COMPUTER LITERACY, ATTITUDE AND USAGE LEVELS AMONG MANAGEMENT PERSONNEL IN URBAN SECONDARY SCHOOLS IN KUCHING, SARAWAK

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A thesis submitted in partial fulfillment of the requirement for the Degree of Master of Science

Faculty of Cognitive Sciences and Human Development
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2000
DECLARATION

I declare that this thesis entitled “Computer Literacy, Attitude and Usage Levels Among Management Personnel in Urban Secondary Schools in Kuching, Sarawak” is my own work except for the literature reviews, of which I have cited the sources.

Basil Clement Andrews
December, 2000
DEDICATION

For my lovely wife, Jane,
for her constant love and support,
and
for my three wonderful daughters,
    Joanna, Rhema and Dorea,
for their joyfulness and love.
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Thank you Lord for Your blessings. All knowledge and wisdom come from You. The fear of the Lord is the beginning of wisdom and knowledge.

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31 December 2000
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ABSTRACT

The main purpose of this study was to describe the computer literacy (CL), attitude towards computer (ATC) and computer usage (CU) levels and to ascertain their inter-relationship among management personnel in urban secondary schools in Kuching. In addition, the study also determined if there were differences in CL, ATC and CU levels based on demographic factors such as computer ownership, access to an office computer, number of computer training courses attended and number of years of computer experience. A further interest was the determination of the ranking of factors perceived by management personnel in urban secondary schools as important towards the development and use of IT in school administration. The respondents in this study were 90 management personnel from 29 urban secondary schools in Kuching, Sarawak. The questionnaire used to measure CL, ATC and CU were adopted from previous studies (Sia, 1999, Trang, 1999 & Muriatun, 1998). The findings in this study were: (a) 82.2% of respondents had CL levels below the Intermediate level; (b) 95.6% of respondents had a positive ATC level; (c) 77.8% of management personnel did not have a high CU level; (d) the three most important factors influencing development and use of IT in school administration were Management ATC levels followed by Financial Allocation and Management CL levels; (e) there were significant and positive correlations between CL, ATC and CU, and; (f) there were mixed findings for differences in CL, ATC and CU levels based on differences in demographic factors such as computer ownership, access to an office computer, number of computer training courses attended and years of computer experience. Recommendations were also made to: (a) relevant authorities to conduct more computer training courses and provide more funds for IT projects in schools; (b) management personnel to have more initiative in upgrading their IT skills; (c) parents-teachers association, community and society at large to lend more support in upgrading IT facilities in schools, and; (d) researchers to conduct similar studies in other settings and investigate factors influencing the development and use of IT in schools.
ABSTRAK

Tujuan utama kajian ini ialah untuk menguraikan tahap literasi, sikap dan penggunaan komputer serta menentukan hubungan mereka di kalangan pihak pentadbir sekolah-sekolah menengah di bandar Kuching. Kajian ini juga menentukan samada terdapat perbezaan di antara tahap-tahap literasi, sikap dan penggunaan komputer berasarkan perbezaan faktor-faktor demografi seperti pemilikan komputer peribadi, akses terhadap komputer di pejabat, bilangan kursus latihan komputer yang telah dihadiri dan bilangan tahun pengalaman menggunakan komputer. Satu lagi matlamat ialah penentuan kepentingan faktor-faktor yang mempengaruhi perkembangan dan penggunaan teknologi maklumat dalam pengurusan sekolah. Responden terdiri daripada 90 orang di kalangan pihak pentadbir dari 29 buah sekolah menengah di kawasan Bandar Kuching, Sarawak. Soal selidik telah diambil dari kajian-kaian lepas (Sia, 1999, Trang, 1999 & Muriatun, 1998). Dapatan kajian ini adalah: (a) 82.2% responden mempunyai tahap literasi di bawah tahap Sederhana, (b) 95.6% responden mempunyai sikap positif terhadap komputer, (c) 77.8% responden tidak mempunyai tahap penggunaan komputer yang tinggi; (d) tiga faktor yang paling banyak mempengaruhi perkembangan dan penggunaan teknologi maklumat dalam pengurusan sekolah adalah tahap Sikap Pentadbir terhadap Komputer diikuti oleh Peruntukan Kewangan dan tahap Literasi Komputer pihak Pentadbir; (e) terdapat korelasi yang positif dan signifikan di antara tahap literasi, sikap dan penggunaan komputer, dan; (f) pelbagai dapatan diperolehi berkenaan dengan samada wujud perbezaan tahap literasi, sikap dan penggunaan komputer berasarkan perbezaan dalam faktor-faktor demografi seperti pemilikan komputer peribadi, akses terhadap komputer di pejabat, bilangan kursus latihan komputer yang telah dihadiri serta bilangan tahun pengalaman menggunakan komputer. Cadangan kajian ini adalah: (a) pihak berkuasa menjalankan lebih banyak kursus latihan komputer dan memberi peruntukan kewangan yang lebih banyak untuk project IT di sekolah; (b) agar pihak pentadbir sekolah lebih berinisiatif meningkatkan literasi IT mereka; (c) agar Persatuan Ihabapa dan Guru dan masyarakat umum lebih berusaha untuk membantu sekolah-sekolah mendapat kemudahan IT; dan; (d) agar kajian yang serupa dijalankan di persekitaran yang lain serta menjalankan kajian terhadap faktor-faktor yang mempengaruhi perkembangan dan penggunaan IT di sekolah.
CHAPTER ONE

INTRODUCTION

1.0 Background

The world is now in the Information Age where access to information is an essential element in society. Information and Communication Technologies (ICT) involving computers, telecommunication devices and networking facilities allow us to send, access and store information wherever we are and whenever we want. This is the Information Revolution or Third Wave according to Toffler (1980) where the success of a nation or organisation will depend on the capabilities and knowledge of its people and workers.

The future is that of a knowledge society where access to knowledge will have substantial impact on progress, development and competitiveness. In a knowledge-based society, organisations need to be knowledge-intensive and knowledge-enabled.

Having foresight that a knowledge-based society is the cutting edge for the future, Malaysia launched Vision 2020 in 1991 with nine central strategic challenges to set the course for the nation to progress from a developing nation to a fully-developed nation ready for the Information Age.

One of these challenges is to establish a scientific and progressive society. Another challenge is to establish a prosperous society with a competitive, dynamic and robust economy particularly focused on development in the sphere of Information Technology. To accomplish these challenges outlined in Vision 2020, the Multimedia Super Corridor (MSC) was launched in 1996. The MSC is part of Malaysia’s strategic planning to propel the nation into the Information Age by developing a knowledge-based society.

The Malaysian government recognises the strategic importance of Information Technology (IT) in national development by devoting a chapter to IT in the Seventh Malaysian Plan. A National Information Technology Council (NITC) was established to this end to help generate and create an information-rich society as aspired in Vision 2020. This Council has formulated a national IT agenda to transform Malaysia into a knowledge-based society and one of its objectives is “to enhance and encourage the use and development of IT, with the objective of improving the performance of organisations and individuals at all levels of society.”

Computerisation of government departments is vital towards this end. Information and information flow are very important resources in public organisations which in turn, reflect their level of effectiveness and efficiency. Computerisation has been a major focus of many government departments with the objective of improving the productivity and operational functions (Ahmad Sarji, 1993).

The Malaysian Smart School project, a flagship of the MSC, is a strategy to introduce IT in schools. Under this project, IT will be used where possible and beneficial in the teaching-learning process, student assessment and school administration. One of the objectives of Smart Schools is the streamlining of school administration through the use of IT. This means that school managements would be computerised and online in time to come (Smart School Task Force, 1997).
Computerising school administration is therefore a crucial component in establishing Smart Schools. Schools are growing in size and this inadvertently brings about an increase in the scope of activities made available to students. Consequently, school administration becomes a more daunting task with an ever-increasing amount of managerial duties (Wan Zahid Mohd Nordin, 1993). Evans (1986) suggested that school administrators should look to computer technology to provide the mechanism to keep abreast with the demands of current and documented information.

Having computer-literate management personnel is a good solution, given such a scenario. A paragraph from Dr Mahathir's keynote address "Vision 2020-Malaysia: The Way Forward" (Mahathir Mohamad, 1991) states this:

... the Malaysian society must be information-rich. It can be no accident that there is today no wealthy, developed country that is information poor and no information-rich country that is poor and undeveloped. Computer Literacy is a must if we want to progress and develop. No effort must be spared in the creation of an information-rich Malaysian society (para. 79-80).

In line with this aspiration, the management personnel in the education sector have to be computer literate too. Since one of the flagships of the MSC is the Smart Schools, every school as an organisation, must manage itself towards excellence in the information age or be left behind. To ensure relevance in a digital world, the school management personnel must have the competencies necessary to implement and adopt Information Technology in school administration. To achieve this, there is a dire need for school management personnel to be computer-literate to become effective prime movers in adopting ICT in schools.

Cheever, Coburn, Kelman and Lowd (1986) contended that for schools to be successful in implementing educational computing, school-leaders must necessarily learn about computers and their usage.

1.1 Statement of the Problem

The objectives of the Smart Schools (Mahathir, 1998) are:

- a. using technology to radically transform and improve teaching practices, school organisation and student performance,
- b. accelerating the development of student learning, critical thinking and creativity, and;
- c. enhancing IT literacy and penetration

Hence, the introduction of IT is critical to achieving these objectives which lie squarely on the shoulders of management personnel. How prepared then are our school management personnel to lead in this endeavour of introducing IT in schools? Their current computer literacy level and attitude towards computers are some of the issues that have to be addressed for the successful introduction of IT and its usage in schools.

This research then aims to investigate the relationship between computer literacy levels, attitude towards computers and computer usage levels among management personnel in urban secondary schools in Kuching.
1.2 Purpose of the Study
The purpose of this study is to determine the relationship between computer literacy levels, attitude towards computers and computer usage levels among management personnel in urban secondary schools in Kuching. A further interest is to determine whether there are differences in computer literacy levels, attitude towards computers and computer usage levels based on demographic variables such as number of computer courses attended, computer experience, computer ownership and access to an office computer.

1.3 Objectives of the Study
This study will specifically investigate the:

a. computer literacy (CL) levels of management personnel in urban secondary schools in Kuching.

b. attitude towards computers (ATC) of management personnel in urban secondary schools in Kuching.

c. computer usage (CU) levels in school administration among management personnel in urban secondary schools in Kuching.

d. relationship between CL, ATC and CU levels of management personnel in urban secondary schools in Kuching.

e. ranking of the listed factors perceived by management personnel in urban secondary schools in Kuching as important in influencing the development and use of IT in school administration.

f. differences in CL levels between respondents with different demographic variables such as number of computer courses attended, computer experience, computer ownership and access to an office computer.

g. differences in ATC levels between respondents with different demographic variables such as number of computer courses attended, computer experience, computer ownership and access to an office computer.

h. differences in CU levels in school administration between respondents with different demographic variables such as number of computer courses attended, computer experience, computer ownership and access to an office computer.

1.4 Research Questions
This study examines the following research questions:

a. What is the CL level of management personnel in urban secondary schools in Kuching?

b. What is the ATC level of management personnel in urban secondary schools in Kuching?

c. What are the CU levels with regard to school administration purposes of management personnel in urban secondary schools in Kuching?

d. What is the ranking of the listed factors as perceived by management personnel in urban secondary schools in Kuching in influencing the development and use of IT in school administration?

e. Are there significant differences in CL levels between management personnel with different demographic variables such as number of computer courses attended, computer experience, computer ownership and access to an office computer?

f. Are there significant differences in ATC levels between management personnel with different demographic variables such as number of computer courses attended, computer experience, computer ownership and access to an office computer?
attended, computer experience, computer ownership and access to an office computer?

g. Are there significant differences in CU levels between management personnel with different demographic variables such as number of computer courses attended, computer experience, computer ownership and access to an office computer?

h. Is there a significant relationship between CL and ATC levels among management personnel in urban secondary schools in Kuching?

i. Is there a significant relationship between CL and CU levels among management personnel in urban secondary schools in Kuching?

j. Is there a significant relationship between ATC and CU Levels among management personnel in urban secondary schools in Kuching?

1.5 Research Hypotheses

The following null hypotheses are formulated from the above research question:

- \( H_0^1 \): There is no significant relationship between CL and CU among management personnel in urban secondary schools in Kuching.
- \( H_0^2 \): There is no significant relationship between CL and ATC among management personnel in urban secondary schools in Kuching.
- \( H_0^3 \): There is no significant relationship between ATC and CU among management personnel in urban secondary schools in Kuching.
- \( H_0^4 \): There is no significant difference in CL levels between management personnel who own computers and those who do not.
- \( H_0^5 \): There is no significant difference in CL levels between management personnel who have access to an office computer and those who do not.
- \( H_0^6 \): There is no significant difference in CL levels between management personnel who have attended different number of computer training courses.
- \( H_0^7 \): There is no significant difference in CL levels of management personnel who have different amount of computer experience.
- \( H_0^8 \): There is no significant difference in ATC levels between management personnel who own computers and those who do not.
- \( H_0^9 \): There is no significant difference in ATC levels between management personnel who have access to an office computer and those who do not.
- \( H_{10} \): There is no significant difference in ATC levels between management personnel who have attended different number of computer training courses.
- \( H_{11} \): There is no significant difference in ATC levels between management personnel who have different amount of computer experience.
- \( H_{12} \): There is no significant difference in CU levels among management personnel who own computers and those who do not.
- \( H_{13} \): There is no significant difference in CU levels among management personnel who have access to an office computer and those who do not.
- \( H_{14} \): There is no significant difference in CU levels among management personnel who have attended different number of computer training courses.
- \( H_{15} \): There is no significant difference in CU levels among management personnel who have different amount of computer experience.

1.6 Operational Definitions

For the purpose of this study, the terms below are defined as follows: -
1.6.1 Attitude
Attitude is defined as an organised and enduring set of beliefs and feelings towards some objects or situations. It is a predisposition to behave in a particular way towards an object or a situation. It encompasses our affective, behavioural and cognitive domains. In this study, attitude refers to a person’s belief, perception and feelings regarding IT and behaviour towards its use.

1.6.2 Computer Literacy
Computer literacy is defined as the perceived level of expertise and familiarity (knowledge, skills and understanding) with computers with regard to one’s ability to use software applications such as word processors (MS Word), spreadsheet (Excel), databases (Access), presentation (Powerpoint), web browsers (Internet Explorer) and operating systems (Windows) and hardware computer components and peripherals.

1.6.3 Computer Literacy Levels
The perceived levels are categorized based on Lindsay Unified School District’s (LUSD) (1991) definitions which defines the levels as:

a. Novice: A person who perceives himself as not knowing a particular computer related task or could not understand it,

b. Beginner: A person having a little bit of experience and can complete basic tasks.

c. Intermediate: A person who perceives himself as having the ability to complete complex tasks but often needs help to figure things out.

d. Advance: A person who perceives himself as having the ability to complete complex tasks and solve problems as they arise and are often consulted upon.

e. Expert: A person who perceives himself as having the ability to complete complex tasks, solve problems as they arise and can make changes to software, operational systems, maintain the computer and make it run better. He is able to train others.

1.6.4 Computer Usage
Computer usage in school administration encompasses activities such as typing, storing, analyzing, retrieving, printing, presenting, communicating and managing data and information related to school administration.

1.6.5 Management Personnel
Management personnel refers to the Principal, Senior Assistant (Academic), Senior Assistant (Student affairs), the Afternoon Supervisor and the 4 senior teachers (Languages, Sciences & Mathematics, Technical & Vocational and Social Sciences) in each school.

1.6.6 Secondary Schools
Secondary schools is defined as government schools which provide secondary education for 5 or 7 years (Education Act, 1996, p 18). This refers to schools providing classes from Form One to Form Three, Form One to Form Five or Form One to Form Six.

1.6.7 Urban Secondary Schools
Urban secondary schools are secondary schools located within a 25-km radius of the city of Kuching.
1.6.8 School Administration
The activities and tasks involved in the management of a school are regarded as school administration. It encompasses all activities and tasks conducted by management personnel excluding teaching. In this study, school administration covers the following functions:

a. Curriculum Management
   The tasks involved include academic calendar planning, annual program planning, allocation of teacher’s duties, scheduling and conducting academic meetings, examination results analysis, time-tabling, scheduling the use of laboratory, workshops and resource centres,

b. Co-curriculum Management
   The tasks involved include co-curricular activities calendar planning, scheduling co-curricular activities, inventory records keeping, allocation of teacher’s duties, student co-curricular records, correspondence and report writing,

c. Student Management
   The tasks involved include student registration, student personal records, student discipline records, counseling records, PTA records, student welfare, issuance of student certificates, correspondence and writing of reports, and;

d. General Management
   The tasks involved include e-communication, conducting staff meeting and briefings, financial planning and records, preparing reports, preparing working papers and personnel management.

1.7 The Research Framework
The research framework for this study is as follows:

With reference to Figure 1, the dependent variables for this study are CL, CU and ATC whereas the independent variables are the demographic factors such as computer ownership, access to an office computer, number of computer training courses attended and computer experience.
1.8 Significance of Study
IT is a pivotal component in the implementation of Smart Schools. Management personnel play a dominant role in introducing and adopting IT in school. A computer illiterate and computer phobic key personnel in the management circle can definitely impede instead of facilitate the effort to establish an IT-conducive environment in the school.

Hence the findings of this study will be useful for:

a. planning computer literacy courses for management personnel,
b. planning for infrastructure development in schools that need IT technology, and;
c. taking actions to establish a positive atmosphere towards implementing IT administration in schools.

1.9 Limitations of the Study
As questionnaires are used for data collection, the respondents’ truthfulness and honesty in giving their responses can affect the findings.

Another factor that can affect the findings is the attitude of respondents towards this research. If they perceive it as threatening then they might not respond truthfully.

The findings should not be generalised to other schools as the study is confined to Kuching. Accessibility, exposure and economics related to IT are factors that might be different in other towns.
CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction
This chapter will cover the following areas pertaining to the investigation in this study and they are computers in school administration, computer literacy, attitude towards computers, computer usage, relationship between computer usage and attitude towards computers, relationship between computer usage and computer literacy, empirical studies on computer literacy, computer usage and attitude towards computers and the demographic variables like number of courses attended, computer ownership, availability of office computer and years of computer experience; and theories on the role of management personnel in the adoption of computers and IT in school administration.

2.1 Computer in School Administration
In this information age, organisations compete to use IT as a new tool for processing and accessing information. IT helps organisations to collect, store, retrieve and apply knowledge to solve problems (Lucas, 2000). Zey (1994) stressed the rapid change in skills required for workers in the information age. This era requires workers who can think, create, write, calculate, and master the rudiments of computer applications. The office environment in this era is compelled to become more of an electronic office than ever before.

Hence, electronic governance or E-government, one of the flagships of the MSC, endeavours to shift the public service (inclusive of public institutions of learning) into the digital world. It intends to upgrade the effectiveness and efficiency of the administrative machinery through the use of IT (Mohammad & Balan, 1999).

In line with this vision, school management are forced to display a more active approach in adopting IT in their administration in order not to be left out from the technological bandwagon.

The Ministry of Education took the lead by launching its nationwide computerisation project in 1990. This eventually led to the birth of the Smart Schools in Malaysia, as one of the flagships of the MSC. Although this project was not focused on administration per se, but rather on computers in education (CIE), it inevitably led to the realisation of a need for teachers to be computer-literate in order to run the programme (Lee, 1999).

In 1996, a program called “Jaringan Pendidikan” or Education Network was implemented to link schools all over the country to share a common database. This significantly marked the beginning for school administrators nationwide to share and disseminate information amongst themselves.

Hawkridge (1990) highlighted the absence of emphasis on computers in school administrations as a component in the computer-in-education (CIE) programmes. He further stressed that the usage of computers could improve managerial efficiency in schools.
Cheever et al. (1986) listed four advantages for computerising the school administration. These include:

a. a reduction in administrative cost,
b. an improvement in the efficiency level of operational administration,
c. an increase in output, and;
d. a support base for the teaching and learning programmes.

Chong (1993) reported that the use of computers in school administration brings the following benefits:

a. reports can be easily and quickly completed and be available by the required time,
b. updating of information can be easily performed,
c. electronic filing is systematic and requires little space enabling information to be easily and quickly retrieved, and;
d. less time is needed in completing administrative task using computers.

Spuck and Atkinson (1983) reported that with the use of computers in administration, administrators now have more time to concentrate on improving the quality of teaching and learning activities.

According to Ellis (1984), the administrative use of computers in the school falls into four categories namely, data management, data analysis, word processing and communications. Some of these tasks include student records, personnel records, inventories of equipment, financial records, sports programme and energy management. He further alluded that computers can vastly improve the efficiency of data management, data analysis and communication in the school office.

Kosakowski (1998) reported that teachers and administrators use computers and information technology to improve their roles in the following:

a. streamlining record-keeping administrative tasks thereby helping to free time for teaching and professional development, and;
b. decreasing isolation by using e-mail and the internet to communicate with colleagues, parents and the outside world.

Kabir and Kaur (1992) stated that the incorporation of a computer database would help ease the collection, storage, processing, retrieval and utilisation of information on educational resources of all kinds whatever their format and wherever their location. They went on to report that the availability of computers would inevitably help overcome issues and concerns associated with IT. The computer can shorten the time required to carry out a search, confirm availability of resources and get more information than if done manually.

Visscher (1996) added that the use of computers could help to improve the efficiency and effectiveness in the operation and management of school organisation.

Kong and Lee (1998) in a study of IT proficiency among 66 West Malaysian secondary school principals who attended sessions on “The Preparation for the Implementation of the Smart Schools” in Kuala Lumpur in June 1998, reported an urgent need for principals to be IT proficient or literate in order to administrate their schools efficiently.
It can be seen from the many findings and articles written reporting the benefits and importance of computer usage in school administration that the trend is towards more IT usage. IT usage attributes to increased efficiency in accomplishing administrative task. Hence, in the future there will be more computer usage in all aspects of school administration and management.

2.2 Computer Literacy (CL)

The Grolier International Dictionary (Morris, 1981) defines literate as “acquainted with the letters or literature; educated, learned or instructed”. Hence, computer literacy would mean acquainted, educated, learned and instructed with respect to computers. Briefly, this would mean the ability to understand and use computers.

In the early years of computer technology, a computer-literate person must know a programming language (Cobol, Pascal or Fortran) and be able to use a pre-programmed application to perform a task (Coburn, Kelman, Roberts, Synder, Watt & Weimer, 1985).

According to Kasprzyk (1998), prior to the arrival of point and click technology, being computer-literate meant knowing at least one programming language in order to use a computer. Currently, a computer-literate person is expected to know certain softwares of which the minimal list includes an operational system (eg. Windows 95), a word processor (eg. Word 97), a spreadsheet (eg. Excel 97), a mail application (eg. Outlook Express), a browser (eg. Internet Explorer) and a presentation tool (eg. Power Point 97).

Langhorne, Donham, Gross and Rehmke (1989) viewed computer literacy as having the ability to perform basic operations viz to key in data, to print, to use a variety of applications such as word-processing, spreadsheets, data bases, graphics, desktop publishing, information storage and retrieval and also computer-assisted instruction.

Simonson and Thompson (1990) viewed computer literacy as having competencies in understanding basic principles of programming, applications for computers, general concepts of a computer system and a positive anxiety-free attitude towards the use of computer technology.

Webopedia (1999) defined computer literacy as the level of expertise and familiarity someone has with computers in software applications.

For the purpose of this study, based on the above definitions, computer literacy is defined as:

- the acquisition of computer knowledge and experience for its intelligent and efficient usage in one’s task,
- the ability to use computer software for practical tasks,
- the ability to use the common software application programmes (such as Word 97, Excel 97 and Power Point), and;
- the ability to use the internet for purposes of communication (e-mailing) and obtaining information (Internet Explorer).

2.3 Attitude Towards Computers (ATC)

Rosenberg and Hoyland (1980) defined attitude as comprising three domains namely cognitive, affective and behavioral. The cognitive domain refers to what a person believes with regard to a subject matter. The affective domain refers to what a person
feels about the subject matter and how he evaluates it whilst the behavioral domain describes how a person responds towards the subject matter based on the above two domains.

Hence, ATC refers to a person’s set of beliefs, perception and feelings regarding computer and his response towards its presence and usage. In this study, ATC refers to a person’s response (behavioral) to the presence and use of computers. It includes the person’s perception of its usefulness (cognitive), feelings of favourableness or unfavourableness (affective) and acceptance or rejection of IT in the workplace.

2.4 Computer Usage (CU)
Kong and Lee (1998) conducted a study on CU among potential principals of smart schools and defined CU as encompassing the use of word processor, spreadsheet, database, graphics, research on the Internet and e-mail facility.

In her study on the attitude of administrators in secondary schools in Kuching towards CU, Salawati Hj Talib (1998) aggregated typing, saving, printing, analysing, data retrieval, data management and communication as computer usage in school administration.

Muriatun Mohd Said (1998) in her study on computer usage for administrative purposes among senior teachers in secondary schools in Segamat, Johore, categorised CU into three main domains:
- a. management of the curriculum,
- b. management of student data, and;
- c. management of co-curriculum.

Zuraini Abdullah (1993) stressed that the use of computer software such as word processing, spreadsheet, database and graphics can help school administrators complete their task more efficiently and faster. CU is regarded as the ability in using these software programmes.

Ellis (1984) categorised CU in schools into four main administrative uses of:
- a. word processing,
- b. data management,
- c. data analysis, and;
- d. communications.

In this study, CU covers tasks performed in the following domains:
- a. management of the curriculum,
- b. management of the co-curriculum,
- c. management of student data, and;
- d. management of staff data and office administration.

2.5 Relationship between Computer Literacy (CL), Attitude Towards Computers (ATC) and Computer Usage (CU)
A survey of the literature on previous studies and investigations to determine the relationship between CL, CU and ATC are highlighted below.