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A Study on Use of Computer Among Higher Secondary Students as Related with their Achievement in Computer Science

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Abstract

The present attempt is to study the use of computer and its' possible relationship to and achievement in computer science among higher secondary students. The present study aims at finding the levels of use of computer and achievement in computer science among higher secondary students. The investigators have randomly selected 802 higher secondary students from higher secondary schools as sample. A scale to measure use of computer among higher secondary Students was used in this study. From this study, it is evident that the use of computer and Achievement in computer science is average in higher secondary students. The result reveals that there is no significant relationship between the use of the computer with Achievement in computer science of higher secondary students. This study reveals that the use of computer and Achievement in computer science of higher secondary students needs to be improved.

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Introduction

Main function of secondary education is to prepare the young to live effectively and properly as adults in the society. It will also help to develop intellectual powers of the young and transmit the knowledge and wisdom of the society to the new generation. Now a day the world is changing rapidly with the technological advancement. So students must cater with the needs of the society. Information Technology is the most developing science. So the students must know the application of the Information Technology in daily life. The tremendous influence and growth of computer technology creates pressures on everyone affected by its proliferation to interact with computers and become proficient in their use. The computer is causing a change in society that is comparable to the change occasioned by the industrial revolution. This awareness depends upon the use of computer among the higher secondary students. The use of computer among the higher secondary students is connected with Achievement in computer science. The successful completion of this study is depending upon the use of computer and Achievement in computer science of the higher secondary students. So we must know the levels of use of computer and Achievement in computer science.

The present study will contribute to some extent for that knowledge. In this era of technological advancement, computer education is considered to be an essential ingredient of education. But use of computer and Achievement in computer science, of a student is an important factor in determining his progress in the field of computer education. Since the computer education is now a part of many higher secondary levels have computer awareness. The students and teachers belonging to higher secondary levels may have a chance of good knowledge in computer. The students already had some familiarity or had not have familiarity with the use of computer at higher secondary level. Achievement in computer science of students in education are inevitably affected by their familiarity with access to the technology. The computer knowledge possessed by the students will be very useful to them for their future development and if they have a high level Achievement in computer science then they may an inclination towards the use of computer knowledge for their academic growth. It is also believed that if they possess a high level of achievement in computer science then there may be a chance for them to make use of computer easily. The aim of the study reported here was to investigate "A study on use of computer among higher secondary students as related with their achievement in computer science".

Objectives

The investigator has framed the following objectives for this present investigation.

1) To find out use of computer and its possible relationship to Achievement in computer science.
2) To find out use of computer and its possible association to Achievement in computer science.
3) To study the significance of the difference between the sub-samples of the students in respect of their Use of computer and Achievement in computer science.
4) To study the levels of use of computer and Achievement in computer science among higher secondary students.

Hypotheses

1) There is significant relationship between use of computer with Achievement in computer science of higher secondary students.
2) There is significant association between use of computer with Achievement in computer science of higher secondary students.
3) There is significant difference in the use of computer between: male and female higher secondary students; higher secondary students studying in urban schools and rural schools; higher secondary students studying in Science and arts subject; Parent's with knowledge about computer and Parent's without knowledge about computer of higher secondary students, Availability of Personal computer at home and not availability of Personal computer at home of higher secondary students.
4) There is significant difference in the Achievement in computer science between: male and female higher secondary students; higher secondary students studying in urban schools and rural schools; higher secondary students studying in Science and arts subject; Parent's with knowledge about computer and Parent's without knowledge about computer of higher secondary students, Availability of Personal computer at home and not availability of Personal computer at home of higher secondary students.

Procedure

Tool

Tool used were: a scale to measure use of computer among higher secondary Students constructed and validated by the investigator (2008). Achievement in computer science was measured from the achievement scores in computer science of higher secondary students are taken from teachers. In the present study a scale to measure use of computer among the higher secondary Students is constructed and validated by the investigator was used. It is of the Likert type having as many as 32 statements. Each statement is set against a 5 point scale of "often", "always", "sometimes", "never" and weight of 4,3,2,1 are given in that order for the statements .An individual score is sum of all the scores for the 32 items. The score in the scale to measure use of computer range form 0 to 128. The reliability and validity of the scale is 0.62 and 0.78.

Sample

Cluster sampling technique has been used in the selection of the sample of as many as 802 students studying in the Higher Secondary Schools situated in the Thrissur district of Kerala, India. 25 Higher Secondary Schools have been chosen by lottery method from Thrissur district of Kerala. Out of these 25 Higher Secondary Schools, 11 happened to be located in the urban areas and the remaining 14 were located in the rural areas. Likewise out of the 25 Higher Secondary Schools, 7 happened to be Higher Secondary Schools with science students and the remaining 18 happened to be Higher Secondary Schools with arts students. All the available students studying in each of these selected Higher Secondary Schools were chosen as sample. This sample of 802 students in the Higher Secondary Schools is found to have the following sub-samples: (1) Male Students (N=400), (2) Female Students (N=402), (3) Students from Urban schools (N=392), (4) Students from rural schools (N=410), (5) Students studying in science subject

(N=400), (6) Students studying in arts subject (N=402), (7) higher secondary Student's Parents with knowledge about computer (N=211), (8) higher secondary Student's Parents without knowledge about computer (N=591), (9) higher secondary Student's Availability of Personal computer at home(N=145), (10) higher secondary Student's no Availability of Personal computer at home(N=657).

Statistical Treatment of the Data

The means and standard deviations of the use of computer scores and Achievement in computer science scores were computed directly from the respective raw scores for the entire sample and its five sub-samples of the higher secondary students. The percentages of the entire sample of the higher secondary students who had high, average and low level of use of computer scores and Achievement in computer science scores were also computed as shown in Table 2 and Table 3. The test of significance was used ('t' test) in order to study if there was any significant difference between each selected pair of sub-samples in respect of their use of computer and Achievement in computer science as shown in Table 4 and Table 5,. Pearson's product-moment 'r' was computed between use of computer and Achievement in computer science of the higher secondary students as shown in Table 1. Chi-square value was used in order to study if there was any association between use of computer and Achievement in computer science scores of the higher secondary students.

Table 1 Coefficient of correlation between the variables

Variables	Correlation coefficient
	Entire sample (802)
use of computer and achievement in computer science	0.06

Table 2 Frequency distribution of level of use of computer

Use of computer	Frequency	Percentage
Low	203	25.31
Average	383	47.76
High	216	26.93
Total	802	100.00

Table 3 Frequency Distribution of Level of Achievement in Computer Science

Computer attitude	Frequency	Percentage
Low	240	29.93
Average	346	43.14
High	216	26.93
Total	802	100.00

Table 4 Data and results of the test of significance of difference between mean scores of use of computer based on relevant sub-samples

Variable	Category	Mean	S.D	N	Calculated 't' value	Significance at 5% level
a. Gender	Male	71..09	13..75	400	5.44	S
	Female	65.85	13.56	400		
b. Location	Urban	68.15	14.76	389	0.63	NS
	Rural	68.77	13.03	411		

c. Stream of subject	Science	66.73	15.32	399	3.54	S
	Art	70.19	12.09	401		
d. Parents knowledge about computer	Yes	73.79	12.66	211	6.65	S
	No	66.57	13.83	589		
e. availability of Personal computer at home	Yes	74.76	13.48	145	6.16	S
	No	67.08	13.61	655		

(Table value of 't' at 5% level of significance is 1.96)

Table 5 Data and results of the test of significance of difference between mean scores of achievement in computer science based on relevant sub-samples

Variable	Category	Mean	S.D	N	Calculated 't' value	Significance at 5% level
a. Gender	Male	33.45	8.10	400	0.19	NS
	Female	33.56	8.17	400		
b. Location	Urban	33.59	8.18	389	0.28	NS
	Rural	33.43	8.10	411		
c. Stream of subject	Science	33.74	8.20	399	0.82	NS
	Art	33.27	8.06	401		
d. Parents knowledge about computer	Yes	33.79	8.11	211	0.60	NS
	No	33.40	8.14	589		
e. availability of Personal computer at home	Yes	33.30	8.08	145	0.34	NS
	No	33.55	8.15	655		

(Table value of 't' at 5% level of significance is 1.96)

Findings

The results showed that there was;

- No significant relationship between use of computer with Achievement in computer science of higher secondary students.
- Significant association between use of computer with Achievement in computer science of higher secondary students.
- Significant difference in the use of computer between male and female higher secondary students. Compare to female, the male higher secondary students have better use of computer.
- Significant difference in the use of computer between higher secondary students studying in Science and arts subject. Compare to science, arts higher secondary students are better in use of computer.
- Significant difference in the use of computer between Parent's with knowledge about computer and Parent's without knowledge about computer of higher secondary students. Compare to

parents without knowledge about computer, parents with knowledge about computer of higher secondary students. have better use in computer.

- Significant difference in the use of computer between Availability of Personal computer at home and not availability of Personal computer at home of higher secondary students. Compare to not availability of Personal computer at home, availability of computer at home of higher secondary students have better use in computer.
- No significant difference in the use of computer between higher secondary students studying in urban schools and rural schools.
- No significant difference in the Achievement in computer science between: male and female higher secondary students; higher secondary students studying in urban schools and rural schools; higher secondary students studying in Science and arts subject; Parent's with knowledge about computer and Parent's without knowledge about computer of higher secondary students, Availability of Personal computer at home and not availability of Personal computer at home of higher secondary students

Further,

- About 26.93% of higher secondary students, taken for the study have shown high use of computer whereas 47.76% and 25.31% of higher secondary students, taken for the study have shown average and low use of computer.
- About 26.93% of higher secondary students, taken for the study have shown high computer attitude whereas 43.14% and 29.93 % of higher secondary students, taken for the study have shown average and low Achievement in computer science.

Conclusion

The study served as an eye opener regarding the use of computer and Achievement in computer science of higher secondary students. Even though there are some limitations in the present study, it is evident that the use of computer and achievement in computer science is average in higher secondary students. The result reveals that there is no significant relationship between the use of the computer with achievement in computer science of higher secondary students. Also a significant difference is observed in the use of computer between groups regarding gender, stream of subject, Parents knowledge about computer and Availability of Personal computer at home. This revealed that the use of computer and achievement in computer science of higher secondary students needs to be improved.

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