Chapter 1  Background of the Study

1.1  Introduction

The former Education and Manpower Bureau (EMB) [now the Education Bureau] of the Government of the Hong Kong Special Administrative Region launched the "Empowering Learning and Teaching with Information Technology" Strategy (the Strategy) in July 2004. Amongst the seven strategic goals as stipulated in the policy document, research that provides feedback on the effectiveness of the IT in education strategy and the impact of IT on students' learning outcomes has been spelt out under "Goal 6: Providing Continuous Research and Development". In this respect, regular surveys where appropriate will be conducted so as to monitor and evaluate strategy implementation. To achieve Goal 6, the EMB has commissioned the Centre for Information Technology in Education (CITE), the University of Hong Kong to conduct the "Phase (II) Study on Evaluating the Effectiveness of the 'Empowering Learning and Teaching with Information Technology' Strategy (2004/2007)" [Phase (II) Study].

It is planned that this Phase (II) Study should focus on evaluating the impact of Information Technology (IT) on students' learning outcomes in specific Key Learning Areas (KLAs) and for timely overall analysis of all relevant data collected within 2004/05 to 2006/07 school years for concluding the effectiveness of the Strategy and informing future policies.

1.2  Study Objectives

The core component of this study is a set of performance assessments to provide evidence on the IT proficiency (i.e. technical proficiency) of primary, secondary and special school students as well as their ability to access, evaluate, and reason with information; collect, analyze and interpret data, and to communicate and collaborate in the context of learning tasks in specific KLAs making appropriate use of IT. The overall objectives of the study are as follows:

- to evaluate the impact of IT on empowering students’ learning in Chinese and Mathematics at primary school level as well as Chinese and Science at secondary school level and in special schools; and
- to conclude the overall effectiveness of the Strategy and to recommend the way forward for IT in Education (ITEd).

The specific objectives of the study are as follows:

(a) to propose the methodology to investigate the impact of IT on empowering students’ learning in Chinese and Mathematics KLAs for the primary, and Chinese and Science KLAs for the secondary and special school sectors as well as to evaluate the effectiveness of the Strategy with respect to the data garnered in relation to the implementation measures
of the 7 strategic goals;

(b) to develop instruments with respect to the nature of the Study and the target stakeholder groups, in particular teachers and students of the primary, secondary and special school sectors;

(c) to propose respective sampling methods and sampling schemes of target stakeholders in each school sector (i.e. primary, secondary and special) as well as other community groups / organisations (if applicable) and to conduct the data collection based on 1.2 (a) and 1.2 (b) above;

(d) to establish a framework to store and maintain the collected data systematically into the data bank which has been developed in accordance with the knowledge management framework of the "Phase (I) Study on Evaluating the Effectiveness of the 'Empowering Learning and Teaching with Information Technology' Strategy (2004/2007)" [Phase (I) Study]¹; and

(e) to conclude the effectiveness of the Strategy based on the results of both Phase (I) Study and Phase (II) Study, and to recommend necessary adjustments to the implementation of the ITEd projects as well as the way forward for ITEd.

1.3 Research Questions

The following specific research questions are addressed in this study:

1. What levels of technical proficiency have students achieved in the use of IT tools for general applications and communication? Are there significant differences across schools and across education levels?

2. What levels of information literacy (IL) competence have students achieved in Chinese Language²? Are there significant differences across schools?

3. What levels of IL competence have students achieved in Mathematics? Are there significant differences across schools?

4. What levels of IL competence have students achieved in Science? Are there significant differences across schools?

5. What relationships, if any, can be found between students’ IL competences in specific KLAs and their technical proficiency?

6. Are there any relationships between students’ IL competences in different KLAs?

7. Are there interaction effects in the relationship between technical proficiency, and students’ IL competences in specific KLAs?

8. What relationships, if any, can be found between the following school level factors (which are associated with the ITEd strategic goals) and students’ technical proficiency and IL

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¹ The “Phase (I) Study on Evaluating the Effectiveness of the 'Empowering Learning and Teaching with Information Technology' Strategy (2004/2007)” was also a study commissioned by the EDB (former Education and Manpower Bureau) to a local tertiary institution focusing on reviewing the progress of various ITEd initiatives as put forth in the Strategy.

² The terms “Chinese Language” and “Chinese” are interchangeable. To be exact, Chinese is the subject and Chinese Language Education refers to the key learning area.
proficiency: school leadership, improving IT infrastructure and pioneering pedagogy, teachers’ pedagogical practices with IT as well as teachers’ IT competence and perception of ITEd?

1.4 Linkage with Phase (I) Study

When designing the questionnaires in this study, the Project Team has made reference to the instruments of Phase (I) Study. Relevant details are described in Chapter 2. In addition, recommendations in Phase (II) Study will be made with reference to related findings of Phase (I) Study.