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AN EMPIRICAL STUDY OF THE EFFECTS OF INFORMATION SYSTEM EDUCATION AND TRAINING ON USER SATISFACTION AND PERFORMANCE

BY

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A PROJECT PAPER SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF MANAGEMENT

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ABSTRACT

The aim of this study is to examine the effect of information system education and training on end-user satisfaction and performance. Five attitude and perception variables, namely, security; software adequacy; ease of use; functionality of system; and practicality of system, are chosen as contributing factors to users' overall satisfaction and work performance.

The sample consists of Masters of Business Administration (MBA) and Masters of Management (MOM) students that have completed Management of Information System (MIS) course. They are randomly selected from local universities and private colleges that offer twining-programs with foreign universities. 104 students participated in this study by completing a questionnaire on user satisfaction and performance scales.

The findings reveal that information system education and training increases users' overall satisfaction and work performance. All the five attitude and perception variables change positively after receiving information system education and training. The results of multiple regression show that users' overall satisfaction and work performance are significantly correlated with the five attitude and perception variables.

When demographic variables are examined, the results indicate that there is no significant difference in the effect of information system education and training in the dependent variables, that is, overall user satisfaction and work performance. However, people with more computer experience appear to perform better after receiving information system education and training.
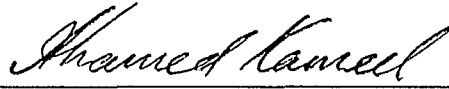
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The undersigned certify that the above candidate has fulfilled the condition of the project paper prepared in partial fulfilment for the degree of Master of Management.
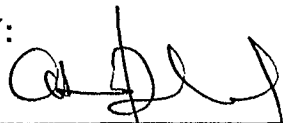
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DECLARATION

I hereby declare that this project paper is the result of my own investigation, except where otherwise stated. Other sources are acknowledged by reference notes and a bibliography is appended.

Date: 28th February 1998   Signature...........................

Name: GOH CHEE SING

To my father:

This project paper is dedicated to you with everlasting memory of love.

To my mother, wife and children:

In great appreciation of your unfailing love, support and care.

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CHAPTER ONE

INTRODUCTION

The world today is in the computer technology age. Computers, information system, and information technology have ceased to be items used exclusively by big corporations and organisations. They have become common items found in small business as well as in the households. Computers have, to a large extend, taken over the place of typewriters, telephones and fax machines. They are essential to run a business and to compete in today's markets. The knowledge of computer usage is a prerequisite for workers who seek employment in many organisations.

The information technology era is evolving very quickly. Technology is changing so rapidly that it is difficult for the users to keep pace with it. According to the International Data Corporation (IDC), a computer industry research firm; today's computer environment is more complicated than ever and products are constantly changing. Some knowledge from the mainframe days is still useful, but other skills are no longer needed (Buckler, 1996). This rapidly growing and irreversible phenomenon makes it necessary to study the end-user satisfaction and work performance, and factors associated with them.

1.1 Background Of The Problem

The rapid technological changes have caused dismay to many end-users, especially the non-IT professionals. Instead of bringing satisfaction to the users and make them more effective and efficient in performing their tasks, the use of computers often resulted in the reverse situations. Very often the users are forced to stop halfway through their work when they meet with minor operational problems. These problems can be overcome easily if the users are equipped with proper skills and knowledge. Many users rely on trial and error method to complete their tasks. Even though the works are successfully accomplished, a lot of time is wasted unnecessarily. End-users spend longer hours with computers than with the traditional methods to perform the same tasks, resulting in dissatisfaction and frustration. Thus, it is important for the users to have appropriate knowledge on the information systems so that greater satisfaction can be tapped from their usage. Moran (1981) as mentioned by Yaverbaum & Nosek (1992: 217) proposed that a user cannot complete a task without effective knowledge of it, just like a game cannot be played unless the rules are understood.

Many end-users are computer illiterate. They do not have complete knowledge of the computer systems. They merely know the names of the parts of computers and memorise a sequence of steps to operate the machines. They are not able to solve problems that they encounter with their computers while performing routine works. A lot of precious time is wasted in trying to correct the problems and making the machines produce

the desired results. These end-users are also slow in adapting to new systems and packages. All these cause anxiety and dissatisfaction towards computer usage.

Rochester and Rochester (1991) as cited in Winter, Chudoba and Gutek (1997: 30) defined computer literacy as being knowledgeable about the computer and how it works in our daily lives. It also means being able to operate and use a computer, at least to perform basic tasks. Winter, Chudoba and Gutek (1997) added that a computer literate person must have enough knowledge about computer systems to figure out how to solve problems and to adapt quickly to new systems and packages with minimum retraining.

Computer usage is indispensable to today's profit and non-profit organisations. The employees are forced to interact with the computers even though they do not have sufficient knowledge of the machines. They are briefly trained on the very basic skills of computer operation, which is just enough to get their works done. Anything more than that is up to the employees' own initiative to learn. The end result is that the works become routine and monotonous. The employees can hardly understand the machines that they have very limited-control. Their attitude and morale are affected. They are not motivated or not capable of contributing more than the routine effort due to low self-esteem and skill. Therefore, their job performance is negatively affected.

Instead of enjoying the benefits of computers, some naive users multiply the cost of errors and malfunction many folds. Hours and even days of work are wasted, priceless data destroyed and vast expenses incurred. The worst is when the errors involve monetary transactions. For example, bills or money for one party is wrongly entered into the account of another party. Thus, computers have revealed the foolishness of such users and cause dissatisfaction in their usage. Gabriel (1992) let 76 respondents analysed 131 real life stories and jokes about computer usage collected from the employees of 5 organisations. It was found that two-third of these stories and jokes were related to errors, malfunctions and cock-ups.

The computer jargons may have caused dissatisfaction to the "non-expert" end-users. The obscure acronyms and highly technical terms, like RAM, bits and bytes may even make some end-users hate the computers. Many end-users are confused by the computer jargons that appear like ordinary words. For example, virus corrupt, default, floppy etc. These jargons cause confusion and difficulty to end-users when reading the computer related material, like user manuals and computer articles. Many of them cannot even understand the explanations in the "Help" menu albeit have good command of English. Gabriel (1992) reiterated that to have power to control computers, which are powerful tools, one needs to speak their languages. Many people find these languages forbidding.

The above mentioned problems might have brought computer anxiety to many end-users. They begin to avoid using computers. When they have no choice but to use computers, they are excessively cautious and try to finish the tasks in the shortest possible time. They develop fearful attitude towards computer usage. They are forced to bear the stress and anxiety caused by computer usage. Simonson and Thompson (1990) have defined computer anxiety as the fear or apprehension felt by individuals when they use or plan to use computers. According to Hunt and Bohlin (1995), individuals who experience computer anxiety may become alienated from mainstream activity of technology advancement; suffer negative societal and occupational consequences.

1. 2 Objectives of the Study

The primary objective of this study is to find out whether education and training have any positive impact on overall end-user satisfaction and work performance. The secondary objectives consist of determining the effect of education and training on end-users' attitude and perception behaviours; and the impact of information system education and training on overall user satisfaction and work performance grouped by demographic variables.

1. 3 Research Questions

To achieve the objectives, user satisfaction and work performance will be studied based on the following questions:

1.   Does information system education and training have any impact on overall user satisfaction?

2.   Does information system education and training change users' perception on computer usage and involvement with systems?

3.   Does information system education and training change the attitudes of users toward computer usage?

4.   Does information system education and training lead to better performance of end-users' works?

1. 4 Research Hypotheses

To answer the research questions, the following hypotheses formally state the expected relationship of information system education and training with the various variables that lead to user satisfaction and better performance.

H1: End-users' confidence in security of using computer systems is positively associated with Information system education and training.

H2: End-users perception on the adequacy of software is positively associated with Information system education and training.

H3: Information system education and training is significantly related to ease of use of computer systems.

H4: Information system education and training is significantly related to end-users' perception on the functionality of systems.

H5: Information system education and training is significantly related to end-users' attitude on the practicality of systems.

H6: Information system education and training will have significant impact on users' overall satisfaction.

H7: Information system education and training significantly enhance work performance of end-users.

1. 5 Significance of the Study

The findings of this study would provide a better understanding on the importance of information system education and training. They serve as motivation factors for end-users to improve and satisfy themselves by seeking more knowledge. They also serve as a guide to the management of all organisations on the benefits of providing information system education and training to their employees.

In addition, this study contributes to the limited literature and research currently available about the impact of information system education and training on user satisfaction and user performance. It provides a direction for the future research on the same or related topic.

1. 6 Assumptions and Limitations

The questionnaire of this study does not include items that measure support from Information System staff and services; a component commonly used in other user satisfaction measurements to test the support-group satisfaction. It is assumed that majority of the respondents

are from the working environment that do not have Information System departments.

The respondents are selected solely from the Master of Business Administration (MBA) and Master of Management (MOM) students who had undertaken a course in Management Information System (MIS). They belong to the adult working group. Groups that have other characteristics may have different attitude and perception on information systems due to different experience and ability to acquire hand-on skills.

The questionnaire requires the respondents to give two answers to each question, one for before and another for after their information system education and training. It is most ideal if the data is collected at two different time intervals. However, due to time constraint, the data is collected at the same point of time. The respondents are asked to recall their experience before their attending the information system course. Thus, the possible consequence is that answers given by respondents with poor memory may be biased.

1.7 Operational Definitions

1.71 Education and Training

Education refers to learning activities that develop an understanding of the abstract theories and concepts of information systems. Training involves learning activities that build computer skills to be used immediately in performing a task. Both education and training are expected to change

the learners' attitudes and perceptions of information systems, hence greater satisfaction and better task performance from computer systems usage.

Education and training are taught concurrently in the MIS course. It is part of the post-graduate program currently attend by the respondents.

1.7.2 End-users

Rockart and Flannery (1983) identify six end-user types. However, in this study, the end-users refer to the first three types. They are the non-programmer users access computer-based data through software developed by someone else; command-level users perform simple enquiries and prepare reports for their own use; and user programmers obtain their required information by using both commands and programs. These virtually include all types of users except those staff from the management information centres and expert programmers.

The end-users differ in term of scope of computer usage, functional areas at various level of organisational hierarchy, and background experience. Therefore, their degree of interaction with information systems is different, so is their expectations.

1.7.3 End-user Satisfaction

This study focuses on general end-user satisfaction. It refers to the users' attitude and perception on information system features as well as the