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A Comparative Study of Computer Skills among Higher Secondary School Students Based on Selected Personal Variables

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Abstract

Computers and computerized devices have become an integral part of modern society and are widely used in schools, homes, and workplaces. In this context, possessing basic computer skills has become essential for effective participation in contemporary life. The present study aimed to examine the interaction effects of gender, type of school, and locality on higher secondary school students' computer skills, with specific reference to their participation in computer science courses. The survey method was adopted, and data were collected from 504 higher secondary school students. The findings revealed that there were statistically significant differences in computer skills based on gender and type of schoo**l**, whereas no significant difference was observed with respect to students' locality**.** The results of this study provide valuable insights for school administrators, teachers, and parents regarding the influence of participation in computer science education on students' computer skill development and their interest in pursuing careers in Computer Science. Furthermore, schools may utilize these findings to create learning environments that offer greater opportunities for students to engage in computer science courses, which may, in turn, foster increased interest in technology-related careers. The study also highlights the importance of addressing gender-related differences in computer skills and participation**,** enabling educators to plan targeted interventions that promote equitable access and skill development in computer science education.

Keywords*:* Computer Skill, Computer Science, Higher secondary school Students.

Introduction

Today computer and computer usage has brought vast advantages to teachers and students, but those struggles to make use of such technology in schools remain high. This has been attributed to many factors that range from shortage of computers and computer resources due to budgetary constraints, inadequate time to use computers, lack of professional development for technology use, deficient technical knowledge and skill, lack of suitable software, no electricity supply and technical support for effective use of computer and computer in teachers factors that limit usage in teaching and learning in secondary schools.

The education system of any nation is reflected through quality and that reflection of the nation being shaped and likely to be shaped. It is the potential cause for change in any society and the backbone for the development of any nation. Likewise, technology is adopted in many more fields. Nowadays technologies integrate with educational sectors. Technology includes computerized and utilized computer resources in these educational sectors. So, the researcher focuses on the area of "computer in education". The selected research problem is skill of using computer among higher secondary school students. Today's technology continuously improves our lives, whether it's related to personal, business, or educational matters. For most people, technology is already an integral part of their lives and cannot finish a day's task without it. This promotes the notion that, in general, people need to learn about the most common technology that they come face-to-face with - computers. Most people agree that there is a need for the younger generation to understand how computers work for them. However, there is still a slight disconnect as to what computer skills need to be enforced on high school students and what they need to master to ensure survival once they are out on their own.

There are still questions and comparisons about measuring a high school student's competency or computer skills. Can a student be considered well-versed in computers if they can play computer games, chat online, or surf the internet? Is it necessary to have high school students learn how to operate a word processor, a spreadsheet, or a presentation creator? What are the sufficient skills needed for high school students to prepare them for entering college or the workplace? In some instances, the computer skills that high school students need to master are misconstrued, and learning how to use the computer in a productive manner is often neglected in comparison to knowing how to use a computer for internet and social purposes. Only a small number of high school students know how to use computers

for their projects, presentations, and computations. Students need to learn how to be more computer literate in terms of the latter; because this is what they will be doing most of the time once they graduate high school. Never mind the work or career that they will engage in because having computer skills for productivity is what matters most. In essence, having high school students master the above-mentioned computer skills will give them an edge once they set foot in either the college or their workplace. It doesn't require them to learn every nook and cranny of a computer, but learning how to utilize its main purpose will definitely help them survive in the future.

Review of Related Studies

Ibrahem Usama and Alamro Abdulaziz (2021) investigated the effects of Infographics on Developing Computer Knowledge, Skills and Achievement Motivation among Hail University Students. This study revealed that the use of SI had a greater effect on female student learning while AI was found more effective for male student learning. We believe that the current study might contribute particularly to the use of infographics for defining clear educational goals and curriculum reforms reflecting students' needs, ability, gender, age and the context. Amer Mohammed and Elmetwali Mohammed (2020) studied the Impact of Distance Education on Learning Outcome in Computer Skills Course in Prince Sattam bin Abdulaziz University: An Experimental Study. It was found that both groups share similar levels of computer literacy. It was found that distance education has a significant positive impact on students' academic achievement in the computer skills course. The researcher recommends adding online instructional activities to the curricula used in Saudi universities.

Hsu Ting-Chia (2016) studied the effects of a Peer Assessment System Based on a Grid-Based Knowledge Classification Approach on Computer Skills Training. The results showed that the learning achievements of the students using the proposed system were significantly better than those of the other two groups. Therefore, integrating the knowledge engineering approach with the peer-assessment process can benefit students' learning, and help them attain computer skills certification. The dynamic peer assessment with knowledge classification approach is not only useful, but can also be repeatedly applied to different question sets of the certificate of computer software application. Mor Dalit, Laks Hagar, and Hershkovitz Arnon (2016) examined the computer skills training and readiness to work with computers. In today's job market, computer skills are part of the prerequisites for many jobs. Overall, our analyses shed light on the predominance of log-based variables over

variables from other categories. These findings might hint at the need of developing new assessment tools for learners and trainees that take into consideration human-computer interaction when measuring self-efficacy variables.

Baker William (2013) Empirically assessing the importance of computer skills. This research determines which computer skills are important for entry-level accountants, and whether some skills are more important than others. Students participated before and after internships in public accounting. Longitudinal analysis is also provided; responses from 2001 are compared to those from 2008-2009. Responses are also compared to small samples of faculty and certified public accountant firm recruiters. The computer skills examined are accounting software, databases, e-mail or Internet, programming, spreadsheets, and word processing. Students believe that grade point averages and all 6 computer skills are important. Faculty and recruiters believe all skills are important except programming skills. Differences exist based on audit versus tax and on gender. Spreadsheet skills are by far the most important. Adamakis Manolis and Zounhia Katerina (2013) studied Greek undergraduate physical education students' basic computer skills. The sample consisted of 313 final-year undergraduate students: fourth-year PE students (168 male, 145 female) of the Faculty of Physical Education and Sport Science of Athens University. The students responded to the Basic Computer Skills Survey created by the International Society of Technology in Education. The findings of the present research demonstrated PE students do not feel their basic computer skills are sufficient. The rate of fluency was increased only in relation to the high school courses they had chosen, confirming in part the effect of secondary education in learning basic computer skills.

Objectives

- To find out the level of computer skills among higher secondary school students.
- To find out the significant difference of selected demographic variables on the computer skills among higher secondary school students:
  - ✓ Gender (Boys/ Girls)
  - ✓ Type of school (Government/ Aided/ Private /CBSE)
  - ✓ Locality of school (Rural/ Urban)

Methodology The survey method is adopted for this study as it is the most appropriate method. It is a kind of research method involving the collection of data directly from a population or a selected sample at a particular time period.

Sample

The study focused on the population of higher secondary school students in government, government-aided, Private and CBSE schools located in the Salem district of Tamil Nadu. Sequentially the researcher handled a proportionate stratified random sampling technique and collected data from 504 higher secondary school students in Salem district.

Pilot Testing

The purpose of a pilot is to enhance the reliability, validity, and practical application of the questionnaire. It is to test the questionnaire with persons who have relative expertise in the field, to suppose any issues. The pilot study was then conducted before data collection. The researcher followed the suggestion for supervisor split of the method used. It was presented to various groups of 50 higher secondary school students in the Salem district. The scrutiny of the experts gave added value to the questionnaire before finalisation; the instrument was amended following their feedback. The second method of piloting the student questionnaire was that it was distributed as a pilot questionnaire to the same 50 higher secondary school students. Then next step find out the item-wise t value, and finally, try out the few items in the questionnaire.

Validity of the Tool

The questionnaires were given to the guide and some other experts to establish the face and content validity of the tool. They suggested some modifications in some of the items. Next the investigator for rectification and modification.

Reliability of the tool

The reliability of the tool or questionnaires was established by Karl Pearson, coefficient and spilt half method as used r value as computer skills in higher secondary school students r value = 0.829.

Data Analysis

The level of Computer Skills among higher secondary school students will be high.

Table 1: The level of Computer skills among higher secondary school students

Variable	*Low*		*Moderate*		*High*	
	N	*%*	*N*	*%*	*N*	*%*
Computer Skills	138	27.38	146	28.97	220	43.65

It is shown from Table 1 that computer skills among 27.38% of higher secondary school students have a low level, 28.97% of higher secondary school students

moderate level and 43.65% of higher secondary school students have a high level. Hence it concluded that computer skills among higher secondary school students are high level.

Hypothesis-2 There is no significant difference in computer skills among higher secondary school students with regards to Gender.

Table-2: Test of significant difference in Computer Skills among higher secondary school students with regards to gender

Variable	*Gender*	*N*	*Mean*	*SD*	*t-value*	*p-value*
Computer Skill	Boys	211	29.99	5.237	3.127	0.004*
	Girls	293	31.32	5.358		

**-Significant*

It is shown in Table 2 that the t-value of 3.127 is higher than the tabulated value of 1.96. Hence, it can be concluded that there is a significant difference in computer skills among higher secondary school students regarding gender.

Hypothesis-3 There is no significant difference in computer skills among higher secondary school students with regard to type of school.

Table-3: Test of significant difference in Computer Skills among higher secondary school students with regard to Type of School

Variable	*Type of School*	*N*	*Mean*	*SD*	*F-value*	*p-value*
Computer Skills	Private	265	24.99	4.167	4.348	0.009*
	Government	122	18.22	3.879		
	Aided	143	17.31	3.128		

**-Significant*

It is shown in Table 3 that the F-value of 4.348 is higher than the tabulated value of 3.00. Hence, it can be concluded that there is a significant difference in computer skills among higher secondary school students regarding the type of school.

Hypothesis-4: There is no significant difference in computer skills among higher secondary school students with regards to with locality of the school.

Table-4: Test of significant difference in Computer Skills among higher secondary school students with regard to Locality of the School

Variable	*Locality of School*	*N*	*Mean*	*SD*	*t-value*	*p-value*
Computer Skill	Rural	244	30.60	5.389	1.652	0.512
	Urban	260	30.91	5.306		

It is shown in Table 4 that the t-value of 1.652 is lower than the tabulated value of 1.96. Hence, it can be concluded that there is no significant difference in computer skills among higher secondary school students regarding the locality of the school.

Recommendations

- The teachers should be given some basic training on the use of computers specialized course.
- The teachers should be advised on responsible use of computer facilities in order to ensure that there is no addiction to the use of computers at the expense of engaging in other non-important activities like games.
- The culture of use of computer facilities should be encouraged in school to environment the skills infatuated by some of the teachers and the students. This can be done by encouraging the use of PowerPoint throughout meetings instruct. The teachers should also be confident to type their own work as a substitute for depending on the desk.
- The teachers should be encouraged to acquire enough computer skills at the time they are in college. This can be achieved by the lectures encouraging typed presentations, staging of projects and research papers using PowerPoint, openhanded homework whose matter can only be found on the internet and encouraging the students to hand in their homework through the mail.

Conclusion

The major findings of the study revealed that there is a statistically significant difference in computer skills among higher secondary school students with respect to gender and type of school, whereas no significant difference was found based on students' locality. The study further indicated that most higher secondary schools lack adequate computer facilities, making it difficult to effectively integrate computers into the teaching–learning process. This inadequacy acts as a major obstacle, limiting both teachers' and students' opportunities to utilize computers as instructional and learning tools. Additionally, limited access to technological resources through computer facilities emerged as a key concern among teachers. The findings also suggest that merely providing computer facilities without proper guidance, monitoring, and instructional planning may lead to misuse, resulting in moral and social concerns rather than academic benefits. Moreover, teachers were found to have limited awareness and only a moderately favourable attitude towards computer resources, along with average levels of computer usage skills, which further

constrained the effective integration of computer-based resources in classroom instruction.

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