IMPLEMENTING TECHNOLOGY IN SCHOOLS: PERCEPTION OF PRINCIPALS TOWARDS THE IMPLEMENTATION OF MALAYSIAN SMART SCHOOL

BY

ZAKIAH BINTI ABANG BAWI

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MANAGEMENT CENTER
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

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ABSTRACT

This study aims to investigate the perception of principals towards the implementation of Malaysian Smart School. A survey study was done using questionnaire. The samples were principals of pilot Malaysian Smart Schools and non-pilot smart schools in the Federal Territory. Data from 40 respondents were analysed. The findings revealed that the principals have positive perception towards the implementation of the Malaysian Smart School. They have a high level of understanding and knowledge on the Malaysian Smart School concept. However, they have inadequate skills in IT and computer usage. Principals' understanding and knowledge on the Smart School concept has a significant relationship with their perception. Nevertheless, their skills in IT and computer usage, length of service and tenure in principalship have no significant relationship with their perception. There is no difference in perception between principals of pilot Smart School and non-pilot smart school. Being one of the flagship application in the Multimedia Super Corridor (MSC), the success of the Malaysian Smart Sschool is very important to the country. The project is being piloted since 1999. The findings of the study can augment the results of the pilot project by way of providing input to the Ministry of Education as to whether administrators are keeping well abreast of the Smart School initiative. Steps must then be taken to ensure or enhance their awareness. Principals being one of the stakeholders of the Smart School component are the drivers of the educational reinvention at school level. Knowing their attitude towards the project is important for the Ministry to formulate strategies for the national roll-out.

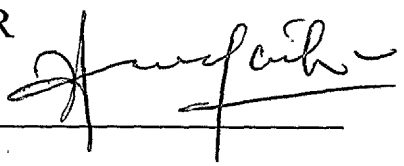
APPROVAL PAGE

TITLE OF PROJECT PAPER: IMPLEMENTING TECHNOLOGY IN SCHOOLS: PERCEPTION OF PRINCIPALS TOWARDS THE IMPLEMENTATION OF MALAYSIAN SMART SCHOOL

NAME OF AUTHOR: ZAKIAH BINTI ABANG BAWI

The undersigned certify that the above candidate has fulfilled the condition of the project paper in partial fulfillment for the degree of Master of Management

SUPERVISOR

Signature: 

Name: Dr. Husnayati Hussin

Date: 30 November 2000

ENDORSED BY:

Dr. Junaidah Hashim
Head, Master of Management Programme

Date: 30 November 2000

Dr. Obiyatullah Ismath Batcha
Executive Director, IIUM Management Centre

Date: 30 November 2000

DECLARATION

I hereby declare that this project paper is the result of my own investigations, except otherwise stated. Other sources are acknowledged by references note and a bibliography appended.

Date: 30 November 2000

Signature:

Name: ZAKIAH BT. ABANG BAWI

DEDICATION

To my mother and in memory of my late father

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In the name of ALLAH, The Beneficent, The Merciful

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INTRODUCTION

1.1 Background of Study

When computers became available for mainstream application in the 1950s, trainers in the military, business, industry and education quickly saw its potential as an instructional tool. Computers began entering the American schools systems in the 1960s with main frames and terminals and by the 1970s, with the introduction of personal computers and desk- top computing, computers were already intimately related to communication and information technology. The revolution really took off with the advent of Internet, the world- wide network of computer communication networks.

As the use of information technology became increasingly common and pervading in our daily life, parents turned to schools for a response. Parents expected schools to respond as quickly as the technology advanced.

Almost every aspect of our life now is in one way or the another ruled by computers. Employers expect output from schooling system to be equipped with and adept to such technologies. According to Bailey and Lumley (1991) the impact of technology on society and schools amounted to an information revolution. The potential of technology for transforming society is termed as the second industrial revolution. Rodden (1998) noted that the development and advancement of technologies such as higher power computers, large memory storage devices, telecommunications, and improved networking have driven this revolution.

Research projects by Bialo and Sivin (1994) indicated that technology has the potential to improve students learning. In fact much has have been written on the advocacy and the usage of information technology in the classrooms. (Stonier & Collins 1981, Maddison 1983, and Garland 1982). Howard Lainger (1997) wrote in Electronic School, June 1997 issue:

"No longer can we ask whether computers, video, and telecommunications technology will find a place in schools. The technology is here".

Technology in the form of acquiring and using information is a good advancement in civilisation. Schools, as an institution of society, have to adapt themselves to this revolution. In 1981, only 18% of the schools in the United States had access to computers for instructional purposes, this rose dramatically to almost 100% in 1995(United States Congress, 1995). The challenge for educationists today is to find the most educationally sound application for computers in the educational process and ensuring the most equitable access to technology for all students (Tate, 1998).

The most important driving force behind expansion of information technology in education has been the advent of the Internet – a network of networks spanning every nook and corner of the world. It is estimated that 20 million people are using the Internet now and the number is rapidly growing. The Internet enabled users to exchange information quickly, easily and among as many people as desired, fostering extended dialogues on any topic.

The usage of information technology in education is based on classroom research on learning theories, instruction on Piagetian concepts, early childhood cognitive and social curricula, individual differences, aptitude treatment interaction, and cognitive styles (Glaser & Resnick, 1972). The usage also addressed Skinner's technology of teaching, Gagne's condition of learning, Piaget's cognitive development theory, Bandura's observational learning theory and Weiner's attribution theory (Bell, 1985).

More recently, learning enabled by information technology took the constructivist view of educational practice. A learner is seen as an active agent, constructing meanings in response to the instructional situation. The learner is put in the driving seat of learning but of course with the teacher coaching (Duffy & Jonassen, 1991, and Liben 1987).

Perkins (1992), in *Smart Schools: From Training Memories to Educating Minds* put forward a simple theory he called Theory One which says:
"People learn much of what they have as a reasonable opportunity and motivation to learn".

The use of technology put this theory into practice by providing clear information, thoughtful practice, informative feedback and strong intrinsic motivation. This goal, however cannot be achieved overnight as teachers need a gestation period to be comfortable with the new approach and culture. It is therefore important to impart the right skills sets to the people involved that is teachers and the schools administrators as well as change their perception and mind set.

1.2 Statement of the Problems

The Smart School as the flagship application of the Malaysian Multimedia Super Corridor (MSC) can be used as the futural Malaysian school. IT plays a very critical role in our future classrooms. Teachers have to transform their roles as educators. They have to update their knowledge and skills. The Smart School establishes new expectations for students, teachers, school administrations and the communities. Some educators and administrators may not be prepared nor able to meet these expectations. Professional development helps teachers learn and acquire new roles and teaching strategies that will improve students achievement. Educators and parents need to join hands with whatever effort the programmes in an IT-enhanced community. Changing the attitude of teachers and school administrators towards change and integrating IT into the workplace are major factors to be considered. This research provides an opportunity to explore what school administrators' (principals) perception of technology implementation in schools is.

Perception is a primary source of thoughts in the future. Perception of principals towards technology implementation in schools reflects their state of acceptance to this change. Since principals are agents of change, it is therefore useful and important to learn how they perceive this change. To some extent the success of the implementation depends on the principals' attitude towards this change which is reflected via their perceptions. Furthermore, there has been no research done on perception of principals on the subject before. The findings will serve as a guide for

further research. As a means to this objective, we sought the answer to the following questions:

i. To what extent do principals know and understand the concept of the Malaysian Smart Schools?

ii. Do principals have a negative or positive perception towards the implementation of the Malaysian Smart Schools?

iii. What is the impact of their IT and computer knowledge and skills on their perception of the Malaysian Smart Schools' implementation?

iv. What other factors have an influence on principals' perception towards the implementation of the Malaysian Smart School?

1.3 Purpose of study

The purpose of the study is mainly to explore the perception of principals towards the implementation of the technology in schools particularly the Malaysian Smart Schools. In particular this study aims to look at:

i. The principals' knowledge and understanding of the concept of Malaysian Smart Schools.

ii. The principals' perception towards the implementation of the Malaysian Smart Schools.

iii. What factors influence principals' perception towards the implementation of Malaysian Smart Schools.

1.4 Hypotheses

H01: The principals do not have sufficient knowledge and understanding of the concept of the Malaysian Smart Schools.

H02: The principals do not have a positive perception towards the implementation of Malaysian Smart Schools.

H03: Principals do not have sufficient skill in using computers and IT

H04: Principals' level of knowledge and understanding of the Smart School concept has no significant relationship with their perception towards the implementation of Malaysian Smart Schools.

H05: Principals' skill in using computers and IT has no significant relationship with their perception towards the implementation of Malaysian Smart Schools.

H06: Principals' length of service in the teaching profession has no significant relationship with their perception towards the implementation of Malaysian Smart Schools.

H07: Principals' tenure in principalship has no significant relationship with their perception towards the implementation of Malaysian Smart Schools.

H08: There is no difference in the perception of principals between those of pilot Smart Schools and those of non-pilot Smart Schools.

1.5 Scope and Limitations of the Study

The study was carried out in the state of the Federal Territory in Malaysia. Principals of secondary schools answered survey questions. The study included the pilot Smart Schools and the non-pilot Smart Schools. There are several reasons for this, viz:

- Since the Smart Schools implementation is only at the pilot stage and the schools are scattered all over the country, data collection which focus only on Smart Schools within the limited time frame of the research is quite impossible.
- The Smart School is to be rolled out in all schools in stages after the pilot project. All principals must be prepared for the migration in the status of the schools from the non- Smart Schools to the Smart Schools in the near future.
- Principals, being government servants are liable to be transferred to any school in any part of the country at any time. There is very real possibility that a current principal of a current non- Smart School might be transferred to pilot Smart Schools at any time. Hence, the principals must be aware of the development and implementation of the pilot Smart Schools.

It is assumed that, the respondents are aware of the implementation of the Smart Schools. It is also assumed that the principals themselves answer the survey questions without any biases or prejudice. The findings are dependent on the honesty and integrity of the answers of the respondents.

1.6 Significance of the study

Teachers are an integral part of the success of the Smart School initiative. In order that they are able to be involved, they must have deep knowledge of the concepts of the Malaysian Smart Schools as outlined in the Conceptual Blueprint of the Malaysian Smart Schools. Being one of the flagship applications in the MSC, the success of the Malaysian Smart School programme is very important to the country. The programme has been piloted since 1999 and the findings of this study can augment the results of the pilot project by way of providing input for the Ministry of Education as to whether

teachers and administrators are keeping abreast of the Smart School initiative. Steps must be taken to ensure and enhance their awareness.

It is hoped that the findings would help to determine the level of readiness of the teachers and administrators in case they are asked to serve in a Malaysian Smart School. Any shortcomings should be addressed by the Ministry to increase this level of readiness.

The findings will set the tone for further studies on the subject. Together with the findings of the other researchers on the Malaysian Smart Schools, the findings of this research will serve as input for the planning of the broad roll out of the Smart Schools throughout the country in the future.

1.7 Definition of Terms

In The Malaysian Smart School, A Conceptual Blueprint, the Malaysian Smart School is defined as:

"A learning institution systemically reinvented in terms of teaching learning practices and school management in order to prepare the school children for the challenges of the information age" (page 20)

The term *systemic* refers to the components of the Smart School perceived as systems and these systems have to be reinvented. The systemic change involves the teaching learning processes, the school management system, the human resources, the processes in the Smart School, and technology enablers.

Perception is defined as the process where people select, organise, and interpret information (Greenberg & Baron, 1997).

Information technology (IT) is a term that encompasses all forms of technology used to create, store, exchange, and use information in its various forms (business data, voice conversations, still images, motion pictures, multimedia presentations, and other forms, including those not yet conceived). It's a convenient term for including both telephony and computer technology in the same word. It is the technology that is driving what has often been called "the information revolution".

In the context of the Malaysian Smart School, information technology includes the hardware and the software used as the enabler for the teaching learning practices and managing the school.

1.8 Organisation of the Project Paper

This study is organised in five chapters. The first chapter discusses the background of the study, the statement of the problem, purpose of the study, hypotheses, the scope and limitations of the study, significance of the study and definition of several important terms.

Chapter two reviews the literature. The discussion will include information technology and its impact on teaching and learning. The characteristics of information technology in schools and the strategies in implementing them will also be discussed. Further, implementing information technology in Malaysian schools will be presented along with the Malaysian Smart School concept and the implementation plan. This

chapter also describes the role of the school principals in assimilating technology in schools. Finally perceptions and studies pertaining to it will be presented.

Chapter three outlines the research strategies, sample selection, the research instruments, data collection technique and data analysis techniques.

Chapter four presents the data analysis and results of hypotheses testing.

Chapter five provides the conclusion and implications of the study. Major findings are discussed and interpreted preceded by discussion on the implications, limitations of the study and future research directions.

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

This chapter is divided into sections that include the description of information technology and its impact on teaching and learning. The characteristics of information technology in schools and the strategies in implementing them are also discussed. Further, implementing information technology in Malaysian schools is presented along with the Malaysian Smart School concept and the implementation plan. This chapter also describes the role of the school principals in assimilating technology in schools. Finally, perception and studies pertaining to it are forwarded.

2.2 Information Technology in Education

The pervading use of information technology (IT) in the world today necessitates the education system to introduce IT in schools. One of the basic reasons why IT was introduced at the school level is to equip the students with the competencies in IT and thus would produce an IT literate work force that is able to meet the challenges of the Information Age (Curriculum Development Centre, Ministry of Education, 1998). With the world moving into higher technology industries and services, school leavers have to be equipped with the necessary knowledge and skills in IT (Unesco, 1985).

The shift from the traditional teacher centred teaching to that of students centred teaching began in the 1960s (Ellington, Percival and Race, 1997) with Keller Plan of teaching-learning. The shift provided the students with the freedom to learn in an