

IT in Education

Empowering Learning and Teaching with
Information Technology

資訊科技教育

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Education and Manpower Bureau
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Foreword

In 1998, the Government announced “Information Technology for Learning in a New Era: Five-year Strategy – 1998/99 to 2002/03”. The Five-year Strategy signifies the Government’s commitment to driving Hong Kong to become a leader, not follower, in the information world of tomorrow.

The Five-year Strategy heralds the beginning of our efforts to integrate information technology (IT) into learning and teaching. The quintessence of the Strategy is to transform school education from a largely teacher-centred approach to a more interactive and learner-centred approach. This “paradigm shift” is also being promoted under the Curriculum Reform. Five years on, we have seen tremendous changes to schools as a learning institution; all schools are connected to the Internet; teachers have acquired at least basic skills and embraced IT as a teaching tool; students are using IT and the Internet in project-based learning.

In March 2004, we issued a document “Information Technology in Education – Way Forward”, which outlined our proposals on the next IT in education strategy, for a two-month public consultation. Apart from views received at five consultation sessions and through the media, a total of 58 written submissions have been received. Feedback on our proposals from the stakeholders concerned is positive on the whole. The key stakeholders generally agree with the main direction to further embed IT in learning and teaching. They are also supportive of our strategic goals under the next strategy. Together with the findings and recommendations of the “Overall Study on Reviewing the Progress and Evaluating the Information Technology in Education Projects 1998/2003” (the Overall Study) conducted by a local tertiary institution, we have refined our proposals and set out the final strategy in this policy document.

The new IT in education strategy will ride on what we have achieved and be implemented starting from the 2004/05 school year. The focus in the coming years will be on the further integration of IT into the learning and teaching process. The strategy is a student-centred one and we look forward to enhancing community-wide support for a sustainable development of IT in education.

We would like to take this opportunity to thank all those who have put forward their views and suggestions; in particular, Members of the Steering Committee on Strategic Development of Information Technology in Education who have made valuable contributions to the formulation of the strategy.

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SECTION 1

RETROSPECT OF THE FIVE-YEAR STRATEGY

The past five years saw the introduction of IT in education in Hong Kong. With the concerted efforts of schools, teachers, tertiary institutions, the private sector and other relevant organizations, we have begun to reap harvest.

What Have We Achieved?

2. We have laid the necessary infrastructure, provided teachers with the 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.

Access and connectivity

3. A survey conducted in early 2004 found that on average, each primary school had 91 computers while secondary school had 247. These are well above the original targets of 40 in primary schools and 82 in secondary schools under the Five-year Strategy. All schools now have broadband connection to the Internet, with over 60% of them having fibre access and enjoying 10 to 100 Mbps bandwidth.

4. Based on survey findings of the Overall Study, the average student-computer ratio is 7.4, 4.6 and 2.0 for the primary, secondary and special school sectors respectively. With connectivity in schools greatly improved, over 95% of the surveyed schools have developed school websites and over 60% with intranet or learning management system.

5. Hong Kong has a high household personal computer and Internet penetration rate. According to a survey of the Census and Statistics Department conducted in mid-2003, 91.3% of students aged 10 or over had computer at home. Of these students, 92.6% had their computers connected to the Internet. To cater for students who have limited access to computers after school, an incentive grant has been provided for over 1,000 public sector schools to extend the opening hours of their computer facilities for use by needy students.

Teacher enablement

6. The Five-year Strategy recognized the important role of teachers as the enablers of IT in education. By the end of the last (2002/03) school year, all teachers (about 50,600 including 4,600 teaching assistants) had 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 in Hong Kong, has also organized various activities to promote IT solutions to schools. The Overall Study revealed that IT was commonly used amongst school heads and teachers for teaching, administration and searching information. More than half of the surveyed primary, secondary and special school teachers considered themselves proficient in applying /integrating IT into subject curriculum.

7. Under the Five-year Strategy, collaboration among schools was strongly fostered through a territory-wide network of “Centres of Excellence on IT in Education” (CoE) comprising some 20 schools in various districts. The CoE advised schools on the establishment of systems and networks, teacher training and promotion of IT activities, ways to integrate IT into curriculum and so on. It was also an effective network to pilot new technology and pedagogy using IT.

Curriculum

8. 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 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.

9. The Overall Study reported a high percentage of schools using IT in learning and teaching across all Key Learning Areas except Physical Education. However, it also reported that the pedagogical usage of IT in classroom remained largely teacher-centred.

Resources

10. Five to six years ago, Hong Kong's market for education software was still not active and product choice was limited. Therefore under the Five-year Strategy, EMB assumed the dual role of a forerunner and facilitator in the production of curriculum resources. The education software developed by EMB helped the private sector and the parties concerned to understand the needs of schools. Nowadays, schools, teachers, tertiary institutions, the private sector and non-government organizations (NGOs) have produced over 20,000 digital curriculum resources and materials catering for schools' needs. Many are available for sharing online and at physical resource centres.

11. Supported by the Quality Education Fund, 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

12. Hundreds of activities including expositions, competitions, awards, training for students and teachers and so on 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.

Studies on pedagogical practices and effectiveness of the strategy

13. Various studies have been conducted to evaluate the pedagogical and other impact of IT in education. For example, the Report of Second International Information Technology in Education Study Module 2 (SITES M2) published in July 2003 by the Centre for Information Technology in School and

Teacher Education (CITE) of the University of Hong Kong confirmed our success in infrastructure and training, and pointed to the need for more development in pedagogical practices. The “Overall Study on Reviewing the Progress and Evaluating the Information Technology in Education Projects 1998/2003” conducted by the Hong Kong Polytechnic University in 2002-04 indicated that a lot of surveyed teachers perceived IT as a way to make lessons more interesting or attract students’ attention. The majority of the teachers surveyed rated themselves as confident, comfortable and competent in adopting IT in learning/teaching. Classroom visits had revealed the use of IT to various extents ranging from presentation of materials, illustration of abstract ideas for enhancing students’ understanding to interactive classroom practices.

✍ What Have Proved Working?

14. Empirical experiences of teachers, research as well as evaluations conducted have together provided guidance on the effective application of IT in education. A number of general principles are evident –

- (a) to ensure success in using IT in education, clear leadership and directions from the Government are important. The Government can help build the necessary culture for the use of IT in education, lead and organize promotion activities, and provide resources;
- (b) at the school level, the success of applying IT in education lies mainly with the support of school heads as visionary leaders and agents for change, and teachers as practitioners of appropriate pedagogies. Multi-level leadership in school is crucial for the success of IT in education;
- (c) in respect of teachers, the concept of “paradigm shift” must be well understood and well used. Through the use of IT, the learning and teaching processes should be restructured and made more “student-focused”; and
- (d) in view of the diversity in schools’ IT readiness, school-based flexibility in the implementation of IT plans is a key to success.

15. From empirical evidence and feedback of teachers, there is a general consensus that IT can be applied effectively in learning and teaching, e.g. –

- (a) IT can be a useful tool for students to explore and collect information, and link up with the others globally;
- (b) IT can assist teachers in preparing assessment and tests;
- (c) IT can facilitate communication among schools, teachers, parents and students;
- (d) multimedia learning resources can help explain abstract phenomena and arouse students' interest to learn; and
- (e) where the teachers have a clear focus on valuing student-centred, inquiry oriented learning and the use of IT as a means to curriculum innovation, exciting pedagogical practices can emerge.

Barriers

16. Having regard to the findings of studies on the implementation of the Five-year Strategy as well as feedback from schools and teachers on IT in education, the following major obstacles affecting the use of IT in learning and teaching have been identified –

Schools

- (a) Vision and leadership
 - use of IT for the promotion of curriculum and pedagogical innovation are crucial yet have not been widespread; and
 - appropriate professional development and support are lacking.
- (b) Perceptions of school heads and teachers about the impact of IT
 - the impact of IT as reported by teachers has been much less favourable than the perceptions of the school heads; and
 - school heads tend to underestimate the negative consequences of IT for teachers such as causing stress or creating extra pressure on time.
- (c) IT hardware
 - some schools consider that IT hardware is still insufficient;
 - most consider that hardware acquired some four to five years ago when the Five-year Strategy commenced can no longer support

- today's teaching needs, and strategies for infrastructure renewal and funding such renewal need to be developed/acquired; and
 - schools are still in need of support in handling procurement, management and maintenance of computers and networks.
- (d) Location of computers
- the majority of computers are located in special rooms rather than in classrooms which may affect teachers' integrated use of IT.
- (e) Educational software or resources
- some digital resources, including those produced by private firms, do not meet the needs of teachers;
 - as some teachers find it difficult to identify and select resources, better indexing of resources is needed;
 - teachers are concerned about the possibility of self-made teaching materials being misused for commercial gains when being posted on the web; and
 - some are concerned that the intellectual property rights of some self-made materials have not been fully cleared for more open and wider disclosure.
- (f) Curriculum
- schools are still in need of support in the use of IT across the curriculum.
- (g) Communication between parents and schools
- some parents have expressed that the lack of appropriate technical knowledge is reason for not browsing schools' homepages; and
 - some parents have insufficient time to participate in IT courses organised by their children's schools.
- (h) Collaboration amongst schools in Hong Kong and elsewhere
- there is a general lack of sharing and collaboration on the use of IT in learning and teaching amongst schools.

Teachers

- (i) Paradigms
- increased use of IT in teaching requires the re-engineering of classroom management and routines, as teachers need to tackle

the interaction between machines and students while striving for results;

- teachers' mindset is still that 'adequate resources' means one computer per student, when good pedagogical use of IT suggests that small groups of students sharing a computer is a good way to facilitate student-centred learning;
- teachers' conceptions of teaching is very much teacher-centred rather than facilitating students to learn; and
- very few of the teachers surveyed have participated in research on school-based initiatives despite indications that such research is one of the most effective ways of bringing out change in teachers' paradigms.

(j) Application of IT in curriculum

- while all teachers have been provided with basic training in the use of IT, many are still not familiar with the application of IT to enhance the effectiveness of learning and teaching;
- teachers lack 'know-how' and skills to apply IT in curricula and should be better equipped with the instructional aspects of IT; and
- some teachers have reported difficulties in making use of specific, pedagogically sound software/learning platforms in their classes due to inflexible network and management infrastructure in schools.

(k) Professional development

- some training courses provided have been skewed towards training in IT skills, not the application of IT to enhance learning and teaching; and
- many of the best digital learning resources are cognitive tools developed on the basis of significant cognitive and pedagogical research which cannot be easily appreciated or adopted by teachers without having undergone appropriate professional development.

(l) Perception on students' home ownership of computers

- some schools resorted to the lack of computers at home as a reason for not assigning out-of-school IT-related tasks whereas findings have revealed that students have more hands-on opportunities to access computers at home than they do at school and digital divide may be more apparent than real.

Students

- (m) Cost of software and hardware
 - The cost of software and hardware may still be prohibitively high for some students.

✍ Opportunities

17. If rightly used, IT can be a powerful tool to propel change. As various Education Reform measures steam ahead, the opportunities on the use of IT lie in the following –

- (a) supporting the Curriculum Reform and related changes, including the provision of easily accessible curriculum resources. Indeed the use of IT for interactive learning is one of the Four Key Tasks of the Curriculum Reform (CDC, 2001);
- (b) supporting the initiatives in the Action Plan to Raise Language Standards in Hong Kong (Standing Committee on Language Education and Research, 2003), such as providing learning and teaching software and creating an environment for students to learn and practise languages;
- (c) assisting the assessment of student learning outcomes, including school-based assessment and the Basic Competency Assessment;
- (d) facilitating communication and collaboration between school and the wider community via school networks; in particular, providing parents with more education and encouraging their active participation in schools' activities;
- (e) supporting the continuing professional development of school principals and teachers; for example, resource management (IT budget allocations), use of online learning platforms and self-learning packages, training on effective pedagogical use of IT for promoting students' enquiry-based learning, and conduct of school-based action research (including evaluation of students' learning outcomes);

- (f) increasing computer access for students' sharing in classrooms to enforce collaborative work;
- (g) encouraging students' use of home computers to enhance the effectiveness of IT on students' learning;
- (h) breaking up the physical barriers of classroom learning at set times and achieving lifelong development through e-learning;
- (i) enhancing resource development through the HKEdCity;
- (j) increasing the participation/collaboration/support from professional bodies, industry and trade associations, and NGOs;
- (k) nurturing a global outlook amongst students and the teaching force by connecting with the education communities in other parts of the world, and enhancing exchange and collaboration; and
- (l) facilitating the sharing of good practices in curriculum and pedagogical changes and the establishment of networks of practitioner researchers to encourage innovation and reflection on practices; and supporting the formation of communities of practice among teachers and principals using the Internet.

Review of Five-year Strategy

18. Two studies^{*} have been commissioned for reviewing the progress and achievements made under the Five-year Strategy as well as recommending a way forward on IT in education. While the studies have identified areas requiring attention to the implementation of IT in education, they have shed light on opportunities to be explored. Findings of the studies have also provided pointers for fine-tuning the implementation measures of the next IT in education strategy.

* 1. "Preliminary Study on Reviewing the Progress and Evaluating the Information Technology in Education Projects (December 2000 – August 2001)" conducted by the University of Hong Kong in 2000-01.
2. The "Overall Study on Reviewing the Progress and Evaluating the Information Technology in Education Projects 1998/2003" conducted by the Hong Kong Polytechnic University in 2002-04.

SECTION 2

VISION FOR THE FUTURE

✍ **What Do We Want from IT?**

19. We envision the schools and classrooms of tomorrow from where we are today. Our vision on the use of IT may be epitomized as follows –

Students, teachers, schools and other stakeholders will use IT effectively as a tool for enhancing the effectiveness of learning and teaching, with a view to preparing our students for the information age, turning schools into dynamic and interactive learning institutions, and fostering collaboration among schools, parents and the community.

✍ **The Next Strategy**

20. The Five-year Strategy has successfully provided the necessary infrastructure for IT in education to take off. Building upon the current strengths and having regard to the barriers identified, the next strategy will focus 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 plan for making effective uses of IT to realize the school's vision and goals;
- (c) further 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.

21. Having regard to the above vision, the potential of IT in education and the barriers, as well as the views of experts, academics, school heads, teachers, students, parents, professional bodies, NGOs and the private sectors collected throughout the implementation of the Five-year Strategy, we have set the following seven strategic goals –

- **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 to exchange experience and good practices, collaborate in curriculum and pedagogical innovations, as well as undertake action-oriented research.
- **Goal 3: Enhancing School Leadership 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 IT into school planning, curricula, learning and teaching processes, communication and collaboration. They will be given more flexibility in making decisions that tailor to the IT needs of their schools.
- **Goal 4: Enriching Digital Resources for Learning** – Digital resources will be continually enriched to meet school needs. Research on knowledge management strategies will be conducted to enable digital resources and curriculum experiences generated from various sources, local and international, to become more easily shared, updated, retrieved, customized and utilized.
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- **Goal 5: Improving IT Infrastructure and Pioneering Pedagogy Using IT** – We will help schools to upgrade and replace obsolete hardware and migrate where appropriate to wireless systems. We will encourage innovation and trials of new information technologies to enhance learning and teaching.
- **Goal 6: Providing Continuous Research and Development** – We will conduct research on the effectiveness of the IT in education strategy and the impact of IT on students' learning outcomes. We will explore the possibility of setting up a Hong Kong based research centre to pioneer leading edge IT applications in support of proven educational precepts and to come up with creative means of applying IT in pedagogy, learning and teaching and other education purposes.
- **Goal 7: Promoting Community-wide Support and Community Building** – We will enhance partnership with the IT industry on teacher training, digital resources and other related fields. We will involve the community, in particular parents, and encourage them to motivate children towards the appropriate use of IT and drive home messages on cyber ethics. Communication between schools and parents will be enhanced through the use of IT and measures to address the digital divide will continue.

SECTION 3: PLANS TO ACHIEVE STRATEGIC GOALS

22. The plans for achieving our strategic goals are outlined below.

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.

Curriculum – Clear Learning Targets Needed

23. The CDC has made significant headway in conceptualizing and embedding IT in the curriculum guides. IT for Interactive Learning is one of the Four Key Tasks, and IT skills are one of the nine sets of generic skills. Subject guidelines have been published and they are sprinkled with examples on the use of IT. Nonetheless, many schools have expressed the wish to have more support and practical guidance.

24. As the next step, schools and teachers will be guided further on integration of IT into learning and teaching inside/outside classrooms, with a view to cultivating the skills, knowledge and attitudes of students for lifelong learning. Students should be given the opportunity to make use of IT to work collaboratively with peers as well as to identify and seek input and advice from people of different sectors in the community (local and international). This can be achieved through the following –

- (a) A broad framework of “Information Literacy” for students will be developed to help teachers and students have a clearer picture on the learning targets of using IT in education. The term “Information Literacy” generally refers to the following domains of learning outcomes –
 - basic operations and concepts of IT, including when to use what tools and when not to use;
 - social and ethical issues relating to the use of IT;

- use of IT as a productivity tool, a communication tool, a collaboration tool, a research tool and a decision-making tool;
- strategies and skills for information retrieval and critical evaluation of different information sources;
- use of IT tools for information management and data analysis; and
- knowledge management concepts and practices to support sustained work and collaboration.

The “Information Technology Learning Targets” published by the CDC in 2000 will be used as a starting point for formulating the framework of “Information Literacy” in the light of experiences gathered. Due regard will be paid to the planned changes in the academic structure of senior secondary forms which are being deliberated.

- (b) Based on successful local cases of using IT in learning and teaching, guidance will be provided to schools on the application of IT in developing whole-school curricula. Such guidance will include both exemplary and suggested use of IT for learning and teaching in various subjects, and will be drawn up in consultation with teachers and experts.
- (c) Interactive tool kits (e.g. using online learning platform) will be produced for schools and teachers on the practical ways of using IT for project-based and collaborative learning as well as for other cross-curricular activities.

Assessment Tools – Help Teachers Know Students’ Learning Outcomes

25. To help teachers assess students’ attainment on the learning targets outlined under the Information Literacy framework, we will develop appropriate assessment tools for use by teachers. Such assessment will be performance-based and fully integrated with an IT-enriched pedagogy that focuses on learner empowerment. The assessment will also provide teachers with formative evaluation information on the IT-enriched pedagogy employed.

26. Schools may adopt those assessment tools that are deemed appropriate for them. Schools' efforts in this regard will be reflected in the context of "whole school development" under the Quality Assurance framework.

27. With the adoption of this outcome-based approach, it is considered no longer necessary to require at least 25% of the curriculum to be taught with the support of IT as stated in the Five-year Strategy. In this way we are putting the focus rightly back on students, not the amount of time teaching with IT.

Curriculum and Learning Materials – Going Beyond Textbooks

28. We will encourage schools to extend the spectrum of learning materials for their students in step with the policy of school-based curriculum. Students should go beyond textbooks to find resources to help them understand concepts, acquire knowledge, and observe and explore the world outside schools. We will enhance partnership with NGOs, the private sector and overseas communities on programmes to promote the use of IT in learning among students and to cultivate students' global perspective.

29. To enable students to engage in empowering modes of learning which include collaboration, inquiry and production of knowledge products as key features anytime, anywhere, the provision of suitably designed e-learning platforms that will support such learning activities would be essential. We will support research and evaluation on pedagogically appropriate e-learning platforms, help set up such platforms in schools, provide teacher training, and enhance courseware.

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 to exchange experience and good practices, collaborate in curriculum and pedagogical innovations, as well as undertake action-oriented research.

30. Teachers are one of the key players in providing the environment for learning and driving reforms. Numerous sharing sessions, training, seminars and courses have been organized since the inception of the Five-year Strategy. We have three key observations –

- (a) experienced teachers have emerged and they are in a position to share their experiences with others;
- (b) training courses provided under the Five-year Strategy were mostly skewed towards the training of generic IT skills. Teachers wish to know more about how to apply IT in the learning and teaching of different key learning areas (KLAs), or even subjects; and
- (c) after receiving training, teachers still need to overcome further hurdles in implementing new teaching approaches using IT in the classroom. New models of professional development should be developed to build in mechanisms that will encourage and support the new teaching approaches.

31. The following will help support teachers' continuing professional development in the use of IT for learning and teaching –

- (a) *Revamping the existing training framework on the use of IT in education* – the existing training framework was drawn up in 1999, a time when Hong Kong was starting to use IT in education on a large-scale. The framework will need to be revamped and updated having regard to the experiences gathered and studies conducted. The focus of training will be on ways to facilitate exploratory learning, guide collaborative enquiries, provide learning resources, administer learning tasks, tailor teaching to students' varied abilities and conduct assessment. The revamped framework should seek integration into the Continuing Professional Development Framework for teachers developed by the Advisory Committee on Teacher Education and Qualifications.
- (b) *Supporting KLA or subject-based training and professional development courses* – tertiary institutions, qualified private firms, professional bodies and experienced teachers will be brought together to develop quality KLA or subject-based training in the

context of continuing professional development for teachers. A course evaluation mechanism will be put in place. Teachers' feedback on the usefulness of the courses, quality of the training materials, pedagogies of the trainers will be collated and evaluation results will be used to improve future courses to be provided.

- (c) *Continuing and enhancing the “train the trainers” scheme* – this will bring the state of the art technology to teachers, riding on the innovation and strengths of the private sector.
- (d) *Introducing a voluntary certification system by IT organizations and subject associations* - A voluntary certification system will be set up to recognize competencies and commitment of teachers who have received training. The system should provide extra, and higher, recognition for the provision of evidence and examples of how the training has led to pedagogical changes in the classroom. A “certification ladder” may be established with the assistance of IT organizations as well as subject associations to encourage continuing professional development of teachers.
- (e) *Developing more online training for teachers* – we will develop, through HKEdCity, an online training platform and more instructional software for teachers. This will offer greater flexibility in training scheduling and cater for individual learning differences. The HKEdCity will also set up mutually supportive teacher communities to undertake and share pedagogical innovations, through online and face-to-face contacts.
- (f) *Continuing the sharing and collaboration among teachers* – exemplars emerged and software that are proven to be effective in enhancing learning and teaching will be recognized and disseminated. Sharing will be enhanced in terms of scale, frequency and depth. We will jointly organize with tertiary educators, the private sector and the school sector, flagship conferences on IT in education to enhance sharing of information and dissemination of good practices. Incentive schemes will also be conceived to encourage collaboration amongst schools and relevant organizations in harnessing IT in learning and teaching.

32. EMB will no longer organize training on generic IT skills, as virtually all teachers have acquired the basic skills and such courses are abundant in the market. But we will support schools' initiatives to train teachers on generic skills on a need basis by enlarging the scope of use of the IT grants to schools for this purpose.

33. In view of the importance schools generally attach to the coordination of IT across the curriculum, schools will be given the flexibility to allow teachers responsible for such coordination work to have an equal claim for promotion in recognition of the key role they play in supporting the implementation of IT in education.

34. We will transform at least two of the existing "Centres of Excellence" to become "Learning Centres" that aims to facilitate teachers to develop, share and disseminate innovative learning and teaching methods using the latest information technologies.

Goal 3: *Enhancing School Leadership 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 IT into school planning, curricula, learning and teaching processes, communication and collaboration. They will be given more flexibility in making decisions that tailor to the IT needs of their schools.

35. From cases of successful application of IT for learning and teaching in Hong Kong, it is evident that school head's guidance and support is key to enabling teachers to explore and apply the use of IT in classrooms. In some cases, teachers took a "piloting" method to refine IT-enriched pedagogies. Such pedagogies would not emerge without the support of school heads.

Building Leadership Capacities for Using IT as Lever for Curriculum Innovation

36. The school leadership team needs to understand that the most important use of IT in the school curriculum should focus on supporting the Curriculum Reform and that IT can be used as a lever for innovation. We

will enhance training on e-leadership and application of IT in education in continuing professional development courses for school heads.

37. Professional development will be provided to school heads and their associates to help them understand the different dimensions of a school policy and strategy (including IT infrastructure, curriculum goals for IT use, staffing policy, staff appraisal and reward policy) that will affect the implementation of IT in the school curriculum. The professional development will provide a structure and mechanism that will encourage and support schools in establishing their own vision, goals and strategies as well as leadership teams for IT development in schools. It is necessary to incorporate training materials on the application of IT in education into continuing professional development courses for school heads and their associates. The following areas may be included –

- (a) skills and practical advice on leading changes to use IT appropriately in schools for learning and teaching;
- (b) use of IT to enhance the efficiency of school administration;
- (c) use of IT for school-based assessment; and
- (d) use of IT as a communication tool with parents, students and other relevant parties.

38. We will pilot dedicated IT leadership training for school principals to build knowledge, skills and understanding of key issues and impact of learning and teaching with IT. Depending on the result of the pilot, such training can be held on an on-going basis to benefit more school principals. The HKEdCity will set up online communities as an eplatform to support principal's IT training and sustain the momentum of such training.

39. Seeking better ways to lead IT-supported curriculum innovation and embedding IT as a lever for change in the school strategic development plan should be a key element in the professional development agenda for school heads. A voluntary certification system will be set up to recognize competencies and commitment of school heads and their associates who have undertaken professional development and action learning on e-leadership. We will also work on the integration of such training with the professional

development ladder for school heads with the assistance of appropriate professional/academic organizations.

Providing Flexibility

40. Schools will be given the flexibility to allocate resources to support school-based IT plans and account for results. To enhance such flexibility, we will continue with the disbursement of IT grants to schools but such grants will be merged and constraints on the use of the grants will be reduced in order to enhance schools' flexibility in using the resources.

41. Following the merging of various IT grants, schools will have much greater autonomy and flexibility to use the grants for –

- (a) employment of technical staff and support services;
- (b) purchase of new software, maintenance or replacement of hardware;
- (c) provision of IT training to teachers; and
- (d) piloting new information technologies or organizing IT activities.

Schools will also be encouraged to seek funding support from parents and other parties to support school-based IT in education initiatives.

Providing Support

42. With the greater autonomy given, schools will need to have the capacity and procedures to plan, manage and review the use of IT. We will strengthen the role of the regional Centres of Excellence network in supporting schools on pedagogical and technical issues. They will assist schools to review and continue to strengthen the capacity of the team of teachers responsible for planning and implementation of IT in schools.

43. We will support schools by providing exemplars, guidance notes and practical advice on various topics, such as using IT for school administration and management. The IT industry will be encouraged to

provide guidance and advice to schools on the recruitment of suitable technical staff.

Facilitating Schools' Self-Evaluation

44. We will request and assist schools to formulate school-based IT plans and to put in place a self-evaluation system on the effectiveness of such plans. In this regard, a framework for benchmarking of performance and processes will be considered. The framework will help school heads and the school management work for results by providing an accountability regime.

45. To assist schools in evaluating their own performance in the application of IT in education, we will disseminate the assessment tools developed under the Overall Study for wide adoption in schools for self-evaluation.

Facilitating Schools' Partnership

46. We will encourage and facilitate schools to form partnership with other schools and the private sector, with a view to exploring efficient ways of utilizing resources, enhancing teacher training and promoting students learning with IT. In this regard, an experience and knowledge sharing platform will be established.

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

47. Although many digital education resources have been developed, quality digital education resources are still considered insufficient and sometimes resources produced do not meet schools' needs. Retrieving the resources is another problem. The potential of schools, teachers, tertiary institutions and the private sector to produce quality resources has yet to be fully tapped.

Bringing Resources Closer to Schools' Needs

48. Digital education resources can be enriched through contribution from tertiary institutions, the private sector, schools and teachers. In this connection, the HKEdCity will provide effective channels for resource developers and institutions to understand schools' needs, and for schools to know products and services available in the market. It will, in consultation with the CDC, incrementally assume the role of a market facilitator to enhance public-private collaboration in the production and adaptation of digital resource materials.

49. The HKEdCity will strengthen its role as an agent for sourcing, editing and disseminating digital education resources. To achieve this, the HKEdCity will seek the support of serving teachers and experts. It will also seek to form partnership with the private sector as regards e-learning contents and introduce new IT-enriched pedagogies.

50. We will launch incentive schemes to encourage publishers to turn textbooks into e-learning materials and provide teachers with supplementary after-sale service in the use of such materials. We will also consider incentive schemes to encourage the private sector to develop quality digital instructional content and software. On top of these, the HKEdCity will enhance its production of digital resource materials, as well as licensing and adapting the contents of quality overseas e-learning material for local use.

51. Different parties are producing digital education materials e.g. private developers, schools, tertiary institutions and EMB. There has been some overlapping of the products produced and better coordination is necessary. The HKEdCity will be tasked to undertake market survey and research with a view to better understanding schools' use of and demand for digital education resources. The HKEdCity will monitor and survey from time to time the demand for the digital education resources put onto its repository and the overall supply in the market.

52. The HKEdCity will improve its digital resource repository by constantly improving the indexing of its resources and incorporating evaluations of such resources by professional bodies. Users, experts or teachers are encouraged to review software and rank, where appropriate, materials on the HKEdCity as regards their quality for users' reference. We

will enhance sharing and retrieving of exemplars by interactive platform, sharing sessions and seminars, and posting such exemplars in various resource banks.

53. We will pilot an “electronic learning credits” scheme whereby schools will be given funding to acquire relevant electronic and interactive learning materials as well as curriculum specific computer peripherals to enhance learning and teaching. The HKEdCity will expedite the development of its platform to provide for e-transactions on e-learning materials.

Addressing Diversity

54. In spite of the completion of the Five-year Strategy, the IT readiness of the schools in Hong Kong still varies. Some schools are stronger in the application of IT than the others. We will direct more resources to support “under-achieved” schools to help them build up intranets or improve the resource repositories on their intranets.

Intellectual Property Rights

55. Most teachers are willing to share their good practices in IT-enriched pedagogy and their self-developed digital educational resources. But many of them raise concern on intellectual property issues about the use of and sharing of web-based teaching resources. They are also concerned about the protection of their own intellectual property rights when their works are shared. We will address the issues of intellectual property rights of self-made digital learning and teaching materials for sharing by a further study into teachers’ concerns, and will line up appropriate experts and authorities to address those concerns.

Goal 5: *Improving IT Infrastructure and Pioneering Pedagogy Using IT* – We will help schools to upgrade and replace obsolete hardware and migrate where appropriate to wireless systems. We will encourage innovation and trials of new information technologies to enhance learning and teaching.

56. On a matching fund basis and subject to schools’ demonstrated needs, we will improve the IT infrastructure of schools by:

- (a) replacing hardware provided under the Five-year Strategy that are no longer serviceable or beyond economic repair;
- (b) upgrading hardware to make them better support today's needs for learning and teaching; and
- (c) providing additional LCD projectors and related systems in schools.

57. We will extend, on a matching fund basis and subject to schools' demonstrated needs, the scheme on wireless technology to more schools to help remove the physical barrier of learning in classroom and to promote the concept of an e-campus.

58. We will support and promote trial or pilot schemes to explore new information technologies and equipment that may enhance learning and teaching.

59. School principals and teachers need to work out the infrastructure requirements, maintenance and replacement plans in their school-based IT plans. We will support schools by providing advice, partner with HKEdCity and private vendors on enhancing support to schools, e.g. arrange bulk purchase if there is economy of scale, and issue procurement guidelines.

60. We recognize the importance of providing technical support services to schools. In ensuring the success, we will continue with the technical support services in schools and also provide maintenance of computer equipment to schools.

Goal 6: *Providing Continuous Research and Development* – We will conduct research on the effectiveness of the IT in education strategy and the impact of IT on students' learning outcomes. We will explore the possibility of setting up a Hong Kong based research centre to pioneer leading edge IT applications in support of proven educational precepts and to come up with creative means of applying IT in pedagogy, learning and teaching and other education purposes.

61. We will commission research and studies in support of the implementation of Information Literacy for students and assessment, as well as on ways to benchmark schools' IT in education performance and evaluation.

62. We will encourage evaluation and research by tertiary institutions or schools. Successes and exemplars will be developed more systematically on –

- (a) *learning paradigms and pedagogies* – including projects to investigate the elements of effective IT-enriched pedagogies, and the environment that is conducive to the emergence of such pedagogies;
- (b) *education resources* – including research on factors affecting the usage and effectiveness of digital education resources;
- (c) *school practices* – case studies of schools will be conducted;
- (d) *curriculum integration* – effective means of integration of IT into the curriculum will be investigated; and
- (e) *systems and networks* – including sponsoring projects such as the development of open source or non-proprietary school support and resource management systems, and information technologies or software for facilitating management and operation of computers and equipment.

63. To track the effectiveness of IT in education implementation, we will conduct regular surveys and longitudinal study where appropriate, so as to monitor and evaluate strategy implementation.

64. In order to provide feedback on the effectiveness of IT in education strategy, we will undertake the following studies:

- (a) a baseline monitoring and evaluation of the programme of IT in education implementation in schools; and
- (b) a research on the impact of IT in education on students' learning outcomes to identify whether the use of IT has indeed brought

about the development of higher level outcomes, and if so, which kinds of IT in education uses are most conducive to such development.

65. We will collaborate with local and overseas communities where appropriate with a view to exploring the setting up of a Hong Kong-based research centre to pioneer leading edge IT applications in support of proven educational precepts, and to come up with creative means of applying IT in pedagogy, learning and teaching and other education purposes.

Goal 7: Promoting Community-wide Support and Community Building – We will enhance partnership with the IT industry on teacher training, digital resources and other related fields. We will involve the community, in particular parents, and encourage them to motivate children towards the appropriate use of IT and drive home messages on cyber ethics. Communication between schools and parents will be enhanced through the use of IT and measures to address the digital divide will continue.

Home-School Cooperation

66. Home-school cooperation may be facilitated through the use of IT. With IT, schools may keep parents closely informed of students’ behaviour and learning progress. Parents will be encouraged to act as supporters and motivators for their children. We will put in place programmes for schools and Parent-Teacher Associations to help parents ensure students understand the ethical, legal and health issues involved in using IT.

Community-wide Involvement

67. We will pursue the following collaborative schemes with the private sector and NGOs in support of IT in education –

- (a) a call centre service by the private sector or NGOs to answer queries and problems on the application of IT in education encountered by students and teachers;
- (b) an “Adopt a School” campaign by the private sector to assist schools’ transformation into innovative learning institutions;

- (c) forums and events to foster IT culture in schools;
- (d) guidance on provision of maintenance, administration and management of computer network; and
- (e) guidance to schools on IT security, skill sets required for IT technical staff and training roadmap for the development of technical personnel.

Digital Divide

68. “Digital divide” is a social and economic issue that has to be addressed in a wider context. Under the Government’s Digital 21 Strategy launched in 1998, a wide range of measures have been introduced in the community, such as the provision of computers with Internet access at convenient locations for free use by the public, computer recycling for the needy, financial assistance to people with disabilities for purchase of computer facilities for home working, free IT awareness courses for the disadvantaged groups and the general public, etc.

69. Under the Five-year Strategy, a number of measures have been implemented to enhance students’ access to IT facilities, including the provision of laptop computers to secondary school students who do not have computers at home (the “Digital Bridge” project supported by the Quality Education Fund), the provision of an incentive grant to over 1,000 public sector schools to extend the opening hours of computer rooms for use by students after school, and the installation of computers at over 120 community or youth centres. These measures have significantly improved students’ access to IT facilities.

70. In collaboration with relevant Parent-Teacher Associations or other parties, we will encourage “computer recycling” and donation to help needy students to bridge the digital divide. We will continue with the incentive grant for extending the opening hours of school computer facilities in the context of the merged IT grant to help students in need to access computers after school.

SECTION 4

MEASURES AND IMPLEMENTATION

✍ Measures and Implementation Timetable

71. A summary of the measures and their time lines (shaded in grey) for implementation is set out below. Performance measurements will be developed for evaluating the progress and effectiveness of the measures.

Goal and Implementation Measures	Implementation Time Line		
	(school year)		
	2004/05	2005/06	2006/07
1. Empowering Learners with IT			
<ul style="list-style-type: none"> • To draw up an Information Literacy framework for primary and secondary students based on the Information Technology Learning Targets for primary and secondary education so that teachers and students have a clearer picture on the learning targets of using IT in education. (paragraph 24(a)) 			
<ul style="list-style-type: none"> • To enhance guidance to schools on the application of IT in education based on successful local cases. (paragraph 24(b)) 	On-going		
<ul style="list-style-type: none"> • To produce interactive tool kits for schools and teachers on practical ways of using IT. (paragraph 24(c)) 			
<ul style="list-style-type: none"> • To develop assessment tools for use by teachers to help them assess students' attainment of the learning targets in the context of Information Literacy. (paragraph 25) 			
<ul style="list-style-type: none"> • To reflect schools' efforts in assessing students' IT attainment in the Quality Assurance system. (paragraph 26) 			

Goal and Implementation Measures	Implementation Time Line		
	(school year)		
	2004/05	2005/06	2006/07
<ul style="list-style-type: none"> To enhance partnership with NGOs, the private sector and overseas communities on programmes to promote the use of IT in learning among students and to cultivate students' global perspective. (paragraph 28) 	On-going		
<ul style="list-style-type: none"> To support research and evaluation on pedagogically appropriate e-learning platforms; to help schools to set up such platforms, provide teacher training and enhance courseware. (paragraph 29) 	On-going		
2. Empowering Teachers with IT			
<ul style="list-style-type: none"> To revamp the existing training framework for teachers on the use of IT in education. (paragraph 31(a)) 	On-going		
<ul style="list-style-type: none"> To develop, support and provide KLA or subject-based training and school-based training as well as professional development courses, including refresher training for teachers. (paragraph 31(b)) 	On-going		
<ul style="list-style-type: none"> To continue and enhance the “train the trainers” scheme. (paragraph 31(c)) 	On-going		
<ul style="list-style-type: none"> To put in place a voluntary certification system by IT organizations and subject associations to recognize competencies and commitment of teachers who have received training. (paragraph 31(d)) 	On-going		
<ul style="list-style-type: none"> To develop, through HKEdCity, an online training platform and more instructional software for teachers. (paragraph 31(e)) 	On-going		

MEASURES AND IMPLEMENTATION

Goal and Implementation Measures	Implementation Time Line		
	(school year)		
	2004/05	2005/06	2006/07
<ul style="list-style-type: none"> • HKEdCity to set up mutually supportive teacher communities to undertake and share pedagogical innovations, through online and face-to-face contacts. (paragraph 31(e)) 			
<ul style="list-style-type: none"> • To enhance sharing and collaboration among teachers using exemplars and software that are proven to be effective in enhancing learning and teaching. (paragraph 31(f)) 	On-going		
<ul style="list-style-type: none"> • To organize jointly with tertiary educators, the private sector and the school sector, regular flagship conferences on IT in education to enhance sharing of information and dissemination of good practices. (paragraph 31(f)) 			
<ul style="list-style-type: none"> • To conceive incentive schemes for collaboration amongst schools and relevant organizations in harnessing IT in learning and teaching. (paragraph 31(f)) 	On-going		
<ul style="list-style-type: none"> • To give schools the flexibility to allow teachers responsible for coordination of IT across the curriculum to have an equal claim for promotion. (paragraph 33) 	On-going		
<ul style="list-style-type: none"> • To transform at least two of the existing “Centres of Excellence” to become “Learning Centres” that aims to facilitate teachers to develop, share and disseminate innovative learning and teaching methods using the latest information technologies. (paragraph 34) 			

Goal and Implementation Measures	Implementation Time Line		
	(school year)		
	2004/05	2005/06	2006/07
3. Enhancing School Leadership for the Knowledge Age			
<ul style="list-style-type: none"> To enhance training on e-leadership and application of IT in education in continuing professional development courses for school heads. (paragraph 36) 	On-going		
<ul style="list-style-type: none"> To pilot dedicated IT leadership training for school principals to build knowledge, skills and understanding of key issues and impact of learning and teaching with IT. (paragraph 38) 			
<ul style="list-style-type: none"> HKEdCity to set up online communities as an e-platform to support principals' IT training and sustain the momentum of such training. (paragraph 38) 			
<ul style="list-style-type: none"> To continue with the disbursement of IT grants to school but such grants would be merged and constraints on the use of the grants be reduced in order to enhance schools' flexibility in using the resources. (paragraphs 40-41) 	On-going		
<ul style="list-style-type: none"> To strengthen the role of the regional Centres of Excellence network in supporting schools on IT in education. (paragraph 42) 	On-going		
<ul style="list-style-type: none"> To assist schools to review and continue to strengthen the capacity of the team of teachers responsible for planning and implementation of IT in schools. (paragraph 42) 	On-going		

Goal and Implementation Measures	Implementation Time Line		
	(school year)		
	2004/05	2005/06	2006/07
<ul style="list-style-type: none"> To request and assist schools to formulate school-based IT plans and to put in place a self-evaluation system on the effectiveness of such plans. (paragraph 44) 	On-going		
<ul style="list-style-type: none"> To disseminate the assessment tools developed under the “Overall Study” for wide adoption in schools for self-evaluation. (paragraph 45) 			
<ul style="list-style-type: none"> To facilitate schools to form partnership with other schools and the private sector to explore efficient ways of utilizing resources, enhance teacher training and promote students’ learning with IT. (paragraph 46) 	On-going		
4. Enriching Digital Resources for Learning			
<ul style="list-style-type: none"> HKEdCity to incrementally assume the role of a market facilitator to enhance public-private collaboration in the production and adaptation of digital resource materials. (paragraph 48) 	On-going		
<ul style="list-style-type: none"> HKEdCity to strengthen its role as an agent for sourcing, editing and disseminating digital education resources. (paragraph 49) 	On-going		
<ul style="list-style-type: none"> To launch incentive schemes to encourage publishers to turn textbooks into e-learning materials and provide teachers with supplementary after-sale service in the use of such materials. (paragraph 50) 			

MEASURES AND IMPLEMENTATION

Goal and Implementation Measures	Implementation Time Line		
	(school year)		
	2004/05	2005/06	2006/07
<ul style="list-style-type: none"> To launch incentive schemes to encourage the private sector to develop quality digital instructional content and software. (paragraph 50) 			
<ul style="list-style-type: none"> HKEdCity to enhance production of digital resource materials, as well as licensing and adapting the contents of quality overseas e-learning material for local use. (paragraph 50) 			
<ul style="list-style-type: none"> HKEdCity to undertake market survey and research with a view to better understanding schools' use of and demand for digital education resources, and the overall supply in the market. (paragraph 51) 		On-going	
<ul style="list-style-type: none"> HKEdCity to improve its digital resource repository by constantly improving the indexing of its resources and incorporating evaluations of such resources by professional bodies. (paragraph 52) 		On-going	
<ul style="list-style-type: none"> To encourage users, experts or teachers to review software and rank, where appropriate, materials on the HKEdCity as regards their quality for users' reference. (paragraph 52) 		On-going	
<ul style="list-style-type: none"> To pilot an "electronic learning credits" scheme to encourage schools to acquire relevant electronic and interactive learning materials as well as curriculum-specific computer peripherals to enhance the integration of IT in learning and teaching. (paragraph 53) 			

Goal and Implementation Measures	Implementation Time Line		
	(school year)		
	2004/05	2005/06	2006/07
<ul style="list-style-type: none"> • HKEdCity to expedite the development of its platform to provide for e-transactions on e-learning materials. (paragraph 53) 			
<ul style="list-style-type: none"> • To help “under-achieved” schools to build up intranets or improve the resource repository on their intranets. (paragraph 54) 	On-going		
<ul style="list-style-type: none"> • To address the issues of intellectual property rights of self-made digital learning and teaching materials for sharing. (paragraph 55) 	On-going		
5. Improving IT Infrastructure and Pioneering Pedagogy Using IT			
<ul style="list-style-type: none"> • On a matching fund basis and subject to schools’ demonstrated needs, to improve the IT infrastructure of schools by – <ul style="list-style-type: none"> > replacing or upgrading computer hardware to better support today’s needs for learning and teaching; > providing additional LCD projectors and related systems to schools; and > expanding the use of wireless technology to more schools. (paragraphs 56-57) 			
<ul style="list-style-type: none"> • To encourage innovation and trials of new information technologies and equipment that may enhance learning and teaching. (paragraph 58) 	On-going		

Goal and Implementation Measures	Implementation Time Line		
	(school year)		
	2004/05	2005/06	2006/07
<ul style="list-style-type: none"> To partner with HKEdCity and private vendors on enhancing support to schools, e.g. arrange bulk purchase if there is economy of scale, and issue procurement guidelines. (paragraph 59) 	On-going		
<ul style="list-style-type: none"> To assist schools to develop IT equipment replacement/upgrading plans. (paragraph 59) 	On-going		
<ul style="list-style-type: none"> To continue with the technical support services in schools and to provide maintenance of computer equipment to schools. (paragraph 60) 	On-going		
6. Providing Continuous Research and Development			
<ul style="list-style-type: none"> To commission research and studies in support of the implementation of – <ul style="list-style-type: none"> > Information Literacy for students and assessment; and > benchmarking school's IT in education performance and evaluation. (paragraph 61) 			
<ul style="list-style-type: none"> To identify and develop exemplars for more effective sharing among teachers – <ul style="list-style-type: none"> > learning paradigms and pedagogies; > education resources; > school practices; > curriculum integration; and > systems and networks. (paragraph 62) 	On-going		
<ul style="list-style-type: none"> To conduct regular surveys, and longitudinal study where appropriate, to monitor the effectiveness of IT in education implementation. (paragraph 63) 	On-going		

Goal and Implementation Measures	Implementation Time Line		
	(school year)		
	2004/05	2005/06	2006/07
<ul style="list-style-type: none"> • To undertake studies on the effectiveness of the IT in education strategy – <ul style="list-style-type: none"> > a baseline monitoring and evaluation of the programme of IT in education implementation in schools; > a research on the impact of IT on students’ learning outcomes. (paragraph 64)			
<ul style="list-style-type: none"> • To collaborate with local and overseas communities with a view to exploring the setting up of a Hong Kong-based research centre to pioneer leading edge IT applications, and to come up with creative means of applying IT in pedagogy, learning and teaching and other education purposes. (paragraph 65) 			
7. Promoting Community-wide Support and Community Building			
<ul style="list-style-type: none"> • To put in place programmes for schools and Parent-Teacher Associations to help parents to ensure students understand the ethical, legal and health issues involved in using IT. (paragraph 66) 	On-going		
<ul style="list-style-type: none"> • To pursue the collaborative schemes with the private sector and NGOs in support of IT in education – <ul style="list-style-type: none"> > a call centre service to answer queries and problems encountered by students and teachers; > an “Adopt a School” campaign to assist schools’ transformation into innovative learning institutions; 	On-going		

MEASURES AND IMPLEMENTATION

Goal and Implementation Measures	Implementation Time Line		
	(school year)		
	2004/05	2005/06	2006/07
<ul style="list-style-type: none"> > forums and events to foster IT culture in schools; > guidance on provision of maintenance, administration and management of computer network; and > guidance to schools on IT security, skill sets required for IT technical staff and training roadmap for the development of technical personnel. (paragraph 67) 	On-going		
<ul style="list-style-type: none"> • To encourage “computer recycling” and donations to help needy students to bridge the digital divide. (paragraph 70) 	On-going		
<ul style="list-style-type: none"> • To continue with the incentive grant for extending the opening hours of school computer facilities in the context of the merged IT grant to help students in need to access computers after school hours. (paragraph 70) 	On-going		

- End -