A STUDY ON THE DIFFERENCES IN THE LEVELS OF COMPUTER
ANXIETY AND COMPUTER LITERACY DUE TO DEMOGRAPHIC FACTORS
AMONG EMPLOYEES IN MULU NATIONAL PARK, SARAWAK

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A thesis submitted
for partial fulfilment 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 "A Study on the Differences in the Levels of Computer Anxiety and Computer Literacy Due to Demographic Factors Among Employees in Mulu National Park, Sarawak" is my own work except for the literature reviews, of which I have cited the sources.

Edward Laing Epoi
December, 2000
DEDICATION

For my beloved parents, sisters and brothers,
for their unwavering love, support and confidence,

For my colleagues and friends,
for their advice, guidance and assistance,

For those I call “family”,
A Big “THANK YOU” for being there…
ACKNOWLEDGEMENT

My sincere thanks and gratitude to those wonderful people the Almighty placed along my path, guiding and encouraging me, lest I easily surrender.

My heartfelt gratitude to my supervisor, Dr. Ngu Bing Hiong for her invaluable advice, perceptive comments, and guidance throughout the progress of this study.

My deep appreciation goes to those individuals who have made this study possible: The Management of Royal Mulu Resort, Miri; the Forestry Department, Kuching Headquarters and Mulu Base Camp, and all those participants who had helped during the data collection.

My gratitude and thanks to the Ministry of Education Malaysia for the opportunity to further my studies, the Director of Institut Aminuddin Baki, the Dean of Cognitive Sciences and Human Development and members of the faculty, for their kind support and assistance.

To all my friends and colleagues, especially those in Cohort 5 UNIMAS 2000, thanks for everything.

Edward Laing
December, 2000
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The purpose of this study was to describe the differences in the levels of Computer Anxiety and Computer Literacy due to demographic factors among employees in Mulu National Park, Miri, Sarawak. The demographic features investigated were gender, age groups, highest academic qualification, working experience, computer experience with different software, number of computer courses attended and computer ownership. A survey questionnaire adapted from the Lindsay Unified School District Technology Literacy Survey (1999) was used to elicit information from 138 respondents. The finding showed that there existed a moderate negative significant relationship between CA and CL ($r = -.388$, p<.01). Besides that, the other findings were: (i) employees had low anxiety; (ii) employees had low computer literacy; (iii) significant differences exist in computer anxiety between different age groups, different years of working experience with different software, and computer ownership. No significant differences existed in computer anxiety levels for employees’ gender, different number of computer courses, and computer ownership.
ABSTRAK

Kajian ini bertujuan untuk menjelaskan perbezaan-perbezaan bagi tahap-tahap kegelisahan terhadap komputer dan literasi komputer berdasarkan ciri-ciri demografik di kalangan pekerja-pekerja di Taman Negara Mulu, Miri, Sarawak. Ciri-ciri demografik yang dikaji termasuk jantina, umur, kelayakan akademik, pengalaman bekerja, pengalaman menggunakan pelbagai perisian komputer, bilangan kursus komputer yang di serta dan pemilikan komputer. Soalan-soalan soalselidik diadaptasi dari Lindsay Unified School District Technology Literacy Survey (1999) digunakan untuk mendapatkan respon dari 138 orang pekerja. Dapatan kajian menunjukkan terdapat hubungan negatif sederhana yang signifikan di antara kegelisahan terhadap komputer dan literasi komputer (r = -.388, p<.01). Selain itu, dapatan-dapatan lain termasuklah: (I) pekerja-pekerja mempunyai kegelisahan yang rendah terhadap komputer; (ii) pekerja-pekerja mempunyai tahap literasi yang rendah; (iii) wujudnya perbezaan signifikan dalam kegelisahan terhadap komputer antara umur yang berbeza, pengalaman bekerja dengan perisian berbeza, dan pemilikan komputer. Didapati tidak wujud perbezaan signifikan dalam kegelisahan terhadap komputer antara jantina, jumlah kursus komputer yang berbeza, dan pemilikan komputer.
CHAPTER ONE

INTRODUCTION

1.0 Background

1.1 Information Technology in Malaysia

The advent of information technology (IT) has much to do with the implementation of modernization efforts in the civil service of Malaysia. IT has been utilized as a tool to assist in planning, monitoring, control and decision-making, resulting in improved systems procedures towards the evolvement of a successful work culture. (Selby, 1993)

Malaysia's launching into the Information Age began with Vision 2020 which was enunciated in 1991, and which struck a responsive chord in the hearts and minds of Malaysians of all stations, creeds and political affiliations. (Mahathir Mohamad, 1991). Such was the impact of the Vision 2020 that the nation has to develop an Information Technology (IT) Agenda to support it. Among others, the IT Agenda outlines various strategies which will help the nation to become a knowledge society “through the development of people, infrastructure and applications”. (Mahathir Mohamad, 1991).

Yet, the glossy picture of a nation well trained in the use of Information and Communications Technologies (ICTs) such as computers is still in want. Malaysia's corporate world of the new millennium demands her work force to be well trained in computer technologies in order to have that so-called competitive edge. As such, major organizations and corporations throughout the nation have to consistently and constantly keep their workforce abreast with the development of ICTs. A well-trained and knowledgeable worker is an asset to the organization.

At present, is our nation's workforce equipped with the necessary competencies in using IT? Indeed, what are the workers' computer literacy levels? Are the workers able to accommodate the rapidly changing needs of the employer, or vice versa? Do the workers' computer anxiety (CA) levels influence their computer literacy (CL) levels?

1.1.1 Researches on Computer Literacy

As the need for computer literacy grows, studies have to be conducted on the diversified areas of computer usage. In the realm of academia, there are extensive researches on educators on their computer literacy level. In a study by Kay (1993), he reported that pre-service teachers rated themselves as having “low” software knowledge and “very low” programming skills. In yet another study, Hignite & Echternacht (1992) posited that respondents have low literacy level even though their attitudes toward computers are positive. Smith & Necessary (1996) found that variables such as computer experience, computer familiarity and use and computer ownership influenced computer literacy.

Research conducted by Lisensky, Pfister, and Sweet (1985) verified the idea that an educated person has knowledge, skill, and vision to deal with a complex world and the ability to anticipate and help shape the future. Likewise, in the workplace, there are
increasing demands upon educated employees to adopt computer based work systems that create an emphasis on developing the necessary content work skills to accomplish any task.

1.1.2 Directions of Computer Related Studies

The local trend in computer related studies appear to focus a lot more in the field of education. Such direction or focus is indeed necessary as educators play an important role in meeting the growing need of a computer literate society. As a young nation, Malaysia has just recently devised her IT agenda. She focused on seven applications. One of the applications is the Smart School Project whereby IT is incorporated directly into the school curriculum that aims to prepare students with IT knowledge and skills. Universities and higher institutions across the nation have each set up an IT faculty in order to produce graduates for the IT employment market. Efforts to increase computer literacy of employees in many organizations have also been extensively carried out. (NST, Aug. 26, 2000)

1.1.3 Employees’ Participation in Attainment of Vision 2020

It is Malaysia’s aspiration that the status of a developed nation by 2020 ensures a workforce that mirrors the characteristics of the Malaysian economy characterized by the followings. First, all her employees must be proactive, and able to adapt to changes quickly. Second, her workforce must also be technologically proficient, fully able to adapt innovative ideas. Third, the workforce must be in possession of brain-power, skill and diligence, having access to a wealth of information, with the knowledge of what to do and how to do it. Fourth, the workforce must also be entrepreneurial, self-reliant and outward-looking. Last, but not least, her workforce must have exemplary work ethics, quality consciousness and the quest for excellence. (Dato’ Zainal Abidin, 1999)

1.1.4 Employees and IT Training

The employees of this nation are fully aware of the rapid changes taking place around them, be it in the social, technological, economic and political contexts occasioned by the combined effect of globalisation and spread of IT (Dato’ Zainal Abidin, 1999). The demand for technicians and skilled workers will continue to increase as Malaysia heads for industrialization and more and more industries shift to higher technology production process.

Let us consider one excerpt by Dato’ Zainol Abidin the secretary general of the Ministry of Human Resources, Malaysia. He stated that as of May 21, 1991, a major restructuring of Malaysia’s vocational and skills training system as recommended by Cabinet Committee on Training, was undertaken. The three principal objectives of the policy reforms were (i) improving the responsiveness of public training to market demand; (ii) expanding the role of the private sector; and (iii) strengthening linkages between training and technological change (Dato’ Zainol Abidin, 1999).

Thus, there are many new institutes that focus on training for the manufacturing and information technology sectors. Predictably, a measure of what level of computer literacy our employees are at present should provide the clues for future considerations in IT training components.
For instance, combined efforts by some major organizations have helped set up the Penang Skills Development Centre (PSDC). It was opened in 1989 to provide technical training courses for Small to Medium Enterprises (SMEs) and multinationals in the Penang area besides forming strategic alliances with other training institutions and equipment vendors to organize courses of benefit to the manufacturing sector.

1.1.5 Employees and Computer Anxiety

Contemporary business environments place increasing demands on employees to adopt computer based work systems and practices. They emphasize on not only developing the necessary content work skills for task accomplishment but identifying the presence of inhibitory influences, such as individual anxiety presented by the challenge of using and mastering unfamiliar technology, and minimizing these effects. (Kaufman, 1996)

As the computer was being introduced recently to schools on a large scale in 1992, Malaysia must expect her employees to have computer anxiety. Efforts must be undertaken to gauge the employee’s level of computer anxiety to better understand the whole scenario. Appropriate measures to rectify or minimize their computer anxiety levels through means such as computer training courses or even the basic level of “computer acquaintance” can be taken into account by various organizations.

1.1.6 Employees and Computer Literacy

The Malaysian government had taken measures to encourage her populace to increase their quality of work and well being. Through the National Information Technology Council, the National Information Technology Agenda underlined a program that involved efforts to acculturate information technology among the communities of the nation. Decisions to develop in e-Economy, e-Community, e-Education, e-Sovereignty, and e-Public Services are diligently pursued by the nation. (Hanafizan et al, 2000)

Most recently, ownership of computers amongst Malaysia's employees has been encouraged to the extent that soft-loan facilities and Employees' Provident Fund (EPF) to purchase computers are made available. Facilities such as these are given to make it easy for the people to own computers and make them and their children literate. (NST, Aug. 26, 2000)

Computers in the workplace in Malaysia are here to stay. Employees cannot avoid encounters with computers in any organizations that they work in. Thus the necessity to be computers literate becomes the norm. However, it should be understood that a certain population of the workforce comes from a generation that did not get exposed to computer usage until quite late in their lives. This group of individuals may feel inadequate in using computers and as such, this inadequacy could lead to psychological and social problems.

What is in store for the future employees? Much has to be done for employees if computer literacy is to be a norm in the workplace. Emphasis on proper education, training and consistent monitoring on the progress of computer-enhancing elements have to be conducted progressively.
1.2 Statement Of The Problem

The Malaysian government has done much to ensure that the future workforce has the ability to face the challenges of an information-based country or economy. In this era, technology and especially information technology has become the guiding force in people's lives and future endeavors. Therefore, citizens of this nation, especially employees cannot maintain ignorance or neglect of the fact. The computer literacy levels of the work force are still very low (Harris, 2000), thus requiring utmost urgency for rectification. Do we expect the work force to succeed if they remain computer illiterate? The hovering question is to what extent is our present workforce prepared to accept computer technology, and especially so for the developing rural populace.

We need to view critically the dynamics of employment that have undergone change from those criteria since Malaysia became an independent country. The entire profile of expectations of employees from employers has shifted from the industrial age model to the digital age model. What entails is that workers would have to accommodate the rapidly changing needs of the employer. Adaptability, flexibility, and generalization would become essential of both employers and employees.

The researcher is also interested to pursue the feelings of employees towards the introduction of computer into the working environment. The issue of feeling, particularly of anxiety in relation to the introduction of computers in the workplace has to be addressed if a successful computer literate working environment is our focus. Mulu National Park has been chosen as it represents a rural setting that that is fast developing into a major world attraction. As a major tourist destination in Malaysia, this spot has attracted both the government and private sectors to set up their work bases. Thus, the various bases or organizations will have to be manned with employees who are adept at computer based works systems if the organizations want to remain successful or competitive.

1.3 Operational Definitions Of Terms

1.3.1 Conceptual Definitions

The terms used in this study are defined as follows:

1.3.1.1 Anxiety

The notion implies an affective or emotional state that involved “feelings of unpleasantness, quite similar to fear, or apprehension; usually linked to certain objects or persons.” (Koh, 1998)

1.3.1.2 Computer Anxiety

The term is typically defined as “...the fear and apprehension felt by an individual when considering the implications of using computer technology or when actually using computer technology.” (Maurer, 1983).
Miller & Rainer (1995) defined computer anxiety a distress or uneasiness of mind caused by apprehension of danger or misfortune relating to computer usage.

Sia (1999) perceptively summed up the fact that despite the varied definitions one thing in common is that computer anxiety is an affective construct that could involve emotions of fear, feeling of threat, or negative emotional reactions when interacting with the computer.

1.3.1.3  Literacy

Literacy is referred to knowledge, skills and understanding of certain construct, often categorized into levels of high or low, as it exists in a continuum (Webopedia, 1999).

1.3.1.4  Computer Literacy

A considerably good conceptual definition of computer literacy pertains to an understanding of computer characteristics, capabilities, and applications (software, hardware, and communication) as well as an ability to implement this knowledge in the skillful, productive use of computer applications suitable to individual roles in society. (Simonson et al. (1987) as cited in Nor Azan Mat Zin et al. (1999).

Sia (1999) succinctly defined computer literacy as (a) the acquisition of computer knowledge and experience for its intelligent and efficient usage; (b) ability to use a computer and its software for practical tasks; and (c) levels of expertise and familiarity someone has with computers.

1.3.2  Operational Definitions

1.3.2.1  Computer Anxiety (CA)

For the purpose of this study, the definitions on CA by Koh (1998) are used. He defined CA as the perceived affective state characterized by the fear of using a computer, the handling of its hardware and the feeling of embarrassment in front of others. These have been classified as task anxiety, social anxiety, and hardware anxiety respectively.

Task Anxiety is perceived as the fear related to the performance of computer related task. This fear concerns the actual use of a computer, including apprehension in knowing how to use software.

Social anxiety has been categorized as fear of exposing oneself to social embarrassment when dealing with computers. The individual’s perception about what other people think about him/her when working with a computer is a constant fear.

Hardware Anxiety is categorized as the fear of damaging the computer’s hardware or information base. It is related to the use of the keyboard, printer, or the making irreversible errors to the operating system.
1.3.2.2 Computer Literacy (CL)

Sia’s (1999) definition has been specifically used for this study. He defined CL as the perceived levels of expertise and familiarity (knowledge of, skills in and understanding of) with computers with regard to the ability to use application softwares (such as word processors (e.g., MS Word), spreadsheets (e.g., Microsoft Excel), data bases (e.g., MS Access), presentation software (e.g., Microsoft Powerpoint), web browser (e.g., Internet Explorer) and hardware and Operating System applications (e.g., DOS, Windows 3.1).

In the research tradition of Lindsay Unified School District’s (LUSD) (1999) definitions for categories of CL are grouped into (I) Novice, (ii) Beginner, (iii) Intermediate, (iv) Advanced, and (v) Expert.

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<th>Category</th>
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<td>a. Novice</td>
<td>The individual does not know how to do a task, or he does not know what the question means.</td>
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<tr>
<td>b. Beginner</td>
<td>The individual has a little bit of experience with the tasks and he completes the basic tasks.</td>
</tr>
<tr>
<td>c. Intermediate</td>
<td>The individual is able to complete more complex tasks, but he often needs help to figure things out.</td>
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<tr>
<td>d. Advanced</td>
<td>The individual is able to complete complex tasks and solve problems when they come up. He is more likely to be asked to help, than to ask for it.</td>
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<tr>
<td>e. Expert</td>
<td>The individual is capable of solving most problems when they come up and he can make changes to the software, computer, or operating system to maintain it/or make it run faster. He could probably train others in the tasks.</td>
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The different softwares have also been classified in accordance to the following domains, namely: (a) Software (Applications), (b) Hardware and Operating System Applications (HOAppl.), and (c) Communication.

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<td>Software Applications</td>
<td>The ability to use application softwares such as word processing, spreadsheets, presentation, databases, and graphics softwares.</td>
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<tr>
<td>Hardware and Operating System Applications</td>
<td>The ability to use operating system softwares, set up computer, software installation, and use a scanner.</td>
</tr>
<tr>
<td>Communication</td>
<td>The ability to use e-mail, create personal homepage, use web browsers, and other Internet-related skills.</td>
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1.3.2.3 Mulu National Park

The Mulu National Park encompasses the area that includes the Base Camp (under the jurisdiction of the Forestry Department, Sarawak) and Royal Mulu Resort (part of the chain hotel, Rihga Royal, Japan). Briefly, the Mulu National Park was officially constituted in 1974 and opened to the public in 1985. Within the boundaries of Gunung
Mulu National Park is one of the most extensive and spectacular limestone cave systems on earth as well as the second highest mountain peak in Sarawak. The National Park is now a major tourist destination in Malaysia, and indeed one of Sarawak's major attraction. The latest development with regards to this site will be its planned induction as a "World Heritage Site".

1.3.2.4 Employees

These are individuals who are part of the workforce at these two organizations under study.

1.4 Research Framework

A research framework for this study takes the following form:

**Dependent Variables**

*Computer Anxiety Levels:*
- Task Anxiety
- Social Anxiety
- Hardware Anxiety

*Computer Literacy Levels*
- Hardware & Operating Application Literacy Level
- Software (Application) Literacy Level
- Communication Literacy Level

**Independent Variables**

*Demographic Data*
- gender
- age groups
- highest academic qualification
- working experience
- computer experience
- numbers of computer courses attended
- computer ownership

The above research framework shows the dependent variables for the study are CA and CL.

The independent variables are the demographic factors namely gender, age groups, highest academic qualification, working experience, computer experience, numbers of computer courses attended and computer ownership.
1.5 Research Questions

(a) What is the Computer Anxiety level of employees in Mulu National Park?
(b) What is the Computer Literacy level of employees in Mulu National Park?
(c) Is there a significant relationship between Computer Anxiety and Computer Literacy?
(d) Are there significant differences in Computer Anxiety levels and Computer Literacy levels between respondents with different demographic factors such as gender, age group, academic qualification, computer ownership, number of computer courses attended, working experience, and computer experience?
(e) Are there significant relationships between the three Computer Anxiety domains (i.e., Task Anxiety, Social Anxiety, and Hardware Anxiety), and the three domains of Computer Literacy (i.e. Software (Applications) Literacy, Hardware and Operating Systems Literacy, and Communication Literacy)?

1.6 Research Hypotheses

This study tests the following hypotheses:

$H_{01}$ There is no significant relationship between CA and CL levels.
$H_{02}$ There is no significant difference in CA levels between male and female employees.
$H_{03}$ There is no significant difference in CL levels between male and female employees.
$H_{04}$ There is no significant difference in CA levels between employees of different age groups.
$H_{05}$ There is no significant difference in CL levels between employees of different age groups.
$H_{06}$ There is no significant difference in CA levels between employees who have different amount of computer experiences as measured through their perceived accumulated years of using different software to perform formal and informal task.
$H_{07}$ There is no significant difference in CL levels between employees who have different amount of computer experiences as measured through their perceived accumulated years of using different software to perform formal and informal task.
$H_{08}$ There is no significant difference in CA levels between employees with different academic qualifications.
$H_{09}$ There is no significant difference in CL levels between employees with different academic qualifications.
$H_{10}$ There is no significant difference in CA levels between employees who own computers and those that do not.
$H_{11}$ There is no significant difference in CL levels between employees who own computers and those that do not.
$H_{12}$ There is no significant difference in CA levels between employees who have attended different numbers of computer courses.
$H_{13}$ There is no significant difference in CL levels between employees who have attended different numbers of courses.
$H_{14}$ There is no significant difference in CA levels between employees with different years of working experiences.
$H_{15}$ There is no significant difference in CA levels between employees with different years of working experiences.
1.7 Significance of the Study

This study is necessitated by an overwhelming need to explore the extend of employees computer literacy level and computer anxiety level. Are employees "unwilling" to learn or to interact with computers? With the emphasis that has been placed on computer technologies in all the organizations in this nation, it is high time that all employees become confident and work towards a more progressive and rewarding computer literate society. The new outlook towards the computer literate state will surely augur well for the individual, the organization, and the economic gain for all concerned.

The finding of this study will be useful to the organizations concerned namely the hotel industry in Mulu, and the Forestry Department. Other organizations in the country, and especially for the state of Sarawak will also benefit as avenues for training or retraining can be accounted for.

Thorough study on levels of CL and CA will provide meaningful guides in the design of suitable courses for the employees. Additionally, relationships between the selected demographic factors and CA or CL will enlighten concerned parties to attain the competitive-edged IT environment.

1.8 Limitations of the Study

For the two organizations mentioned, one problem faced is the provision of in-service computer courses. Until recently (in the past two years) extensive in-service courses for the employees have been carried out. The new orientation towards a computer literate workforce is in line with the need for the organizations to meet the demands of the market economy. Notably, the constraint of facilities that limit the process of conducting in-service computer courses for the employees was observed at the time the study was conducted. In addition, the locality is another factor that hinders exposure to computer usage. Facilities such as telephones, inconsistent supply of electricity are amongst the factors affecting employees in their quest to be computer literate. The exposure to computers differs amongst these employees with regards to the nature of their work. The researcher believes that some of the data collected will be based on the respondents’ perceptions only. The outcome(s) of the study being affected bear(s) some possibilities.

Indifference due to attitude towards this type of study is also considered a limitation. This is due to the fact respondents might feel “threatened” or it is an “encroachment” into their private affairs. Therefore, if they perceive the study as positive or helpful, the expected responses surely will be more honest. Otherwise, a negative attitude will somehow beget less than satisfactory responses.

Findings cannot be generalized as representative of all employees in Sarawak. Findings also do not reflect employees working in the tourism industry in Malaysia. Respondents are only those employees working in the Mulu National Park, a locality that is definitely different to other employees in other places.
CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

In this chapter, an introduction to computer usage in Sarawak will be expounded; and this includes the most recent development in computer literacy in the state. Then, it will be followed by discussions on the definitions of computer anxiety and computer literacy. The findings of related studies in the context or scope of this study would also be highlighted. The chapter will culminate with discussions on the relationship between computer anxiety and computer literacy, the importance of understanding such a relationship and the related theories.

The scenarios of present day business environments include technology at almost all levels, be it at the petrol kiosks, fast food restaurants, and even home businesses. It has become a fundamental requirement that at every entry level, basic knowledge of keyboarding or mouse control skill is required of the employees. In Selby’s statistical findings (1993), he indicated that technology is “highly valued in the marketplace”. It has become imperative that employees develop a literacy that can parallel their desired position within an industry. Current workers have to undergo additional training or develop the necessary technological skills to maintain a job.

As a developing nation, Malaysia takes pride in the fact that her information and telecommunications infrastructure is better than most developing nations. Her level of telephone and computer penetration, while low by high-income country averages, is higher than most of her neighbours in the region. The case is also similar for the level of Internet penetration.

Viewed human resource-wise, the labour force of Malaysia is generally well-educated (Hanafizan et al, 1999), and this level is continuously improving. Likewise, the quality of Malaysia’s labour force is generally acknowledged to be high (Hanafizan et al, 1999). In the area of skilled IT manpower, the latest estimates of supply in relation to projected demand suggest that “the much publicised shortage is unlikely to develop, although there may be shortages in specific skill areas”. Meeting the demand for skilled IT workers is constantly an ambition of all concerned parties (both in the private and public sectors.)

2.1 Computer: How well is it used and understood in Sarawak's workforce?

The state of Sarawak, just as the other states of Malaysia, aspires to be successful in her pursuit of a knowledge society. Sarawak has a much larger population living in the rural areas than other states in Peninsular Malaysia. Official census statistics show that about half of her population lives in the rural areas. According to Harris (1999) Information and Communications Technologies (ICTs) inadequately serve them.
Computer literacy education in schools throughout the state is still inadequate and there is much to be done in the areas where the potential economic sites are earmarked. If the condition were left unchecked and if there were no immediate remedies to the problems aforementioned, then the future of computer literacy in the state will be at stake. The end product of an education system that lacks resources and lack qualified teachers to shoulder the responsibility of building a computer literate society will surely be felt by the time such students enter the workforce. Apparently, it is also necessary for the state to examine the present computer literacy of her workforce so that future projections can be carried out.

2.2 Computer Anxiety: What is it?

When computers were first introduced into our society, the impact on individuals who came directly into contact with the “machines that think” was rather mixed. Many responded enthusiastically and tried to manage its usage, while others experienced discomfort and showed emotions of anxiety when they were required to learn how to use computers (Marcoulides, 1988).

It is not an easy task to define computer anxiety. For a start, anxiety is an affective construct as it “deals with emotion but which is subjective and relative in its meaning”. (Sia, 1999). Computer-anxious people are those who fear using computers or become afraid at the prospect of using them. Consequently, they can choose not to learn at all, their ability to learn could be affected (Johassen, 1985). They may have extreme negative feelings, akin to phobia (Brosnan, 1997), and computer-anxious people will avoid interaction with computers (Smith & Kotrlik, 1990). Herdsman (1983) and Howard (1986) defined computer anxiety as emotional fear, apprehension and phobia felt by individual towards interactions with computers or when they would think about using computers.

2.2.1 Components of Computer Anxiety

Most researchers recognized the existence of computer anxiety (e.g. Cambre & Cook, 1985; Torkzadeh & Angulo, 1992). Its existence has also drawn the attention of educational researchers as well as technocrats as the use of computers in the classroom or the workplace has grown. It is well-worth our effort if we can understand the nature of computer anxiety in order to help educators or trainers in minimizing the degree of Computer Anxiety’s negative impact or in the selection of better remedial or even preventive measures.

In the study conducted by Bradley and Rusell (1997), computer anxiety was categorized into the dimensions of task performance, hardware damage and social embarrassment. Task performance fear has to do with the fear of using the computer while hardware damage is the fear of causing damage to the computer’s hardware or information base. Social embarrassment means the fear of individuals exposed to social embarrassment when they are working with computers.

2.2.2 Significance of Computer Anxiety

The nature of computer anxiety as an important psychological construct assists us, as in the words of Harris & Grandgenett (1996): to “…discover both forward and