# COMPUTER AWARENESS AMONG PROSPECTIVE SECONDARY SCHOOL TEACHERS WITH RESPECT TO GENDER AND ACADEMIC STREAM

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_____ *Abstract* _____

*The main aim of the present investigation was to study computer awareness among prospective secondary school teachers with respect to gender and academic stream. For conducting this study, a sample of 850 prospective secondary school teachers from 38 B.Ed. colleges was selected by adopting stratified random sampling technique. Data were collected from prospective secondary school teachers with the help of Computer Awareness Test developed by Sood and Reena (2017). Mean, S.D. and t- test was used for analyzing the data. The findings of the study revealed that female prospective secondary school teachers possessed significantly high computer awareness as compared to male prospective secondary school teachers. Similarly, prospective secondary school teachers of science stream possessed significantly more computer awareness as compared to prospective secondary school teachers of arts stream. In the end of the paper, implications of the study have been discussed.*
*Keywords: Computer Awareness, Prospective Secondary School Teachers.*

## Introduction

Technology plays an important role in accelerating economic growth and promoting development. Perhaps no other single technological innovation during the second half of the 21st century that has touched so many lives, than the computer. Computers and computerized devices have become an integral part of society. In fact, many people use them in schools, homes, and the workplace. It has become imperative to know basic computer skills to survive in the world. Computer awareness is awareness of the computer's importance, knowledge of what computers are and how they work and interaction (ability to interact with computers). A few definitions are available in literature for the term "computer awareness" worldwide, if a person has heard of at least one of the uses of a computer (e.g. playing games to complicated aeronautic applications), then he/she is considered a person with computer awareness. Another study has used five pointers: short history of computers, short history of Internet, ways computers are used in the society, occupations related to computer use and computer ethics, in order to measure the awareness. A person is considered "computer aware" if he/she

possesses all of the following characteristics: Knowledge about the fundamentals of computers (i.e. Hardware and software computer systems, Computer generations etc.), Knowledge about the fundamentals of Internet (i.e. what is Internet, what are the services offered by the Internet? etc.). Knowledge related to computer concepts such as social, ethical and legal issue. Kafai and Button (1999) indicated that most of the students computer use was dedicated to game playing followed by various other software activates while home computer ownership was not gender specific activities. Shaw and Giacquinta (2000) reported that educational technology students were engaged in using computers more frequently, for a wide array of purposes and for greater number of hours each week than students in the educational administration, business education and higher education programmes. Cagiltayet. al. (2001) found that teachers were not sufficiently trained to use computers in their classroom but they agreed that technology will significantly influence education and that the ultimate goal of teacher computer literacy training should be to have computer-literate teachers who utilize computer technology successfully in the classroom. Asan (2002) found thatpre-service teachers and classroom teachers practiced developing instructional materials and integrating technology in subject content areas, became more comfortable with the technology and developed greater proficiency in their computer use. Asan (2003)found that many teachers were not computer users. Many teachers lacked a functional computer literacy foundation upon which to build new technology and skills. Analysis of teachers' knowledge of computer technologies revealed low levels of technical knowledge, as well as some interesting perceptions of the role of some specific computer-related items. For most teachers, the use of computers and related technologies had not been a routine part of their own educational environment. This study showed that gender, years of teaching, and school status have a significant relationship to familiarity with computer technologies in Turkey. Hall (2007) examined that teachers with more constructivist beliefs were more likely to use computers more frequently, to use a greater variety of software, and to use computers in constructivist oriented ways. Variables, such as staff development, software availability and teacher's expertise had a positive impact on the computer use of all teachers. Further, Gross and Latham (2009) found that undergraduate students were computer information proficient, but their knowledge and information searching skills were insufficient. Rafeedali (2009) found that most of the higher secondary school teachers have basic computer knowledge. Higher secondary teachers were not using the IT resources in the class room interactions. Only 13% of higher secondary school teachers were using power point in the class room.

Son, Robb and Indra (2011) indicated that the self-evaluation of basic computing skills of teachers are generally high but their frequency of using computer applications is very limited to few types of applications such as word processing. They seem to have little knowledge and use of databases, concordances and computer-mediated communication (CMC) tools in particular. Second, the teachers had very diverse experiences with computer applications and primary school teachers, particularly, showed very low levels of general computer use. Tharanganie, Wickremasinghe and Lakraj (2011) found that from the entry-level University of Colombo undergraduates, majority of students have used a computer and/or Internet. Moreover, most of the students were computer aware and most were computer literate. Further, males in general outperformed females in computer awareness, computer literacy and Internet usage. Moreover, Alabi and Yisa (2013) found that the teachers' level of computer literacy was 44% and there was significant relationship between computer literacy and teacher job effectiveness. Lee and Huang (2014) indicated that computer literacy can help form positive computer self-efficacy more effectively for males than for females, and computer anxiety can lead to more negative computer self-efficacy for females than for males. A three-way interaction also exists among computer literacy, computer anxiety and gender. Ananthula and Maheswari (2015) found that boys had high computer awareness than secondary school girls. This study also showed that private school students of secondary schools had high awareness than government school students at secondary level. Further, Gbenu, Jimoh and Lawal (2016) indicated that public primary school teachers were aware of the use of computers in a classroom setting; there was a statistically significant difference between the male and female teachers on the computer awareness and application; and there was no significant difference between the younger and older teachers on the subject matter of computer awareness and application.

It has been generally witnessed and observed from the empirical investigations that the computers have contributed exclusively as a teaching tool in classroom. The use of computers and technology in education has changed the teaching and learning process in several ways and helped teachers/students to enhance education process in a very short period of time. Thus, due to computer awareness, teachers can make their students scientific and creative to become highly skilled professionals and responsible citizens of country. Therefore, it is essential that teachers right from the stage of their pre-service training should be imparted training in using computers for academic purposes. Hence, it was decided to undertake present investigation to study the existing level of computer awareness among

prospective secondary school teachers so that recommendations could be made for bringing necessary reforms in curriculum of B.Ed. course, if required.

**Objectives**

1.  To study gender-wise difference in computer awareness among prospective secondary school teachers.

2.  To study academic stream-wise difference in computer awareness among prospective secondary school teachers.

**Hypotheses**

1.  There exists no significant gender-wise difference in computer awareness among prospective secondary school teachers.

2.  There exists no significant academic stream-wise difference in computer awareness among prospective secondary school teachers.

**Methodology**

For conducting the present investigation, survey technique under descriptive method of research was employed.

**Sampling**

A representative sample of 850 prospective secondary school teachers (pursuing B.Ed. course) from38 pre-service secondary teacher training institutions of Kangra, Hamirpur, Una, Bilaspur, Mandi, Solan and Shimla districts of Himachal Pradesh was selected by applying stratified random sampling technique.

**Research Tool Used**

Computer Awareness Test developed by Sood and Reena (2017) was used to study computer awareness level among prospective secondary school teachers.

**Analysis of Data**

The data were analyzed with the help of descriptive statistics and t-test was used to study gender-wise and academic stream-wise difference in computer awareness among prospective secondary school teachers.

**Findings of the Study**

1.  In order to study the difference in computer awareness among male and female prospective secondary school teachers,means, standard deviations, standard error of difference between means and t-value were calculated which are given in Table 1.

**Table 1 Means, Standard Deviations, Standard Error of Difference between Means andt-Value in respect of Computer Awareness of Male and Female Prospective Secondary School Teachers**

| Variable | | Gender | | $SE_{dm}$ | $d_f$ | t-value | Eta-Squared |
|---|---|---|---|---|---|---|---|
| | | Male (N=226) | Female (N=624) | | | | |
| Computer Awareness | Mean | 28.13 | 28.52 | 0.64 | 848 | 0.61[NS] | 0.000438 |
| | SD | 8.192 | 8.285 | | | | |

NS-    Not Significant

Table 1 reveals that the mean computer awareness score of male prospective secondary school teachers was found to be 28.13and the mean computer awareness score of female prospective secondary school teachers was computed to be 28.52. The calculated value of 't' testing the significance of the mean difference (0.39) came out to be 0.61which was not significant even at 0.05 level of significance, for $d_f$ 848.

Hence, the Hypothesis that, "There exists no significant gender-wise difference in computer awareness among prospective secondary school teachers", was accepted. So, it may be interpreted that male and female prospective secondary school teachers possessed similar level of computer awareness. Although, female prospective secondary school teachers possessed little bit higher computer awareness (mean= 28.52) as compared to male prospective secondary school teachers (mean= 28.13). Further, the computed value of eta-squared (0.000438) indicated that gender has a very small effect on computer awareness of prospective secondary school teachers. In other words, it may be said that the variable of gender contributes only about 0.044% towards computer awareness of prospective teachers.

2.    In order to study the difference in computer awareness among arts and science stream prospective secondary school teachers, means, standard deviations, standard error of difference between means and t-value were calculated which are given in Table 2.

**Table 2 Means, Standard Deviations, Standard Error of Difference between Meansandt-Value in respect of Computer Awareness of Prospective Secondary School Teachers of Arts and Science Stream**

| Variable | | Academic Stream | | $SE_{dm}$ | $d_f$ | t-value | Eta-Squared |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | | Arts (N=504) | Science (N=346) | | | | |
| **Computer Awareness** | **Mean** | 26.71 | 30.91 | 0.54 | 848 | 7.78** | 0.066622 |
| | **SD** | 8.531 | 7.157 | | | | |

** Significant at 0.01 level of significance.

Table 2 reveals that the mean computer awareness score of prospective secondary school teachers of arts stream was found to be 26.71. Similarly, the mean computer awareness score of prospective secondary school teachers of science stream was computed to be 30.91. The calculated value of 't' testing the significance of the mean difference (4.20) came out to be 7.78 which was highly significant at 0.01 level of significance, for $d_f$848.

Hence, the Hypothesis that, "There exists no significant academic stream-wise difference in computer awareness of prospective secondary school teachers", was not accepted. So, it may be interpreted that prospective secondary school teachers of arts and science streams differed significantly from each other with respect to their computer awareness. The prospective secondary school teachers of science stream had shown significantly higher computer awareness as compared to prospective secondary school teachers of arts stream. Further, the computed value of eta-squared (0.066622) indicated that academic stream has moderate effect on computer awareness of prospective secondary school teachers. In other words, it may be said that the variable of academic stream contributes about 6.662% towards computer awareness of prospective teachers.

**Conclusions**

1. Prospective secondary school teachers possessed average level of computer awareness irrespective of their gender and academic stream.

2. Male and female prospective secondary school teachers did not differ significantly from each other with respect to their computer awareness. However, it may be concluded that mean computer awareness score (28.52) of female prospective secondary school teachers is little bit higher than the mean computer awareness score (28.13) of male prospective secondary school teachers. Moreover, the variable of gender was found to have very small effect on computer awareness and contributed only 0.044% towards computer awareness of prospective teachers.

3.     Prospective secondary school teachers of arts and science streams differed significantly from each other with respect to their computer awareness. It may be concluded that mean computer awareness score (30.91) of prospective secondary school teachers of science stream is higher than the mean computer awareness score (26.71) of prospective secondary school teachers of arts stream. Prospective secondary school teachers of science stream possessed significantly higher computer awareness in comparison to the prospective secondary school teachers of arts stream. Moreover, the variable of academic stream was found to have moderate effect on computer awareness and contributed 6.662% towards computer awareness of prospective teachers.

**Implications**

The present investigation was conducted to study computer awareness among prospective secondary school teachers with respect to their gender and academic stream. After drawing out the results from the study, it has been found that the level of computer awareness among the two groups (male and female) was almost same. Further, the prospective teachers of science stream possessed significantly higher computer awareness as compared to arts stream prospective teachers. This may be due to the reason that the nature of the subjects studied by the prospective science stream teachers during their previous academic years is more or less related to the nature of the content matter covered in the computer education / ICT subject. Due to this, the science stream prospective teachers are already familiar to some extent with the nature of computer education / ICT subject matter and therefore, possessed more computer awareness. On the other hand, arts stream prospective teachers had studied such subjects in their previous academic years whose nature is entirely different from computer / ICT related subject matter. Hence, it is recommended that in the teacher training institutions, the computer instructors and the teacher educators should provide more attention towards arts stream student-teachers while imparting computer-related knowledge and skills to them. Special theory as well as practical classes on fundamentals of computers and use of computers in teaching-learning process may be organized by the college authorities for the prospective teachers of arts stream. More time should be devoted for computer classes in time-table. Practical aspects of computer education should be given more weightage. Now a days, there are smart classes not only in private educational institutions but also in government schools under the schemes of CAL and ICT. So, use of computers is the need of the time. In order to perform better in real teaching, proper computer training should be provided to prospective secondary school teachers. They should not only be imparted training to make general use of computers but this training should be specifically based on using computers for teaching-learning purposes. A greater use of computers in teaching-learning process by teacher educators in B.Ed. colleges can enhance computer awareness among prospective teachers to a larger extent.

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