A Study of Computer Attitudes of Non-Computing Students of Technical Colleges in Brunei Darussalam

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The study surveyed 268 non-computing students among three technical colleges in Brunei Darussalam. The study validated an existing instrument to measure computer attitudes of non-computing students, and identified factors that contributed to the formation of their attitudes. The findings show that computer experience and educational qualification are associated with students’ computer attitudes. In contrast, variables such as gender, age, ownership of a personal computer (PC), geographical location of institution, and prior computer training appeared to have no impact on computer attitudes.

Dramatic progress in educational computing during the last decade has not only created a tremendous educational opportunity, but has also invited threats and anxiety to teachers and students alike. This has opened a venue for behavioural scientists to study the attitudes and the factors that contribute towards the successful use of computer technology in the educational setting. Existing literature has established that a student with a positive attitude may explore enhanced use of computers, while less favourable attitude may under-utilise the wonders of a computer. Therefore, a favourable attitude can exert a considerable influence on the extent of his/her use of a computer. In this study, the term “computer” has been used to mean a personal computer (PC) or a microcomputer.

A formidable body of literature exists on the computer attitudes of teachers and students in educational institutions. Several of these studies have focused on primary and high school students. There also exists some literature on the computer attitude of college students. Little is however known regarding the computer attitude of students studying in technical colleges. It is argued that the qualifications, working experience with computer, and the level of skills of students in technical colleges, are likely to differ from those of students studying in ordinary schools and colleges. This difference may have an effect on the formation of technical students’ attitude towards computers. This aspect was not addressed by the prior studies, hence there is a need to investigate this aspect in a new geographical environment.

A majority of the existing studies were undertaken in the western countries. These studies primarily addressed the computer attitude of schoolteachers and students. Thus, their results may not be applicable to an Asian country like Brunei Darussalam, which is culturally different from those of the western world. Brunei Darussalam is a small sultanate located on the northwest coast of Borneo island with a total population of nearly 0.3 million (Brunei Darussalam Statistical Yearbook, 1997). Its main economic activity is dominated by the oil and gas sector, and gross domestic product per capita was B$21,865 (US$1 = 1.63) in 1997. After achieving its independence in 1984, the government placed considerable importance on technical education. Two engineering colleges and one technical institute were established to produce technologically oriented professionals of various levels. The government has also recognised the need for broader use of computer technology in the public sector. As such, Information Technology Division (ITD) was set up to oversee and to support the development of IT projects in the public sector covering schools and technical colleges. Against this background, this study was undertaken with the following objectives:

(a) To validate an existing instrument that measures the attitudes of non-computing students toward computers.
(b) To identify the factors that significantly affect computer attitudes of these students.

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REVIEW OF LITERATURE AND DEVELOPMENT OF HYPOTHESES

Literature on computer attitudes can be broadly divided into three groups depending on the type of the target population for whom attitudes were measured. The first group deals with the measurement of computer attitudes of primary and secondary school students. The works of Harvey and Wilson (1985), Siann and Macleod (1990), Levin and Gordon (1989), Martin (1991), and Moore (1985) fall in this group. Some authors like Koobang (1987), Al-Jabri et al. (1997) and Finnegan and Ivanoff (1991) have also studied computer attitude for students studying in higher institutions. None of the studies to our knowledge has examined computer attitudes of students studying at technical colleges.

The second group of studies has focused on school-teachers. This group includes the works of Katz and Francis (1993) and Savenye et al. (1992) among others. Limited studies are available for the third group that investigated the computer attitudes of university faculty members. Harris (1997) has made a valuable contribution by measuring computer attitudes of academics in a Hong Kong university.

The studies as cited above have also identified a variety of factors that affect the attitudes of subjects (e.g., students, teachers, etc.). Some of the frequently reported factors include gender, age, ownership of PC, personality, prior computer training, computer literacy, educational qualification and computer experience among others. More efforts were spent to examine the influence of gender on the computer attitudes of students. Computer literacy also received considerable attention from some authors. Relatively, less attention was paid to formal computer courses or prior training and level of computer skill of individuals.

The impact of gender on the formation of a person’s computer attitude is still a matter of debate. Previously, several studies have addressed this factor. It is generally agreed that males have a more positive attitude toward computers comparative to females (Krendl 1989; Loyd 1987). Barrier and Margavio (1992) supported their findings that more males exhibited negative computer attitudes. Kay (1990) has stated that gender-related studies have produced conflicting results. Therefore, understanding gender-based attitudinal difference is likely to have an important implication.

Like gender, the relationship between age and attitude has also produced mixed results. Jay and Willis (1986) reported that young males have the most favourable predisposition towards computers. Moreover, Kay (1990) identified age as an important variable while assessing the positive attitude towards computer use. Woodrow (1991) found that age was not a significant contributor toward the computer attitudes of student teachers, while Nickell and Pinto (1987) found that age correlated negatively with computer attitudes. However, Marshal and Bannon (1986) reported a positive correlation between age and computer attitudes.

Several researchers have highlighted the importance of education in the formation of the computer attitudes. For instance, Dugan and Thurlow (1989) have suggested that educational level is likely to have an effect on one’s attitude towards computer use. Those who are better educated are more favourably disposed to rapid advance in technology. Kay (1990) has reported that, in general, people with higher educational qualifications have favourable predisposition in regards to computer use.

In this study, we have introduced a new variable ‘geographical location of the institution’. This inclusion was based upon suggestions made by various reviewers of our research design during the pilot study. Moreover, Rahim et al. (1999) has used this variable while investigating software piracy among students in Brunei Darussalam. It is believed that the student body is more computer-oriented in the capital area due to enhanced business opportunities as compared to the students from an institution, which is located in a small town.

Literature strongly suggests that ownership of a PC is related to favourable attitude. For example, Pfeffer and Lawless (1980), Steers and Porter (1983), Harvey and Wilson (1985) and Noe (1986) have shown the difference in attitude between owners and non-owners of computer, with owners having a more positive attitude. Gattiker and Hlavka (1992) have found that an individual’s attitude to computer usage depends on the ownership of computer.

Several authors have studied the relationship between a person’s prior training in computers and his/her subsequent attitude. Clarke and Chamber (1989) have reported the significance of prior computing training on a person’s attitude. Ray (1994), Igbaria and Chakrabarti (1990), and Nelson and Cheney (1987) found a positive relationship between the computer-related training a user receives and his/her computer-related ability. Whereas, Loyd and Gressard (1984) and Levin and Gordon (1989) found prior experience with computers as an important variable in promoting favourable attitude among users.

Working experience with computers was found to be an important factor. It is suggested that per-week use of personal computers by the students may have some influences in promoting favourable attitudes. Students whose computer usage is less may develop fear and anxiety; as such they view computers with skepticism. This assertion is partially supported by Loyd et al. (1987) who have reported that the subjects participating in their study developed a more positive attitude toward computers once they achieved a certain level of computer skill. Al-Jabri et al. (1997) found positive and significant relationships between experience and overall attitude.

Based upon the relevant research as discussed above, the following seven hypotheses are proposed:

H1: There is a significant association between gender and student attitude toward computers.