

CHAPTER 1.2 SURVEY DESIGN AND INSTRUMENTATION

This chapter describes the design and instrumentation for the survey component of the study. In view of the variety and complexity for the research design and methods for the qualitative components of the study, these will be discussed in the respective chapters in part III.

1.2.1 Population definition used and Sampling method in the REITEd survey

The population definition used and the sampling design for the REITEd survey were based on the SITES M1 study (Law et al., 1999) so as to provide opportunities for longitudinal comparisons. The SITES definition of the school population was the population of all schools that followed the local school curriculum, thus some private schools were also involved. In the SITES study, the schools were selected by random sampling from the populations of primary and secondary schools respectively, which included special schools and private sector schools. The definition of each population and sampling method used in the REITEd survey are illustrated as below:

1.2.1.1 Population 1 – Primary schools

As most of the primary schools did not use computers for teaching and learning purposes at the time of survey in the SITES M1 study in September 1998, the population was therefore divided into two groups, the computer-using and non computer-using schools. According to the international population definition in the SITES M1 Hong Kong report (ibid, p.13), only computer-using schools were invited to take part in the SITES M1 study. While all primary schools in Hong Kong are now computer-using, the research team has decided to treat these two groups differently in terms of sampling for the current study. In order to maximize the number of schools that take part in both SITES M1 and the current REITEd studies so that the data can be used for longitudinal comparisons, all the sampled schools from the SITES M1 study were invited to participate in this study.

Population 1a: M1 primary schools (M1 computer-using schools)

The population of 309 computer-using schools will be referred to as Population 1a in this Study. Since not all primary schools had access to computers for instructional purposes at the time of survey in the SITES M1 Study in September 1998, a screening survey was first conducted on all 829 schools, which included 54 special schools and 65 private sector schools. The entire population of M1 primary schools changed from 829 to 825 schools at the time of the REITEd survey in 2000, which included 53 special schools and 62 private sector schools. It was because there were 1 special school and 3 private sector schools that

reported that they had not followed the local school curriculum after the screening survey for the SITES M1 study, and therefore they were excluded in the REITEd survey.

After the screening survey of the SITES M1 study, it was found that only 310 of these 829 schools used computers for teaching and learning purposes. These 310 primary schools were then invited to participate in the international survey in the M1 study, which comprised both the principal and technology questionnaires. Of these 310 schools, 218 schools returned both or either of the questionnaires. Sixty primary schools out of these 218 were then selected by random sampling to take part in the local survey, which comprised a teacher questionnaire and a student questionnaire. For further details, please refer to the SITES M1 HKSAR report (ibid, p.13-14). The number of M1 primary computer-using schools changed from 310 to 309 schools at the time of the REITEd survey in 2000 as the above-mentioned special school that had been excluded was a computer-using school, and it was not included in the sample of the 60 M1 primary computer-using schools from Population 1a.

For the current study, in addition to the 60 primary schools that took part in all four sets of the M1 questionnaire surveys, 9 more primary public sector schools in the initial group of 309 computer-using category voluntarily expressed their interest and agreed to participate in the survey during the period of inviting schools for participation. Therefore a total of 69 schools were included in the sample for Population 1a. The school type distribution of the sampled primary schools can be referred to in Appendix 1.2.1.

Population 1b: Non-M1 primary schools (non-computer-using schools in M1)

There were 519 primary schools identified as non-computer-using after the screening survey in the SITES M1 study. This population of primary schools changed from 519 to 516 schools as the above-mentioned 3 private sector schools that had not followed the local school curriculum were non-computer-using schools, and they were not included in the sample of 69 M1 primary non-computer-using schools. These 516 non-computer-using schools will be referred as Population 1b in this study.

The initial sampling design was to select randomly 60 schools from Population 1b. However, in discussing with Education Department colleagues, the team understood that the focus of the review was on public sector schools and that the team was requested to ensure that the total number of sampled public sector schools in Population 1b should not be less than 60 as proposed in the Project Plan (Version 4.0). On the other hand, the SITES definition of the school population was the population of all schools that followed the local school curriculum and the research team would like to see that the population of schools remained unchanged. Thus the initial random sample was proportionately increased to

accommodate these criteria. The ratio of the number of public sector schools (including special schools) to the number of private sector schools in the population 1b is 12.9 to 1 (i.e. 479 public sector schools to 37 private sector schools), therefore the total number of sampled public sector schools should not be less than 64 schools as there were 5 private sector schools sampled in Population 1b at the initial stage. In addition, there was a desire that special schools be oversampled to ensure that there would be at least one school sampled in each category of special schools, so 6 special schools were strategically randomly selected at the initial stage from the entire special school population that included 126 schools instead of from Population 1b. The details of the sampling for the special schools will be described in section 1.2.1.3 later. In the end, there were 63 randomly sampled non-computer-using primary schools in Population 1b, which included 58 public sector schools and 5 private sector schools. (See Appendix 1.2.1).

In addition to the above, there were 10 more primary public sector schools in the initial group of 516 non-computer-using category voluntarily expressed their interest and agreed to participate in the survey during the period of inviting schools for participation. In the end, there were 73 sampled non-computer-using primary schools in Population 1b, which included 68 public sector schools and 5 private sector schools.

M1&M2 case study schools at primary level

After the completion of the survey in the M1 SITES study, there was a series of case studies conducted on good practices in using computers in teaching and learning in schools. For details on the selection criteria for those case studies, please refer to the report of the M1 case studies (p.28-30). Since last year, SITES has entered into the second phase of study (SITES M2), there has been a series of case studies being conducted on innovative pedagogical practices using technology. These case study schools were selected according to the international criteria, which can also be found for details in the following website <http://sites.cite.hku.hk/All-Fram-02.htm>. It was considered desirable that all these case study schools could participate in this survey study so as to provide opportunities for exploration of any possible differences or characteristics observed for these case study schools from the others. There were a total of 11 primary schools that participated in the M1 and/or M2 studies. Of these, 7 schools were not included in the sampled schools from Population 1a and 1b. These 7 schools, including 5 public sector schools, 1 special school and 1 private sector school, were then selected for inclusion in this current study (see Appendix 1.2.1)

The overall primary schools sample

The total number of sampled primary schools from Population 1 is 143 including 134 public sector schools and 9 private sector schools (excluding special schools). It includes

55 M1 primary computer-using schools, 63 M1 primary non-computer-using schools, 9 additional primary computer-using schools, 10 additional primary non-computer-using schools and 6 primary case study schools in M1 and/or M2 studies (See Appendix 1.1.2). In order to provide a better illustration on the sampling situation of the special schools, those 12 initially sampled special schools were taken out and would be described in section 1.2.1.3.

1.2.1.2 Population 2 – Secondary schools

Secondary schools were different from primary schools in that all secondary schools were already using computers for teaching and learning in September 1998. Altogether 60 secondary schools were randomly sampled to take part in all four survey questionnaires in SITES M1. In order to maximize the number of schools that take part in both the SITES M1 and the current REITEd studies so that the data can be used for longitudinal comparisons, all the sampled schools from the SITES M1 study were invited to participate in this study.

Sampling of M1 secondary schools

In September 1998, there were 428 secondary schools including 15 private sector schools and they were invited to participate in the international survey in the M1 Study, which consisted of the principal and technology questionnaires. Of these, a total of 317 schools returned both or either of the questionnaires (see SITES M1 HKSAR report 1999, p.13-14). Out of these 317 secondary schools, 60 were then randomly selected to take part in the local component of the SITES M1 survey, which consisted of the teacher questionnaire and student questionnaire.

M1&M2 case study schools at secondary level

After the completion of the survey in the M1 SITES study, there was a series of case studies conducted on good practices in using computers in teaching and learning in schools. For details on the selection criteria for those case studies, please refer to the report of the M1 case studies (Law et al, 2000, p.28-30). Since last year, SITES has entered into the second phase of study, there was a series of case studies being conducted on the innovative pedagogical practices using technology. These case study schools were selected according to the international criteria, which can also be found in the following website <http://sites.cite.hku.hk/All-Fram-02.htm>. It was considered desirable that all these case study schools could participate in the current survey study so as to provide opportunities for exploration of any differences or characteristics observed for these case study schools from the others. There were a total of 14 secondary schools that participated in the M1 and/or M2 case studies. Of these, 9 schools were not included in the SITES M1 local

survey sample of 60 schools. These 9 schools were also included in the current survey study.

The overall secondary schools sample

The total number of sampled secondary schools is 69 including 9 secondary case study schools in M1 and/or M2 studies and all of them are public sector schools. The school type distribution of the sampled primary schools can be referred in Appendix 1.2.2.

1.2.1.3 Special schools

In the SITES M1 study, the schools were selected by random sampling from the populations of primary and secondary schools respectively, which included special schools and private sector schools. As stated earlier in this report, the population definition used and the sampling design for the REITEd survey were based on the SITES M1 study so as to provide opportunities for longitudinal comparisons. The definition of the population of special schools and sampling method used in the REITEd survey are illustrated as below:

There were 5 sampled special schools initially included in the sample of the 60 M1 primary computer-using schools. In addition, there was one special school included in the M1 case studies as stated before. It was considered desirable that all these case study schools could participate in the current survey study so as to provide opportunities for exploration of any differences or characteristics observed for these case study schools from the others.

Six special schools were then strategically randomly selected at the initial stage from the entire special school population¹ that consisted of 126 schools. Thus, a total of 12 special schools were selected in the first round of sampling (see Appendix 1.2.3). In order to further address the desire from ED that more data should be collected about the particular needs of special schools for the implementation of the 5-year strategy in IT in Education, the special schools sample was further extended.

Base criteria for further sampling was that schools from each of the 11 special school categories should be selected. Eight additional schools were selected on the basis of a probability proportional to the number of those schools in each category. An additional school from the School for Social Development category was selected as it was expected that students from this category of special schools might potentially benefit more from the

¹ The entire population of special schools is 126 schools (including 1 hospital school with 17 school sites), in which for a school with both primary and secondary sectors, it will be counted as 2 schools.

use of information technology. In addition to the above, there was one special school that voluntarily expressed their interest both in the survey and the case study components of the REITEd study. In the end, a total of 22 special schools were selected from the entire special school population (see Appendix 1.2.3).

Since the sample size of the special schools in the REITEd is relatively small in each of the categories of special schools, it is difficult to draw any significant discussion/conclusion from the survey data. It would only be possible if the questionnaire sets were re-designed to address the needs of the special schools, which was however beyond the scope of study. Recognizing these constraints, the research team decided that there would be no subsequent reporting on the discussion/conclusion on the survey data of the special schools as a separate category in the chapter of data analysis of the Final report. Instead, appendices of all the descriptive statistical results of the participating special schools in the survey will be reported (see Appendix 1.2.4)

1.2.2 Administration for the REITEd survey

A total of sampled schools are 234, which include 22 special schools and 9 private sector schools. An invitation letter was sent to all the 234 sampled schools of which 143 schools were primary schools, 69 schools were secondary schools and 22 schools were special schools in March 2001. Of these, 206 schools including 7 private schools agreed to participate in the survey by returning the class details for the targeted survey grades. The 4 questionnaire sets including that for students, teachers, IT coordinators and principals were sent to all the selected schools that had confirmed their participation before. As for the student questionnaire, it was distributed to all students in one randomly selected class for each of the target grades present in a selected school. The target grade levels for the student questionnaire were Primary 6, Secondary 2, Secondary 4 and Secondary 6, thus covering grades from primary, lower and upper secondary levels. Of these 206 schools, 205 schools including 6 private sector schools returned the questionnaires. The overall school participation rate is 99.5% (see Appendices 1.1.2 & 1.1.3).

1.2.3 Grouping schools for analysis

For comparative purpose, the data from the sample schools are grouped according to their readiness in IT. Readiness is here defined as the time engagement in IT and the amount of resources obtained. In this respect, the pilot schools which began their IT initiative officially in 1998 and were given a great deal of resources by ED form naturally a category. The next category is those schools that participated in the MMLC scheme (this is applicable only to secondary schools) at a similar time, followed by schools that joined the

ITC scheme in 1999 or after. Some Multimedia Learning Centre (MMLC) schools are also members of the Information Technology Coordinator (ITC) scheme in 2000. Then there are schools that succeeded in obtaining Quality Education Funds (QEF) in IT initiatives, and the rest that do not have noticeable outside support.

We have tried several groupings aiming at maximum variation. We finally settled down in MMLC, MMLC plus ITC and ITC (1999 and 2000 combined as the two did not differ much on their views and practices on IT). The final groupings for secondary and primary schools are:

| | |
|------------------|--|
| Secondary school | Pilot schools, MMLC + ITC, MMLC, ITC, QEF & Others |
| Primary school | Pilot schools, ITC, QEF & Others |

Table 1.2.1 Number of Sample Schools in Each Group

| Group (N) | <u>Principal</u> | | <u>ITC</u> | | <u>Teachers</u> | | <u>Students</u> | |
|-----------|------------------|-----------|------------|-----------|-----------------|-----------|-----------------|-----------|
| | Primary | Secondary | Primary | Secondary | Primary | Secondary | Primary | Secondary |
| Pilot | 6 | 5 | 6 | 6 | 6 | 6 | 6 | 6 |
| MMLC/ITC | NA | 6 | NA | 8 | NA | 9 | NA | 9 |
| MMLC | NA | 5 | NA | 6 | NA | 6 | NA | 6 |
| ITC | 16 | 12 | 18 | 15 | 19 | 15 | 19 | 15 |
| QEF | 17 | 10 | 16 | 10 | 17 | 10 | 17 | 10 |
| Other | 66 | 18 | 71 | 17 | 75 | 19 | 76 | 18 |

Due to the characteristics of the special schools, no attempt was made to subdivide them for the purpose of the analysis of this survey.

In 98/99, CITE conducted its first survey on IT use on Hong Kong schools. In this study it was found that only 310 primary schools had used any computer at all at the time of survey. Law et al. (1999) believed that these schools might have greater progress in computer usage than the rest of other primary schools². Hence other than the above category of schools, we try to see, whenever appropriate, whether this difference has indeed had created some larger difference among the primary school students.

² In the remainder of this document, “computer-using schools” refer to schools that have been using computers in teaching by the end of 1998 when SITES-M1 was conducted. The other primary schools are labelled as “non-computer using schools”.