THE ROLE OF THE SCHOOL RESOURCE CENTRE IN TECHNOLOGY INTEGRATION IN TEACHING AND LEARNING IN SELECTED SECONDARY SCHOOLS

PERPUSTAKAAN SKIM

SUZANA BINTI AHMAD

DISSEERATION SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF LIBRARY AND INFORMATION SCIENCE
ABSTRACT

This study sets out to determine the level of teacher technology integration in teaching and learning and to identify the role of the school resource centre in the technology integration. 30 respondents from 10 secondary Smart Schools in Wilayah Persekutuan Kuala Lumpur and Selangor were chosen as the samples of this study. Formal interviews had been conducted as the survey instrument of the study. The subject teachers and representative of the school resource centre were interviewed to elicit information pertaining to their effort to integrate the use of technology into classroom instructions and the role played by the school resource centre in supporting and encouraging technology integration in the teaching and learning process. The findings reveal that teachers are integrating the technology into their classroom activities at the 'adaptation' stage whereby the teaching methods and strategies vary and moving toward student-centredness. The teachers are mostly competent in the use of technology and impart positive impact as a result of technology integration. They are considering various pedagogical and technology aspects when planning to carry out an integrated lesson. Nevertheless, the frequency of integration among the teachers is rather low. The highest percentage of it is only once a month as the use is scheduled by the timetable. This can be the factor that may impede the effort to innovate in the use of technology with the students. There is indeed a need for an increasing number of computers and software resources so as to promote extensive use of technology in teaching and learning. The findings also reveal that the school resource centre has been regarded as an important component in school to support the teaching and learning activities. However, the
facilities are still due to being adequate and appropriate to complement the smart
environment of the schools. Among the shared roles of the school resource centre in
technology integration in the teaching and learning as mentioned by the majority include
providing physical facilities such as rooms/space, hardware and software, organize
training in the use of computer and CD-ROM, promoting library use, monitoring library
use through a time-table and other library-related activity such as *Minggu Pusat Sumber*.
The finding also reveals that the school resource centre is evidently lacking in the training
and teaching role of important relevant skills required by the school community to be
able to obtain information effectively.
Table of Contents

Abstract .........................................................................................................................................

Acknowledgement ......................................................................................................................... iv

Table of Contents ..........................................................................................................................

List of Figures ............................................................................................................................... 

List of Tables ............................................................................................................................... xi

List of Abbreviations .................................................................................................................... xii

CHAPTER ONE: INTRODUCTION

11 Background ............................................................................................................................... 1

1.2 Harnessing Technology in Education .................................................................................. 2

1.3 ICT Integration in Malaysian Schools ................................................................................. 4

1.4 Significance of the School Resource Centre ...................................................................... 6

1.5 Statement of the Problem ..................................................................................................... 9

1.6 Aims of the Study .................................................................................................................. 10

1.7 Research Questions .............................................................................................................. 11

1.8 Significance of the Study ..................................................................................................... 11

1.9 Limitations of the Study ....................................................................................................... 13

1.10 Definitions of Terms .......................................................................................................... 15

1.11 Summary ............................................................................................................................... 16
CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1 Introduction ........................................................................................................ 17
2.2 Concept of Technology Integration .................................................................... 18
2.3 The Impact of Technology Integration ............................................................... 28
2.4 Teacher Technology Competency ..................................................................... 26
2.5 Level of Teacher Technology Integration ......................................................... 30
2.6 The Role of the School Resource Centre ......................................................... 34
2.7 Summary ............................................................................................................ 39

CHAPTER THREE: METHODOLOGY

3.1 Introduction ....................................................................................................... 40
3.2 Research Design ............................................................................................... 40
3.3 Population and Sample .................................................................................... 41
3.4 Survey Instrument ............................................................................................ 41
  3.4.1 Interview .................................................................................................... 42
3.5 Data Collection Procedures ............................................................................. 44
3.6 Analysis of Data ............................................................................................... 45

CHAPTER FOUR: FINDINGS AND DISCUSSIONS

4.1 Introduction ....................................................................................................... 46
4.2 Findings of the Study ....................................................................................... 46
  4.2.1 Background of the Sample ....................................................................... 46
    4.2.1.1 Teaching Experience ....................................................................... 47
4.2.3.2 Facilities for Technology Integration in
Teaching and Learning ................................................... 71

4.2.3.3 Accessibility of Facilities ............................................. 72

4.2.3.4 Programmes for Promoting Technology Integration ................................................................. 73

4.2.3.5 Training for Technology Integration .................. 75

4.2.3.6 Perception on Impact of SRC Role ............... 76

4.2.3.7 Perception and/or Expectation to Expand
SRC Role ............................................................................. 77

4.3 Discussions of the Findings ................................................................. 79

4.3.1 Level of Teacher Technology Integration in the
Teaching and Learning......................................................... 79

4.3.2 The Role of the School Resource Centre ...................... 86

4.4 Summary ............................................................................................... 89

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND
RECOMMENDATIONS

5.1 Introduction......................................................................................... 90

5.2 Summary................................................................................................. 90

5.3 Conclusions ........................................................................................................ 92

5.4 Recommendations ............................................................................................... 94

5.5 Suggestions for Further Research ......................................................... 96
4.2.3.2 Facilities for Technology Integration in Teaching and Learning........................................ 71

4.2.3.3 Accessibility of Facilities 72

4.2.3.4 Programmes for Promoting Technology Integration................................................. 73

4.2.3.5 Training for Technology Integration............................................................................. 75

4.2.3.6 Perception on Impact of SRC Role ............................................................................... 76

4.2.3.7 Perception and/or Expectation to Expand SRC Role..................................................... 77

4.3 Discussions of the Findings .......................................................................................... 79

4.3.1 Level of Teacher Technology Integration in the Teaching and Learning.............................. 79

4.3.2 The Role of the School Resource Centre................................................................. 86

4.4 Summary .................................................................................................................. 89

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction.................................................................................................................. 90

5.2 Summary .................................................................................................................. 90

5.3 Conclusions............................................................................................................... 92

5.4 Recommendations .................................................................................................. 94

5.5 Suggestions for Further Research............................................................................... 96
## Appendices

- **Appendix A** (Permission Letter from the Ministry of Education) .......... 99
- **Appendix B** (Questionnaire for Subject Teachers) ................................. 100
- **Appendix C** (Questionnaire for SRC Representatives) ......................... 102
- **Bibliography** ...................................................................................... 103
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2.1.1</td>
<td>The respondents by number of years of teaching experience</td>
<td>47</td>
</tr>
<tr>
<td>4.2.1.2</td>
<td>The subjects taught by respondents</td>
<td>48</td>
</tr>
<tr>
<td>4.2.1.4</td>
<td>Teachers' level of technology competency</td>
<td>52</td>
</tr>
<tr>
<td>4.2.2.5(a)</td>
<td>The percentage of respondents' common approach</td>
<td>59</td>
</tr>
<tr>
<td>4.2.2.5(b)</td>
<td>The percentage of respondents' methodology often used</td>
<td>60</td>
</tr>
<tr>
<td>4.2.2.6</td>
<td>The teachers' role</td>
<td>62</td>
</tr>
<tr>
<td>4.2.2.7</td>
<td>Students' role as perceived by respondents</td>
<td>63</td>
</tr>
<tr>
<td>4.2.2.8</td>
<td>The problems faced by respondents</td>
<td>65</td>
</tr>
<tr>
<td>4.2.2.10</td>
<td>Factors influencing effective technology integration</td>
<td>68</td>
</tr>
<tr>
<td>4.2.3.6</td>
<td>Respondents' perception on impact of role of SRC</td>
<td>76</td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>4.2.1.3</td>
<td>The frequency of teachers' technology integration in teaching and learning</td>
<td>49</td>
</tr>
<tr>
<td>4.2.1.4</td>
<td>How the knowledge and skills on technology were gained</td>
<td>50</td>
</tr>
<tr>
<td>4.2.2.1</td>
<td>Respondents' understanding of technology integration in teaching and learning</td>
<td>53</td>
</tr>
<tr>
<td>4.2.2.2</td>
<td>Respondents' commonly used technology application software</td>
<td>55</td>
</tr>
<tr>
<td>4.2.2.3</td>
<td>The purposes of employing specific applications software</td>
<td>56</td>
</tr>
<tr>
<td>4.2.2.4</td>
<td>The teaching aspects considered before technology integration</td>
<td>58</td>
</tr>
<tr>
<td>4.2.2.5(c)</td>
<td>Teaching strategies often adopted by respondents</td>
<td>61</td>
</tr>
<tr>
<td>4.2.3.4(a)</td>
<td>Programmes conducted by SRC</td>
<td>73</td>
</tr>
<tr>
<td>4.2.3.4(b)</td>
<td>How SRC actively promote use of technology</td>
<td>75</td>
</tr>
<tr>
<td>4.2.3.5</td>
<td>Training/Instruction given by SRC for technology integration</td>
<td>76</td>
</tr>
</tbody>
</table>
# LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACOT</td>
<td>Apple Classroom of Tomorrow</td>
</tr>
<tr>
<td>CAI</td>
<td>Computer Assisted Instruction</td>
</tr>
<tr>
<td>CAL</td>
<td>Computer Assisted Learning</td>
</tr>
<tr>
<td>CIE</td>
<td>Computer In Education</td>
</tr>
<tr>
<td>CLPP</td>
<td>Computer Literacy Pilot Projects</td>
</tr>
<tr>
<td>EPRD</td>
<td>Educational Planning and Research Division</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communications Technology</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>MSC</td>
<td>Multimedia Super Corridor</td>
</tr>
<tr>
<td>OPAC</td>
<td>Online Public Access Catalogue</td>
</tr>
<tr>
<td>Psi</td>
<td>Pusat Sumber Ilmu</td>
</tr>
<tr>
<td>PSE</td>
<td>Pusat Sumber Elektronik</td>
</tr>
<tr>
<td>SRC</td>
<td>School Resource Centre</td>
</tr>
<tr>
<td>WPKL</td>
<td>Wilayah Persekutuan Kuala Lumpur</td>
</tr>
</tbody>
</table>
CHAPTER ONE

INTRODUCTION

1.1 Background

It is believed that if a country is to fulfill its vision and dreams, its society has to be sufficiently "informed" as information is an essential resource in the 21st century. "Informed" society can be progressively achieved by equipping the young generation in schools with knowledge and skills so as to prepare them for the challenges in the future world. The Malaysia's National Philosophy of Education makes this clear by outlining that education in Malaysia is aimed at producing citizens who are knowledgeable and competent (Wan Mohamed Zahid, 1994). Consequently, this philosophy can greatly assist in the country's effort to meet the challenge of Malaysia's Vision 2020 that aims to produce technologically literate workforce that is capable to participate actively in a global, IT-intensive work environment (Mahathir, 1991).

Various initiatives have been adopted by the government so as to advocate the greater employment and dispersion of Information and Communications Technology (ICT) in order to improve capacities in every field of business, industry, education and life in general. ICT is defined as a system that enables the compilation, management, manipulation, acquisition and communication of information in diverse forms (Ministry of Education, 2002). One of the most ambitious and technologically advanced mega projects undertaken by the Malaysian government is the Multimedia
Super Corridor (MSC) project that crowns the effort for the extensive use of new leading technologies. It is charting out new directions in the application of ICT in all domains of human activities in seven areas (Ibrahim, 2001). This clearly draws the big potential of ICT as it has been embraced as one of the latest applications of technology that convincingly speed up the MSC evolution.

The technology is also seen as the enabler to access to the massive amount of information. According to Kennedy (1998), the information resources are more widely and more freely available through the use of ICT. The extensive use of ICT in many domains has indeed accented the importance for acquiring the ICT skills. According to Beresford-Hill (2002), technological fluency and competence is a prerequisite for economic and social development if the next generation is expected to be able to contribute to the economic development of the nation.

1.2 Harnessing Technology in Education

Inevitably, ICT has "raged" not only the workplace and home, but also the school setting. The use of computers has been expanded into the school and classroom with the aim to reduce the digital divide that exists in the country (Chan, 2002). In addition, Kennedy (1998) highlights that the curriculum of future education must be linked to the new technologies so that, students can become active meaning makers in the global society. Gan (2000), in her book discussing all aspects of information technology (IT) applications in education, perceives IT as a key factor in producing a new breed of knowledge workers for the Information Age who can meet the demands
and challenges of globalization. Thus, education plays a crucial role that can either accelerate or delay the nation's progress in the Information era. Restructuring education in Malaysia has always been an on-going process by which it is anticipated that computing and communications have the potential to revolutionise education and improve learning (Malaysian Education Promotion Council, n.d.).

The period from 1986 through the mid-1990s began to see the widespread use of the new technologies, particularly computers, in the teaching and learning process (Gan, 2000). The Ministry of Education forged initiatives to embark on a series of computational programmes and pilot projects that focused on computer literacy and integration in the school curriculum. This started with the outset of Computer Clubs in school since 1986, followed by the initiation of the Computer Literacy Pilot Projects (CLPP) and Computers-In-Education Projects (CIE). Then, other projects come forth that included the Knowledge Resource Centre (Pusat Sumber Ilmu), Computer Assisted Instruction (CAI), Computer Assisted Learning Project (CAL) and Pusat Sumber Elektronik (PSE).

Among the latest changes, the government has taken a bold advancement in commencing the Smart School Project, one of the seven applications of the MSC. Ninety schools have been selected to participate in a pilot study to test out its effectiveness and to correct its deficiencies if any (Ministry of Education, 1997). The smart school concept is implemented in stages nationwide. All the initiatives mark the shift from computer literacy per se to computer technology integration across the
curriculum. Ehrmann (1995) eminently supports such endeavors, as he believes there is no evidence that an institution will be able to meet the mentioned challenges without substantial use of computers, video and telecommunications, particularly in the teaching and learning process.

1.3 ICT Integration in Malaysian Schools

The implementation of ICT in schools will eventually be based on the Smart School concept, employing an ICT-across-the-curriculum, which will result in a dramatic shift in teaching and learning mode, making teaching-learning more efficient. The government is convinced that the use of ICT in the teaching and learning process is capable to improve the quality of education (Ministry of Education, 2002). Therefore, the development of infrastructure and conducive environment for ICT outgrowth for such intentions is emphasized since the 7th Malaysia Plan and this is further reinforced in the 8th Malaysia Plan (Prime Minister's Department, 2001). This involves a huge investment by the government to ensure that the school community is likely to fully benefit from the availability of technology in school.

The use of ICT in education is concerned with the applications of technology that supports the core process in the management and administration in education, teaching and learning as well as lifelong learning (Ministry of Education, 2002). As such, the Ministry of Education has emphasized three main bases of the use of ICT in education, viz, (i) ICT Literacy for every student, gained through the use of ICT infrastructure; (ii) ICT roles and functions in education as a part of the curriculum,
and the teaching and learning tool; and (iii) the use of ICT to enhance the productivity, efficiency and effectiveness of the management system through office automation and implementation of the management application system.

Introducing ICT into all schools in the country is indeed a major undertaking by the government. One of the strategies that has been determined to ensure that the objectives of ICT in education are successfully achieved, is the emphasis on integration of ICT in the teaching and learning. This would direct a paradigm shift in learning that aims for students to learn with technology. It is believed that computer skills can be acquired in context while the students are learning the curriculum content in a meaningful, relevant manner (Machnaik, 2002).

The following are among the suggested programmes that can be employed to support the effective and efficient integration of the ICT into the classroom teaching and learning:

- Computer Literacy
- Information Technology
- E-Learning
- ICT for teaching and learning
- ICT Special Project for Education
- Interactive Educational Multimedia Courseware
- Computer Club  
  (Ministry of Education, 2002)
The objective of ICT in education is to promote ICT knowledge and skills among not only students, but also teachers. Teachers as the individuals who act upon the implementation may face challenges in order to ensure effective integration of the ICT. At present, training is given to the in-service teachers for ICT skills and utilizing pedagogical approaches, which take into account ICT in the teaching-learning environment (Wan Mohd. Fauzy, 2002). This shows that the government's effort also includes equipping teachers with sufficient training in computer and technology literacy, or more specifically on how to utilize the supplied technologies and interactive multimedia courseware in the classroom. This is important for the teachers to be able to integrate the technology meaningfully into the classroom context.

A transformation needs to take place with the integration of ICT in the school environment. In order to optimize the use of the new technology in school, there need to be a centre of a revolution to embark on the use of all kinds of information technology. This is where the school resource centre plays its part and lives up to its responsibility. As Zuraidah (1998) mentions, the functions and services of the resource centre have had to make quantum leaps too especially in delivering new services to cater for the needs of the school community in their use of technology.

### 1.4 Significance of the School Resource Centre

The school resource centre or SRC is one element of the school that has been given considerable attention due its importance in supporting the great effort toward achieving the smart school status. The school resource centre has been perceived as
being the 'foundations of the curriculum', indicating the central role of the centre in the educational process (Hamidah, 2002). Much attention has been focussed to the role of the SRC within the curriculum and in particular, to ways of making it more effective in the educational process. In fact, the curriculum for the Malaysian schools has been planned such that the use of the library and library resources are integrated in all subject areas (Hanafi, 1996). Nevertheless, Zaiton (1993) highlights that while the importance has long been acknowledged, its importance has not been translated into actual use at classroom level, specifically for teaching and learning.

The school resource centre should respond to the challenges imposed by the changes in educational aims and methods that emphasize independent and lifelong learning. As the teaching and learning environment changes with the integration of technology into the curriculum, students are expected to make full use of the technology independently to locate and obtain resources themselves for learning is more student-centred rather than teacher-centred. The students need to survive with the available technology. They need to explore and discover things either through the use of the Internet, CD-ROM databases or other electronic resources, in order to fulfill a specific task. Hence, for the students to be able to manage and handle the use of technology, there is a need for computer as well as information literacy. Teh (1996) specifically mentions that the computer literacy and in particular information skill programmes taught in the classroom can be reinforced through the use of the school automated library system. Thus, any information-related activities should be centred on the school resource centre.
As all schools are targeted to achieve the smart school status by the year 2010 (Chan, 2002), we should be aware of the important role of the school resource centre in imparting skills and educating its users. This means that the teaching or training role of the school resource centre is significant as a necessary step towards developing information literacy. The resource person in school or the teacher-librarian has a commitment to information literacy, helping students to know how to locate, evaluate, create and communicate information whereby these are the key skills in the present workplace (Iowa Educational Media Association, 1998).

Gan (2000) mentions that the students need to evaluate and process the retrieved information before actually using it. Thus, in such situation, it is expected that the school resource centre plays a key role in the integration of technology into instruction by providing training in the use of hardware and being expert in the area of software resources. The teacher-librarian is seen as a curriculum consultant and technology infuser in the school that calls for the cooperation between the subject teacher and teacher-librarian. (Iowa Educational Media Association, 1998). According to Gibson (1997), by planning together and supporting each other, both can assist students more effectively to use the computer technology beneficially for enhancing the research process and learning important information literacy skills.

In line with the development of the use of ICT in schools, it is expected that the school resource centre be consequently upgraded to electronic resource centres towards enhancing information-based skills teaching and learning (Fatimah, 2002).
Although Teh (1996) reveals that computerizing the school resource centre in this country is a problematic prospect as many schools found it costly, there is a need for the resource centre to be fully equipped with the sufficient technology infrastructure required for use by the students and for carrying out information-related activities. This will further accentuate the significance of the SRC particularly in playing an essential role in the integration of technology into the teaching and learning.

1.5 Statement of the Problem

It seems that now more than ever, technology is playing a critical role in the lives of students, teachers, administrators, and members of the education community at large. The goal, throughout the country, is to use the ICT to improve classroom teaching and learning; and for this reason, millions of ringgit is being invested directly for this purpose.

As Malaysia plans to roll out in phases the smart school concept to all schools by the year 2010, the government has made an effort to equip schools with sufficient technology infrastructure so that, teachers can take advantage of these technologies and interactive multimedia courseware. Hence, these teachers are expected to create a new, challenging teaching-learning environment with the incorporation of the new technologies into their lessons.

With such advancement of ICT in the teaching and learning, it is therefore consequential for the resource centre in school to play its crucial role as the centre of
information and teaching-learning activity development. In Malaysian context, the information on the significant, concerted role of the school resource centre is lacking particularly in supporting the innovation of the teaching and learning with the integration of technology.

Similarly, there is a scarcity of information on the ways or how teachers in the secondary schools integrate the technology into teaching and learning. Many studies have been conducted to discover teachers' attitudes on the use of ICT in schools and to assess the extent of ICT capability to reform education or teaching and learning. There is not much focus given on how teachers develop the teaching-learning styles using the technologies available in school. These are the main factors that call for an exploratory study to investigate the teacher's level of technology integration in classroom instruction.

1.6 Aims of the Study

The main aim of this study was to determine the level of teacher technology integration in the teaching and learning process. By looking into the stage of technology integration most teachers are comfortable with, this can resolve how teachers in secondary schools are using ICT with the knowledge and skills they possess to create a technologically rich and pedagogically sound teaching-learning environment. Besides that, the purpose of this study was to find out the roles played by the school resource centre in encouraging not merely the implementation, but also effective integration of the latest technologies available.
The following research objectives were constructed in order to achieve the aims:

To determine the level of teacher technology integration in teaching and learning.

ii) To identify the role of the school resource centre in technology integration in teaching and learning.

1.7 Research Questions

To achieve the above aims and objectives, the following research questions were formulated and used to guide the study:

i) What is the level of teacher technology integration in the teaching and learning process?

ii) What are the roles of the school resource centre in the integration of technology into teaching and learning?

1.8 Significance of the Study

This study hopes to provide an overview on the status of technology integration in the teaching and learning process by looking over the teacher's level of technology integration. The stage of integration will be meaningful to assimilate a general outlook on the current implementation of ICT integration in the teaching and learning. The teachers’ efforts to employ technology into classroom teaching will indicate the achievement of the government's initiative to upgrade schools based on smart school concept.
The actual panorama of ICT applications among teachers can indeed be an important input that will draw the attention of educational planners and administrators to follow-up in the course of the implementation. Any distinguished teaching-learning pattern will be a useful source of information that may serve in decision-making, improvement and amendment where appropriate, especially in assessing if the integration of technology has been successful and effective for lifelong learning.

It is also hoped that the findings will bring into the awareness of other practicing teachers on the degree of their technology integration in the teaching and learning. This in turn will depict their true understanding on how to effectively integrate the technologies into their instructional processes. Thus, it is hoped that the knowledge on the occurring stages will become a starting point for improvement in the teachers' efforts to innovate in the use of the latest technologies for the evolving teaching and learning environment.

Besides that, it is essential for schools to identify the level of technology use by their teachers so as to take relevant steps to encourage teachers to move from a fairly basic level of integration to the appropriation and invention stage. This is important to boost their creativity in creating interesting and meaningful lessons with the high level of technology integration. As huge investments in the education and training have been made, a study has to be implemented to gauge the success and identify areas that are in need of improvement.
The section on the role of the school resource centre in encouraging and supporting the appropriate and optimum use of ICT will indicate the extent of its function as the 'soul of the teaching and learning process. This information will open up the 'door' for teachers to fully exploit the crucial integral part of the school system. Most importantly, it is crucial for the coordinators of the school resource centre to evaluate and thus upgrade their services to keep pace with the development of ICT use in schools, particularly in the teaching and learning activities.

The findings of this part will also provide an understanding of what the role of the teacher-librarian should be in delivering better services, especially in assisting subject teachers in their venture to integrate the technology efficiently and effectively into their daily lessons. The understanding can encourage them to review their roles so as to consider whether they are responding to the needs to create an informed society. As such it will also help them to catalyze actions towards planning and further develop the resource centre.

1.9 Limitations of the Study

The study was confined to the states of Wilayah Persekutuan and Selangor only. The data required was collected from only ten secondary schools in the two states that are involved in the implementation of the Smart School Project, with the assumption that they possess and cover adequate technological infrastructure for ICT integration and are implementing the Smart instruction using the latest technology. As such, the findings may not be generalized to other schools.
The sample and area under study is not representative of the whole country as different schools in different (or even the same) places may have different level of [CT infrastructure, especially those that do not even acquire the basic technology requirements for ICT integration. However, the findings of this study may still be valuable to provide an understanding on the role of the school resource centre and the practice of technology integration among teachers.

The data collected on the level of technology integration in teaching and learning and the role of the school resource centre was sought from the subject teachers as well as the representatives of the school resource centre through structured interviews. Thus, the information was wholly gathered from the account of the respondents without being complemented by other documents for evidence, classroom observations or case studies. As such, the findings of this study were mainly based on the responses given by those who were involved in and had experienced the integration of technology into teaching and learning, without an attempt made to get information elsewhere. In doing so, the mainly study relied on the accuracy the data given by the respondents.

This study identified the level of teachers ICT integration in their lessons, which was confined to the ways they integrate the technology into instructions, without considering the factors affecting the implementation. No hypothesis was tested, as this was an exploratory study upon which very little related literature could be found in the Malaysian context.
1.10 Definitions of Terms

The following definitions apply to this study:

The School Resource Centre (SRC) is a systematically organised collection of carefully and purposefully selected books and non-book teaching-learning materials in particular, and information carrying materials in general, that are used to provide appropriate and timely information, programmes and services to students and teachers of the school, and also to promote a centre for life-long learning (Vias, 1992). In the centre is housed a library as well as resource materials and educational technology equipment for teaching and learning use. The SRC is the Malaysian equivalent of the School Library Media Center in the United States and the School Library in many countries (Zuraidah, 1998).

Technology refers to all the latest applications of computer technologies that are used in the teaching and learning. For the purpose of this study, the terms, technology and ICT, are interchangeable. ICT stands for Information and Communication Technology, which is the currently used term for IT (information technology), reflecting the fact that it can also be used for communication purposes (Mohd. Shaferi, 1998). Technology is viewed as one means of solving the problems faced by teachers in their teaching and students in their learning (Williams, 2000).

Integration involves a process whereby teachers determine where and how that technology fits into the teaching and learning process. Integration takes place when
the uses of technology provide support at key points during the lesson (Roblyer, Edwards & Havriluk, 1997).

**Representative of the SRC** will constitute either be the teacher-librarian/SRC Coordinator (*Penyelaras Pusat Sumber Sekolah*) or the Media/Technology Coordinator of the respondent schools. The *teacher-librarian* or *SRC Coordinator* refers to a teacher who is in charge of or responsible for managing the SRC. There are a variety of terms used in different countries to describe the person such as 'school librarian' (UK), 'teacher-librarian' (Australia and many others) and 'school media specialist' (USA) (Abrizah, 1998). The *Media/Technology Coordinator* is the person who is responsible for supporting teachers in the overall deployment of multimedia and other technologies.

**1.11 Summary**

This chapter serves as an introduction to the study. Firstly, it gives the background that sketches out Malaysia's visions and dreams. Then, the efforts made to harness technology into Malaysian education have been traced. This is followed by an overview of the ICT integration in Malaysian schools. The significance of the school resource centre (SRC) is also discussed. The chapter further states the problem of the study, followed by the purpose of the study and the research questions. It has also discussed the significance of the study, and its limitations, besides including the definitions of the terms used. The following chapter provides a background to the study through a review of the existing literature related to this study.