Research Paper

Computer attitude among higher secondary school students in district Srinagar (J&K): A study

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ABSTRACT

The success of efforts to integrate technology with design education is largely affected by the attitudes of students toward technology. The purpose of this study is to determine the attitude towards the computer (computer attitudes) of higher secondary school students. This study was specifically targeted at determining if gender and the parents’ level of education had any effect on their computer attitude among higher secondary school students. The population of this study consists of 210 higher secondary school students of District Srinagar (J&K), and they were selected by a random sampling technique. The instrument used for the present study is “Computer Attitude Scale” to obtain a “computer attitude”. While Descriptive analysis, Mean value, Standard deviation, as well as t-test and f-test techniques were used for statistical analysis. The results of the analysis showed that the entire samples of higher secondary school students’ attitude towards computer are favourable. Both male and female students attitude towards computer are favourable. The students whose fathers and mothers are in different educational level that is, illiterate, school level and college level have favourable attitude towards computer. Findings indicated that there is no significant different between male and female students in their attitude towards computer, and computer attitude among higher secondary school students on the basis of their parent’s educational level is also insignificant.

Key words: Computer attitude, higher secondary school Students, District Srinagar, (J&K).

INTRODUCTION

Electronic machine, operated under the control of instructions stored in its own memory that can accept data (input), manipulate data according to specified rules (process), produce results (output) and store the results for future use. We live in a postmodern society, where information is considered to be an extremely valuable commodity. Those who control important information, or who simply know how to access and use it, are the key players in the information-based economy (Simmons, 2009). He further argued that, computer literacy and the skills that can be built there from are essential to one’s effectiveness in modern societies, not just in our working lives, but in the way we learn, manage our finances, and improve our standard of living. The computer as productivity tool has great role in education. Computers include hardware and software, word processing functions, graphics, programmed instruction for problem solving, spreadsheets, databases, networking and telecommunications for today high technology developments as a reflective to education. In addition to this, within the constructivist approach perspective, computers help the differentiate roles of stu-
students and teachers, application of instruction by providing equal standards, understanding, meaningful learning for all students. Computer help to convert teacher based instruction to child centered instruction with providing multiple intelligence atmospheres to the educational cycle (Forschier, 1996). When it comes to teaching and learning, Computers can be an incredible tool, especially when the learners have access to data stored on CD-ROMs or the Internet. They can use a PC to access vast knowledge bases on almost any topic, search archives of information dating back decades, ask questions online and even take online courses. So it is important to have a basic understanding of computer technology, regardless of one's career choice or aspiration. Woodrow (1991) claimed that students’ attitudes toward computers were critical issues in computer courses and computer-based curricula. (Sam et al., 2005) concluded that monitoring the user’s attitudes toward computers should be a continuous process if the computer is to be used as a teaching and learning tool. Other attributes, such as gender and age (Morris, 1988-1989) and computer anxiety (Paxton and Turner, 1984) were also shown to be related to attitudes toward computers.

Initially computers were used to teach computer programming but the development of the microprocessor in the early 1970s saw the introduction of affordable microcomputers into schools at a rapid rate. Computers and applications of technology became more pervasive in society which led to a concern about the need for computing skills in everyday life. As public awareness grew, this need for computer literacy became extremely influential and many schools purchased computers based on this rationale. During the late 1970s and early 1980s, computers became more affordable to schools, permitting a rapid decrease in student-to-computer ratios. While tutorial and D&P software continued to be developed (Chambers and Sprecher, 1984), a range of other educational software was developed that was not based on the premise of teacher replacement, for example, simulation software, modelling and tool software. However, the major argument used to support the introduction of greater amounts of computer hardware into schools concerned the perceived need to increase the level of computer literacy of students (Carleer, 1984; Downes et al., 1995). The 1990s was the decade of computer communications and information access, particularly with the popularity and accessibility of internet-based services such as electronic mail and the World Wide Web. At the same time the CD-ROM became the standard for distributing packaged software (replacing the floppy disk). This allowed large information-based software packages such as encyclopedias to be cheaply and easily distributed. As a result educators became more focussed on the use of the technology to improve student learning as a rationale for investment. Today computers in schools are both a focus of study in themselves (technology education) and a support for learning and teaching (educational technology).

Rationales can be presented for both computer literacy and using computers as part of educational technology.

In the past, Students have spent a lot of time doing repetitive, low-level tasks particularly involving writing, drawing and computation. While it may be necessary for students to develop these skills at some time on most occasions they are pre-requisite to some higher level task. Unnecessary repetition of low-level tasks is inefficient, non-motivational and may obscure the real purpose of the learning activity. Many computer applications provide the tools to support students in quickly completing these lower-level tasks so that they can focus on the main purpose of the activity. Word processors, graphics packages, database packages, spreadsheets and other software support the performance of students. The use of scaffolds and tools can help students to solve problems that may have previously been considered to be too difficult for them (Committee on Developments in the Science of Learning, 2000). Studies have shown that students often learn more in less time that is their productivity increases, when they use computer support appropriately (Schacter, 1999). Such scaffolding tools are often referred to as Electronic Performance Support Software (EPSS).

The computer offers a flexible tool which may extend the capabilities of the user and allow information to be represented in a variety of ways (Committee on Developments in the Science of Learning, 2000). In many cases this may provide tools to scaffold the learning for the student (Committee on Developments in the Science of Learning, 2000). There are also many applications designed for the production, analysis and communication of information (production, cognitive and communication tools). While most of this software has been developed for use in the workplace, increasingly it is finding relevant use in schools. DeCorte (1990) discusses this balance of approaches in the context of using computers in schools, a powerful computer learning environment is characterized by a good balance between discovery learning and personal exploration on one hand, and systematic instruction and guidance on the other, always taking into account the individual differences in abilities, needs, and motivation between students.

**IMPORTANCE OF THE RESEARCH**

The learner attitude towards computer measures his capabilities in effective learning. Computer attitude has been defined as a person’s general evaluation or feeling of antipathy towards computer technology and specific computer related activities (Smith et al, 2000a). Attitudes are learnt, they are mouldable that is they change with experience of the stimulus objects and with social rules or institutions (Binder and Niederle, 2007). Given the pervasiveness of computers in all levels of educational sys-
tem, it is likely that students will develop some attitudes toward these machines (Yushau, 2006a). Students use computers to help them complete tasks which they regard as problems, then they are likely to have a more positive attitude towards the use of computers, and are likely to look for further tasks which can be completed using a computer. The interactive and multimedia nature of modern computer systems has provided the opportunity for software developers to create increasingly more stimulating features. Many studies have found that students like to use computers and are likely to develop more positive attitudes towards their learning and themselves when they use computers (Gregorian et al., 1996; Schacter, 1999). Attitudes can be defined as “a learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object” (Fishbein and Ajzen, 1975). They are relatively less stable than personality traits and can be changed both across time and across situations in virtue of individual’s interaction with the environment (Robinson et al., 1991). Attitude is one of the determining factors in predicting people’s behaviour. That is to say by understanding an individual’s attitude towards something, one can predict with high precision the individual’s overall pattern of behaviour to the object (Ajzen and Fishbein, 1977: as cited in Yushau, 2006b). Therefore, attitude affects people in everything they do and in fact reflects what they are, and hence a determining factor of people’s behaviour (Yushau, 2006b). Computer attitude has been defined as a person’s general evaluation or feeling of favour or antipathy toward computer technologies and specific computer related activities (Smith et al., 2000b). Computer attitude evaluation usually encompasses statements that examine user’s interaction with computer hardware, computer software, other persons relating to computers, and activities that involve computer use. Computer-related activities examined are either single instances of behaviour (e.g. specific software use) or classes of behaviour (e.g. attaining computer related courses) (Smith et al., 2000b).

According to Whitrow (1999), computer-related attitudes influence students’ desire to use computers, their desire to enroll in computer-related subjects and courses, and their choice of career path. Students’ computer-related attitudes are also directly related to their prior experiences and use of computers (Levine and Donitsa-Schmidt, 1997). Different researches have been conducted on how users’ attitudes toward computers (herein referred to as computer attitudes) influence the future use of and behaviour towards computers (Fann et al., 1989; Woodrow, 1991; Levine and Donitsa-Schmidt, 1997); the use of computers in optional programmes (e.g. gifted, distance education or remedial). Students can be provided with computer support for learning activities tailored to their individual needs. Studies have shown increased achievement in special needs children when computers are used (Schacter, 1999). The computer provides a flexible environment in which students can test ideas, develop concepts and solve problems. The accent should be on open-ended learning and investigation. Computers giving access to information through databases and providing processing and interpreting tools, computers can also allow students to create their own information from original data sources, often using the Internet. The Internet provides a number of facilities that provide communication and information access tools, including: Electronic Mail (Email), Listservs, Usenet newsgroups, and the World Wide Web (WWW). In
order to be reflective on the usage of computers and facilities, there should be examination of the thoughts, attitudes of students towards computer. Because based on the constructivist perspectives, students have great role in the learning process and much affected from the technology support to their education. The study therefore aimed at investigating the attitudes of students towards the computer.

**Objectives of the study**

1. To study the attitude of higher secondary school students towards computer with respect to: 1. Gender and 2. Parent's Educational level.
2. To find out whether there exist any significant difference in the attitude of higher secondary school students towards computer on the basis of Gender.
3. To find out whether there exists any significant difference in the attitude of higher secondary school students towards computer whose parents are in different educational qualification.

**Hypotheses of the study**

1. The attitude of higher secondary school students toward computer is favourable with respect to: 1. Gender and 2. Parent's Educational Qualification.
2. There is no significant difference between the higher secondary school Boys and Girls in their attitude towards computer.
3. There is no significant difference between the higher secondary school students in their attitude towards computer whose fathers are in different educational level.
4. There is no significant difference among the higher secondary school students in their attitude towards computer whose mothers are in different educational level.

**METHODOLOGY AND PROCEDURE**

**Sample**

The sample for the present study consists of 210 higher secondary school students studying in District Srinagar (J&K). Sample selected by the method of random sampling technique for present investigation. The list of higher secondary schools in District Srinagar of (J&K) was obtained from the CEO's office of the said District.

**Collection of data**

**Tools**

The following tool has been used to collect the data.

**Computer attitude scale (CAS)**

Computer Attitude Scale developed by Khatoon and Sharma (2009) was used to assess the attitude of students toward computer. The scale consists of 20 statements of Likert-type representing attitude towards various aspects of computer, like computer anxiety, computer confidence, computer interest, computer as a useful tool and computer career. Responses are made on 5-point Likert scale and the response categories are assigned weights from 1 to 5. Besides that a self constructed Information Blank was used to collect the information about the educational qualification of the parents of the sample population.

**Statistical analysis**

The following statistical techniques were used in the present study for the analysis of data:

1. Descriptive analysis of attitude towards computer on the basis of entire sample.
2. Descriptive analysis of attitude towards computer on the basis of gender.
3. Descriptive analysis of attitude towards computer on the basis of mother's educational level.
4. Descriptive analysis of attitude towards computer on the basis of father's educational level.
5. Descriptive analysis of attitude towards computer on the basis of father's occupation.

**RESULTS**

Table 1 reveals the mean and standard deviation of attitude of higher secondary students towards computer on the basis of entire sample of the students. The calculated value is above the mid value that is 165.55 for entire sample respectively. From the table, it is found that "the entire sample of the students' attitude towards computer is favorable.

Table 2 reveals the mean and standard deviation of attitude of higher secondary student towards computer on the basis of their gender. The calculated value is above the mid value that is 165.82, 165.32 for male and female respectively. From the table it is found that "The male and female students' attitude towards computer are favourable".

Table 3 reveals the mean and standard deviation of attitude of higher secondary students towards computer on the basis of father's education. The calculated value are above the mid value that is 165.34, 164.39 and 168.11, for illiterate school level and college level respectively from the table it is found that "The students whose father are in different educational qualification namely illiterate, school level and college level have favourable attitude towards
Table 1. Showing mean and SD of higher secondary school students’ attitude towards computer on the basis of entire sample.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer attitude</td>
<td>210</td>
<td>165.55</td>
<td>15.69</td>
</tr>
</tbody>
</table>

Table 2. Showing mean and SD of higher secondary school students’ attitude towards computer on the basis of gender.

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>105</td>
<td>165.82</td>
<td>16.69</td>
</tr>
<tr>
<td>Female</td>
<td>105</td>
<td>165.32</td>
<td>14.89</td>
</tr>
<tr>
<td>Total</td>
<td>210</td>
<td>165.55</td>
<td>15.69</td>
</tr>
</tbody>
</table>

Table 3. Showing mean and SD of higher secondary school students’ attitude towards computer on the basis of father’s education.

<table>
<thead>
<tr>
<th>Father’s education level</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterate</td>
<td>44</td>
<td>165.34</td>
<td>14.13</td>
</tr>
<tr>
<td>School level</td>
<td>112</td>
<td>164.39</td>
<td>17.03</td>
</tr>
<tr>
<td>College level</td>
<td>54</td>
<td>168.11</td>
<td>13.86</td>
</tr>
<tr>
<td>Total</td>
<td>210</td>
<td>165.55</td>
<td>15.69</td>
</tr>
</tbody>
</table>

Table 4. Showing mean and SD of higher secondary school students’ attitude towards computer on the basis of mother’s education.

<table>
<thead>
<tr>
<th>Mother’s educational level</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterate</td>
<td>55</td>
<td>165.25</td>
<td>15.42</td>
</tr>
<tr>
<td>School level</td>
<td>118</td>
<td>165.24</td>
<td>16.91</td>
</tr>
<tr>
<td>College level</td>
<td>37</td>
<td>166.97</td>
<td>11.88</td>
</tr>
<tr>
<td>Total</td>
<td>210</td>
<td>165.55</td>
<td>15.69</td>
</tr>
</tbody>
</table>

Table 5. Showing mean, SD and t-test of higher secondary school students’ attitude towards computer on the basis of gender.

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t-value</th>
<th>Level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>105</td>
<td>165.82</td>
<td>16.69</td>
<td>0.22</td>
<td>NS</td>
</tr>
<tr>
<td>Female</td>
<td>105</td>
<td>165.32</td>
<td>14.89</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

computer.

Table 4 reveals the mean and standard deviation of attitude of higher secondary students towards computer on the basis of mother education. The calculated values are above the mid value that is 165.25, 165.24, 166.97 for the illiterate, school level and college level respectively. From the table it is found that “The students whose mothers are in different educational qualification namely illiterate, a school level and college level have favourable attitude towards computer.

Table 5 shows that the higher secondary students do not differ in their attitude towards Computer on the basis of gender. The calculated t-value (0.22), which is not significant at 0.01 and 0.05 levels, therefore it is found that there is no significant difference between male and female students in their attitude towards Computer. Hence the stated hypothesis is accepted.

Table 6 shows that the higher secondary school students do not differ in their attitude towards computer on the basis of father’s education. The calculated f-value (1.02), which is not significant at 0.01 and 0.05 level, therefore it is found that no significant difference in computer attitude
Table 6. Showing mean, SD and f-test of higher secondary school students attitude towards computer on the basis of father’s educational level.

<table>
<thead>
<tr>
<th>Father’s education level</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>F-value</th>
<th>Level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterate</td>
<td>44</td>
<td>165.34</td>
<td>14.13</td>
<td>1.02</td>
<td>NS</td>
</tr>
<tr>
<td>School level</td>
<td>112</td>
<td>164.39</td>
<td>17.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College level</td>
<td>54</td>
<td>168.11</td>
<td>13.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>210</td>
<td>165.55</td>
<td>15.69</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7. Showing mean, SD and f-test for higher secondary school students attitude towards computer on the basis of mother’s educational level.

<table>
<thead>
<tr>
<th>Mother’s educational level</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>F-value</th>
<th>Level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterate</td>
<td>55</td>
<td>165.25</td>
<td>15.42</td>
<td>0.18</td>
<td>NS</td>
</tr>
<tr>
<td>School level</td>
<td>118</td>
<td>165.24</td>
<td>16.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College level</td>
<td>37</td>
<td>166.97</td>
<td>11.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>210</td>
<td>165.55</td>
<td>15.69</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

among Higher secondary students on the basis of their father education namely illiterate, school level and college level.

Table 7 shows that the higher secondary school students do not differ in their attitude towards computer on the basis of mother’s education. The calculated f-value (0.18), which is not significant at 0.01 and 0.05 level, therefore it is found that no significant difference in computer attitude among higher secondary School students on the basis of mother’s education namely illiterate, school level and college level.

**DISCUSSION AND CONCLUSION**

After analysis of the data collected, it has been found that the entire samples of higher secondary school students’ attitude towards computer are favourable. It has been found that the attitude scores of students towards computer did not change according to gender. Both male and female students attitude towards computer are favourable. This confirms previous findings by Köse and Gezer (2006), who demonstrated that higher secondary school students’ attitude scores did not vary in function of gender. Hunt and Bohlin (1993) and Çelik and Ceylan (2009) also came to the conclusion that gender did not have an influence on attitudes towards computer (Dyck and Smither, 1994; Houle, 1996). Mitra et al. (2000) claim that as computers became more popular during the 1990s, more studies began to conclude that there is no significant gender difference in attitude toward computers. However, some conflicting results have also been reported. Robertson et al. (1995) revealed that male students have more favourable attitudes toward computers than female students do. Shashaani (1997) reported that females were less interested in computers and less confident than males among college students. Mitra et al. (2000) pointed out that females were less positive about computers than males and the usage level of computers by females were less frequent in a longitudinal survey of college students. One previous research found no significant difference between males and females in their attitudes of ‘efficacy’ or sense of confidence in ability to use computers (Smith, 1986). Numerous studies pertaining to attitudes toward computer and their relationship with gender have not yielded clear cut conclusions. For example various studies reveal that boys have more positive attitudes towards computer (Ogilvie et al., 1999; Badagliacco, 1990; Liao, 1999) and enjoy working with them more (Collis et al., 1989; Shashaani, 1993), and show more interest (Levin and Barry, 1997; Krendle et al., 1993). In contrast, girls tend to be more stressed out using computers and less successful with them than boys (Sutton, 1991). Pope-Davis and Twing (1991) did not find statistically significant results to support a gender difference in their study regarding computer attitude and gender. However, unlike the preceding studies, De Remer (1989) reported that female third grade and sixth grade students showed a greater degree of liking computers than males. Similar results were reported in Lever et al. (1989) study of fifth-grade students, which suggested that females held more positive attitudes towards computers than males. The research also showed that the level of education
of the students’ parents did not have any type of effect on the attitude scores towards computer of the students. The students whose fathers and mothers are in different educational qualification namely, illiterate, school level and college level have favourable attitude towards computer. There is no significant difference between male and female students in their attitude towards computer. There is no significant difference in computer attitude among higher secondary school students on the basis of their fathers and mothers education, that is, illiterate, school level and College level. It is worth saying that amongst the researched group; most of the students’ mothers and fathers had not received any type of formal education, and the students’ fathers and mothers generally had a school level type of education. Taking these findings into account, we must therefore not expect the parents’ level of education to have any significant impact on the students’ attitude scores. Shashaani and Khalili (2001) had already shown in a study conducted in Iran that the family’s socioeconomic situation did not have an influence on attitude scores towards computer.

REFERENCES


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