been held to promote the use of IT in education. Programmes have also been held in collaboration with schools, professional bodies and private companies.

Evaluation

11. In 2001, the University of Hong Kong was commissioned to review, on an interim basis, the effectiveness of the Five-year Strategy. The review confirmed the effectiveness of hardware provision to schools, but pointed out that there was still room for improvement in teacher enablement, especially in the integration of IT in learning and teaching.

12. When the Five-year Strategy was about to finish, the Hong Kong Polytechnic University was commissioned to review the overall progress made under the Strategy. In particular, the study examines the readiness of schools, teachers and students to use IT for enhancing the effectiveness of learning and teaching. It will also identify areas requiring attention. The study will be substantially completed by mid-2004 and will provide pointers to fine-tune the next IT in education strategy and its implementation plan.

Next Strategy

13. The Five-year Strategy has successfully provided the necessary infrastructure for IT in education to take off. Building upon the current strengths, the Government issued a consultation document entitled *“Information Technology in Education – Way Forward”* on 16 March 2004 for a two-month consultation (the document was issued to Members through the Legislative Council Secretariat on 22 March 2004). The strategy proposed in the document focuses on the following –

- (a) using IT as a lever to support and advance the Education Reform initiatives;
- (b) fostering the development of leadership capacities in schools to develop holistic and strategic school plans for making effective use of IT to realize schools’ vision and goals;
- (c) better integration of IT into the curriculum as well as the learning and teaching processes;
- (d) defining information literacy levels to set targets for students to develop IT skills and use them for learning and communication;
and

- (e) building partnership among various stakeholders to undertake initiatives, and pooling efforts, funding and expertise from various parties to sustain the momentum.

14. Riding on the abovementioned foci, the document proposes six goals for the next IT in education strategy –

Goal 1: Empowering Learners with IT – Students will acquire the necessary skills, knowledge and attitudes for lifelong learning and creative problem solving in the information age. They will use IT as an information retrieval, knowledge enquiry, communication, collaboration, analytical and personal development tool.

Goal 2: Empowering Teachers with IT – Teachers will be provided with professional development opportunities and support to undertake the challenge of using IT for curriculum and pedagogical innovations, and to facilitate, guide, administer and assess learning in ways that align with the goals of the curriculum reform. Support structures and mechanisms will be developed to foster the development of online and off-line communities of practice for teachers for exchanging experience and good practices as well as collaborative problem solving.

Goal 3: Enhancing the Leadership Capacity of Schools for the Knowledge Age – School heads and their associates will be guided and supported to establish visions and goals as well as build teams appropriate for their school contexts, in order to enable them to effectively lead change in integrating technology into school planning, curricula, learning and teaching processes, communication and collaboration. They will be given more flexibility in making decisions that tailor to the needs of their schools.

Goal 4: Digital Resources for Learning – Digital resources will be continually enriched to meet school needs. Research on knowledge management strategies will be conducted to enable resources and curriculum experiences generated from various sources, local and international, to become more easily shared, updated, retrieved, customized and utilized.

Goal 5: Sharing and Continuing Professional Development – Evaluation and research will be conducted by practitioners and experts to identify effective strategies for IT in education and distill the elements of successful pedagogies. Exemplars will be more widely shared among teachers. Research will also be conducted to establish effective models of professional development such that the process will not only help teachers gain knowledge and skills, but will also provide a structure and support for continuous improvement in the application of IT in education in schools.

Goal 6: Community-wide Support and Community Building – The community, in particular parents, will be involved and encouraged to motivate children towards appropriate use of IT and drive home messages on cyber ethics.

Implementation Measures

15. As proposed in the consultation document, the above goals will be supported by a set of implementation measures. Briefly, these measures include the following –

- (a) a broad framework of “information literacy” for students to be developed to help teachers and students have a clearer picture on the learning targets of using IT in education, and teachers are to be provided with assessment tools;
- (b) teachers and school heads’ professional development to be strengthened and refocused to further the engagement of IT in the teaching and school planning processes;
- (c) e-learning to be promoted as a means to breakthrough the physical barriers of classroom learning at set times;
- (d) basic support for schools in areas of maintenance, technical support, and extension of computer facilities opening hours to cater for students in need to continue;
- (e) various IT grants now being disbursed to schools to be merged to enhance their flexibility and scope for use;

- (f) partnership schemes involving the private sector to be conjured up to facilitate collaboration, especially in training and education software development; and
- (g) obsolete IT equipment that no longer support today's needs for learning and teaching to be upgraded or replaced.

We propose that subject to resources available, these measures should be implemented by phases over a period of three years.

Consultation

16. The framework of the next IT in education strategy as contained in the consultation document was formulated following many rounds of informal consultation with the school sector, parents and the private sector. It has also taken account of the views of the Education Commission, the Committee on Home-School Cooperation and the Curriculum Development Council. To facilitate the education sector as well as the public to have a better understanding of the proposals in the relevant consultation document, and to provide an interactive platform to exchange views, five public consultation sessions have been organized from March to April 2004. It is planned that the proposed strategy will be finalized by July 2004 for phased implementation starting the 2004/05 school year.

Advice Sought

17. Members are invited to comment on the next IT in education strategy as set out in the consultation document.

Education and Manpower Bureau
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