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Impact of Computer Literacy on Students Learning at Secondary Level

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Abstract

Today is the period of advanced computer technology. Now, the computer has become a necessity for every educated family. There are many positive effects of the computer on the educational, social, ethical and moral development of secondary school students. This stage is very crucial and important in character building. Therefore, proper guidance and coaching are very necessary at this age. This study is about computer literacy effects on students' achievement, behavior, and motivation. Educators realized that computer literacy should be made part and parcel of the education system and there will be no obstacles that blockages its routes in learning institutions. Complete implementation and access to use technologies can be accomplished through open, consistent, clear and positive communication with parents, teachers, and administrators. Computer labs should be established in learning institutions. It is recommended that students should keep a balance between their school studies and technologies usage. They are to use technologies for educational purposes instead of wasting time. Computer literacy helps to establish personality building and broaden the vision of students. The administrators must arrange seminars and workshops about the effective use of computer literacy and the use of technologies for the best interests of the students.

Keywords. Computer, literacy, learning, secondary level

Introduction

The computer has an important and long-lasting effect on daily life. It is important for our professional as well as personal life. There are several types and sizes of computers available in the market and used by different organizations, public as well as private institutions for the collection and manipulation of data. A computer is an electronic machine that stores, retrieve and process data according to the given instructions. If incorrect information is given conclusion will also be incorrect. A computer is a portable

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device sometime it has other portable devices connected to it like a mouse, keyboard, and CPU. Some other accessory components are DVD-ROM drive to play movies, a CD-RW drive to create your own CD's, a printer, scanner, and others.

Computers constitute a common resource at school. A computer has many uses but in school or in the classroom we basically use it for two obvious purposes; as a source of information and as a teaching aid. Computer science as important as it is subject studied at primary and also secondary school (Albirini, A. 2006).

Ram (2003) in his book "Advance Educational technology" describes the different uses of Computers, for example, games, word processing, managing databases, as desktop publishers, illustrators, and presentation tools. But the biggest advantage of having a computer for both the student and the teacher. According to Ramzan (2005), computers have become the biggest controversies in education in recent years. Some people believe that it has many disadvantages that they hamper the imagination intellectual level of young children while some are just opposite to it. Most people agree that computers should be placed in high school settings as they can greatly facilitate classroom learning and independent study. Computers are useful to a wide range of people computers have revolutionized almost all fields of life including business, banking, legislation, airline, education, medicine, police department, industries, markets, and arts. This list of fields will grow more and more in the coming years.

According to Ioana (2009), the working of computers in all spheres of life proves the computer to be a useful, versatile, powerful and fast electronic tool that has become an inescapable part of our life. Computers have helped us to complete tasks faster, easier, and better. It is an enrichment tool for enhancing readiness skills, problem-solving, and creative expression.

Computers and other related technologies have become an enormous part of our daily lives. With the introduction of the internet, the whole world has become a global village. They have altered our sense of people, space and time. From our living rooms, we can now talk to people, that watch events unfold in far-off places. No one can deny the significance of the computer. A computer has become the prime media of imparting education in developed countries, especially after universal access to the World Wide Web in those countries. The first world is in all spheres of life. Our lives are constantly affected by the ever-growing applications of computers. In Pakistan, the process of introducing computers on large scale geared up in 1983-84 when the government of Pakistan lifted the ban on the

import of policy, Pakistan could enter the revolution of personal computers, making computing so economical that many people can now easily afford their own personal computers.

The computer has been introduced almost fifty years ago and it is playing an important role in today's fast-spreading information technologies which started at the end of the twentieth century and is expected to be more sophisticated and highly advanced and informative in the present century. A nation cannot meet the challenges of a 21st-century economy without an electronic infrastructure, embracing computers, data communications, and the other new media. This requires a population as familiar with this informational infrastructure as it is with cars, roads, highways, trains, and the transportation infrastructure.

Our students are unfamiliar with the "informational infrastructure. Most of the students are not aware of the use of computers even they never touched that while the use of computer plays an important role in the development of the world economy. That is the reason there is a serious gap between new job requirements and the ability to perform them. Advances in science and technology have persistently raised literacy requirements. The economy of the country depends on literate people.

Computers teach the students and guide them according to their abilities. The use of a computer makes a student better in professional life. The concepts that are complicated and abstract taught with the help of computer particularly in the field of science. It helps to stretch the student's mind and make them able to perform the many tasks quickly and easily (Bitsadze & Chichua, 2004).

Einsenberg, Lowe, and Ktherine (2004) suggested that students must master computer skills so that they may thrive in information such future. Computers teach the students and guide them according to their abilities. The use of a computer makes a student perfect in their professional life. The concepts that are complicated and abstract in nature can be taught with the help of computer particularly in the field of science. It helps to stretch the student's mind and enables them to perform the many routine tasks quickly and easily.

Druin (2002) said that the teaching material of the computer is being presented in a better and different way and manner. Hence the use of a computer is spreading rapidly in education. When a computer is used as a device it's working field is more spreader.

Lowe (2003) narrated that the computer capabilities promise to improve both the quality and extent of a learning experience. The challenge lies in using these capabilities to

achieve the desired results. Many teachers are taking up these challenges, or have already done so. Many others feel they should, but afraid to try. It is still commonly believed that the computer is a sort of calculations, or that great technical expertise is required to use it. The dual micro conception has pre-conditioned mathematics and science teachers to consider the possibility and utility of using a computer in some way, and conversely, have resulted in many teachers of non-science subjects, believing that the computer is not relevant to their work.

Khan (2017) stated that computer-assisted learning can enhance students learning capabilities and improve their skills. It also saves their time because they can easily access their needed notes and books online and it also provides them quick responses like searching English word meaning online.

A study conducted at Mankato Schools Information Literacy Curriculum Guideline, 2004 proved that Computer skills instruction may be included in a curriculum Students might reasonably be expected to authentically demonstrate basic computer skills before graduation. Lee et al. (2006) stated that the use of computer-aided delivery system is radical development in the history of education, representing the first qualitative change in the delivery system technology since the printing press. According to Mayer (2003), the computer can be used to help with homework or for free-time activities. Even though excessive use of the computer as a mean of entertainment can reduce the personal time students dedicate to study outside of school, tasks such as looking for information online or communicating via the internet improve performance indirectly.

Wellington, J. (2005) said that computer capabilities promise to improve both the quality and extent of a learning experience. The challenges lie in using these capabilities to activate the desired results. Many teachers are taking up these challenges, or have already done so. Many others feel they should, but afraid to try.

Jyoti (2013) pointed out that the speed at which computers affecting our life is alarming, we should not rely upon this technology. They also found a significant relationship between computer use at home and academic achievement. On the other hand, no significant relationship is shown between the use of a computer at school and academic achievement.

Objectives of the study

- To investigate the attitude of students toward the computer.

- To find out the effects of the computer on the character-building process of a student.

- To make the students able to use the computer at school and also at home.

- To explore the relationship between academic performance and frequency of computer use.

Delimitation of the study

Due to limited resources and time available, this study has the following delimitations:

Only secondary classes were selected for this study. The study was confined to eighteen secondary schools of Peshawar District. Two hundred students/parents and forty teachers were selected for the study.

Methodology

The descriptive survey type study was adopted for this research. A questionnaire was prepared to measure the impact of computer literacy on student achievement at secondary level. Two hundred students/parents and forty teachers were selected for research purposes from eighteen secondary schools of Peshawar District. A questionnaire was used for collecting data from students, parents, and teachers. Collected data was analyzed in tabular form, the percentage was calculated and finally, data was presented by using tables. The analysis was written in light of those data in tables. At the end results and discussions were made.

Procedure

It is survey type research which is descriptive in nature. It consists of collecting, analyzing and interpretation of data regarding the impact of computer literacy on student's achievement at secondary level, physical health and social relations of the students at the secondary level, in Peshawar district. A questionnaire was used as a tool for data collection. The collected data was then arranged in from of tabulation, analyzed and then interpreted, from which findings were drawn.

Population and Sample

All the students (male and female) of the secondary level of District Peshawar were comprised of the population for this study. A sample of 200 students including 100 males

and 100 females, their parents and forty teachers of eighteen schools of District Peshawar were selected as a sample.

Analysis of the Data

Table 1. Responses of the Governement Boys School Students

No.	Questions	Yes	%	No	%
1	Are the computers available in your school for your use?	2	4%	48	96%
2	Does a computer help you in your studies?	20	40%	30	60%
3	Do you have a computer in your home?	44	88%	6	12%
4	Is your computer teacher expert in computer studies?	12	24%	38	76%
5	Have you felt any bad effect on your eyes by the excessive use of a computer?	38	76%	12	24%
6	Has the computer made you regular in your studies?	30	60%	20	40%
7	Do you use the computer more than 3 hours daily?	36	72%	14	28%

The table result shows that 4% of students of Government Girls schools responded that computers were available in their schools while 96% of students no computer was available in their homes. In the same table, 40% of students are saying that they are taking help from a computer in their studies while 60% are not taking help from a computer. 88% of students have computers in their homes while 12% of students don't have computers in their homes. 24% of students are saying that their teachers are expert in the computer while 76% of students are saying that they are not experts in computers. 76% of students are saying that they feel the bad effect on eyes after using the computer while 24% are not feeling.60% students are saying that the computer made them regular in their studies while 40% of students are saying opposite to this. 72% of students are saying that they use the computer more than 3 hours daily while 28% of students are not using the computer in their studies for more than 3 hours daily.

Table 2. Responses of the Government Girls School Students.

No	Questions	Yes	%	No	%
8	Do you have net-friends?	22	44%	28	56%
9	Do you take any help from the internet for writing your assignments?	24	48%	26	52%

10	Are you using the internet for entertainment?	40	80%	10	20%
11	Do your parents allow you to use a computer?	42	84%	08	16%
12	Is a computer more helpful than your teacher?	34	68%	16	32%
13	Do you have netcafé near to your home?	38	76%	12	24%
14	Does computer literacy broaden your vision?	28	56%	22	44%

Table data indicate that 44% of students have net friends while 56% of students do not have net friends. It also indicates that 48% of students are taking help in their assignments from the internet while 52% of students are not taking help from the internet in their assignments.80% students are using the internet for entertainment while 20% are not using it. 84% of students are using computers as their parents allow them to use while 16% of students are not allowed by parents to use a computer. 68% of students are feeling that the computer is more helpful for them as compared to a teacher while 32% of students are feeling opposite to this. 76% of students have net-café near to their house while 24% of students don't have net-café near to their houses. 56% of students have found that computers can broaden their vision while 44% of students are thinking that it is not doing so.

Table 3. Responses of the Parents of Students Studying in Government Girls Schools

No.	Questions	Yes	%	No	%
1	Does your child use a computer with your permission?	40	80%	10	20%
2	Does he use a computer for more than 3 hours?	36	72%	14	28%
3	Does your child ever complain about his bad health after the use of a computer?	40	80%	10	20%
4	Are good results due to computer literacy?	32	64%	18	36%
5	Do they help you in home affairs?	34	68%	16	32%
6	Do you keep an eye on them when they are using a computer?	38	76%	12	24%
7	Does your child complain about headaches, backache, stress on eyes, after using a computer?	40	80%	10	20%
8	Do you find any difference in your child's behavior?	28	56%	22	44%
9	Is this difference is positive?	26	52%	24	48%
10	Does your child use a computer for making school notes?	20	40%	30	60%

The table 3 shows that 80% of Government girl's school students using computers with parents' permission, while the percentage of students using a computer more than 3 hours daily. In the same table, 80% of girls of schools complain about bed health after the use of a computer, while 56% of students showed a positive difference in behavior and attitude due to computer knowledge. Mostly students use computers for making school notes which a good result in examinations appears.

Table 4. Responses of the Government Girls School Teachers

No.	Questions	Yes	%	No	%
1	Are you holding a Master degree in computer science?	-	Nil	10	100%
2	Are students taking an interest in computer literacy?	06	60%	04	40%
3	Is a computer better than other A.V aids?	08	80%	02	20%
4	Are you using a computer for A.V aids in your classroom?	-	Nil	10	100%
5	Do you find that computer users show better results than others?	10	100%	-	Nil
6	Do you think students have become regular in the class?	05	50%	05	50%
7	Does computer literacy enhance student's understanding?	09	90%	01	10%
8	Does student show interest in next class after computer class?	04	40%	06	60%
9	Is a teacher more helpful than a computer?	06	60%	04	40%
10	Do you think computer literacy affects personality building?	09	90%	01	10%

Table 4 portrays that no one teacher holds master degrees in computer science. 60% of students are taking interest in computer literacy. 80% students agreed that a computer is used as A.V aids. No one teacher use computer as A.V aids. 100% of students agreed that computer users show good results. 50% of students indicate that a computer can make a man regular. 90% of the students commented that computer literacy enhances understanding. Students are taking more interest in the class next to computer 40% of students are agreeing. 60% of students showed that the computer is more helpful than the teacher. 90% of students claimed that computer literacy affects building personality.

Table 5. Responses of the Parents of the Students Studying in Government Boys Schools

No	Questions	Yes	%	No	%
1	Does your child use a computer with your permission?	32	64%	18	36%
2	Does he use a computer for more than 3 hours daily?	32	64%	18	36%
3	Does your child ever complain about his bad health after the use of a computer?	30	60%	20	40%
4	Are good results in the examination after the use of a computer?	18	36%	32	64%
5	Do they help you in home affairs?	08	16%	42	84%
6	Do you keep an eye on them when they are using a computer?	04	08%	46	92%
7	Does your child complain about headaches, backache, and stress on eyes after using a computer?	36	72%	14	28%
8	Do you find any difference in your child's behavior?	50	100%	-	Nil
9	Is this difference is positive?	12	24%	38	76%
10	Does your child use a computer for making school notes?	14	28%	36	72%

The table indicated that 64% of Government boys schools' students were using computers with parents' permission, while same percentage of students using a computer for more than three hours daily. Here find 60% of boys of schools complain about bad health after the use of a computer, while 40% are comfortable after using a computer.

Table 6. Responses of the Government Boys School Teachers.

No	Questions	Yes	%	No	%
1	Are you holding a master degree in computer science?	01	10%	09	90%
2	Are students taking an interest in computer literacy?	07	70%	03	30%
3	Is a computer better than other A.V aids?	10	100%	-	Nil
4	Are you using a computer for AV aids in the classroom?	-	Nil	10	100%
5	Do computer users show better results than others?	06	60%	04	40%
6	Do students are regular in the studies?	05	50%	05	50%
7	Computer literacy enhances the students understanding?	10	100%	-	Nil

8	student take interest in next class after computer class?	-	Nil	10	100%
9	Is a teacher more helpful than a computer?	10	100%	-	Nil
10	Do you think computer literacy affects personality building?	09	90%	01	10%

Table 6 reflects that 10% of teachers were master degree holders. 70% of students are taking an interest in computer literacy. 100% of teachers are using a computer for A.V aids, they admitted that it enhances their understanding, and a computer is more helpful than the teacher. 60% of teachers agreed that due to computer literacy better results appear, 50% of students are regular in their studies. 90% of teachers claimed that computers can affect their personality.

Table 7. Responses of the Private Girls School Teachers

No	Questions	Yes	%	No	%
1	Are the computers available in your school for your use?	50	100%	-	Nil
2	Does a computer help you in your studies?	44	88%	06	12%
3	Do you have a computer in your home?	38	76%	14	28%
4	computer teacher is expert in computer literacy?	40	80%	10	20%
5	Have you felt any bad effect on your eyes by the excessive use of a computer?	34	68%	16	32%
6	Has the computer made you regular in your studies?	28	56%	22	44%
7	Do you use a computer more than 3 hours daily?	18	36%	32	64%

Table 7 indicates that the students of Private Girl's schools responded that computers available in their schools. 100% of students were found to have computers in their homes. 88% of students claimed that computer help them in their studies, 76% of students have computer in their home, 80% of students told that computer help the students in their studies more than their teacher, 68% of students complained about headaches, backaches, after using computer, 56% students accepted that computer made them regular in their studies and 36% students use computer 3 hours daily.

Table 8. Responses of the Private Girls School Students.

No	Questions	Yes	%	No	%
1	Does your child use a computer with your permission?	32	64%	18	36%
2	Does he use a computer more than three hours?	34	68%	16	32%
3	Do your child ever complain about his health after the use of a computer?	40	80%	10	20%
4	Are results in examination good due to computer?	36	72%	14	28%
5	Do they help you in affairs?	42	84%	08	16%
6	Does your children complaint about headache, backache, stress on eyes after using computer/	40	80%	10	20%
7	Do you find any difference in your child's behavior?	32	64%	18	36%
8	Is this difference is positive?	38	76%	12	28%
9	Does your child use a computer for making school notes?	34	68%	16	32%

Table 9 indicates that 64% of students are permitted by parents for using computers. 68% of students are using computers daily 3 hours, 68% of students complained about health issues after using computers, 72% of students showed good results in their exams, 84% of students expressed that computers help them in home affairs. 80% of students complained about headaches, backaches, etc. 64% of students showed a difference in behavior, 76% of students found a positive difference and 68 % of students use computers for making their notes.

Table 9. Response of the Private Girls School Teachers.

No	Questions	Yes	%	No	%
01	Are you holding a Master degree in computer science?	02	20%	8	80%
02	Are students taking an interest in computer literacy?	10	100%	-	Nil
03	Is a computer better than other A.V aids?	09	90%	1	10%
04	Are you using a computer for A.V aids in your classroom?	01	10%	9	90%
05	Do you find computer users show better results than others?	08	80%	2	20%
06	Do you think that students are regular in the studies?	07	70%	3	30%

07	computer literacy enhances the students understanding?	09	90%	1	10%
08	Is a teacher more helpful than a computer?	10	100%	-	Nil
09	Do you think computer literacy affects personality building?	09	90%	1	10%

The table shows that all the teachers agreed that students show good results who use computers than others but not all teachers have a master degree in Computer Science. Not any teacher clamming to use A.V aids in classroom, but 80% of the students agreed that the computer is better than other A.V aids. 90% of teacher agreed that computer literacy shows influence the personality building.

Discussion

This research was conducted in order to know the importance of computers upon the academic achievement, physical health and social relation of students at secondary level. Findings are drawn from the analysis of the data at the end of each table and given in chapter no.4. In light of those findings, the following conclusions are hereby drawn from student questionnaire and given in the following lines and also by using graphic methods.

Most of the students have computers in their schools. And almost all the students are agreed that computers help in their better knowledge building. Most of the students use a computer in their homes and boys also prefer to go to net-café for using a computer. The majority of school teachers have no master degree in computer science. Most students have a complain about bad health for example an effect on eyes, headache, and stress on backbone after the use of a computer. In more cases, students said that their regularity is enhanced by computer. Boys mostly use a computer on a daily basis and prefer to use a computer and they have more net friends as compare to girls. Some students get help from the net in their studies which shows a better result in their academic records. Most of the students used the net for entertainment either in homes or net café near their homes. Most of the students' claims that a computer is more helpful to them and broadened their vision. Results are drawn from the analysis of the data at the end of each table and given in chapter no. 4. In light of those findings, the following conclusions are hereby drawn from parents' questionnaire and given in the following lines and also by using graphical methods. Most of the children use a computers with the parents' permission but after use computer majority of the students complained about bad health effect that is headache, backache, stress on eyes because children keep in eyes continuously on the computer. Sometimes the children

take help from the computer for making assignments which show the better results in examination. Most of the children perform their duties at home as well by using a computer. Most of the parents found a positive difference in children's behaviors due to computer literacy.

Results are drawn from the analysis of the data at the end of each table and given in chapterno.4. In the light of those findings, following conclusions are hereby drawn from t4eachers questionnaire and given in the following lines and by using graphical methods. Mostly, teachers don't have a master degree in computer science. Most of the students taking keen interest in computer literacy because a computer is better than other A.V aids but unfortunately our government not taking such a great step for school students arrange computer in their computer labs for student use. Most of the computer users found a better result than others which shows that students should keep a balance between their studies and usage of a computer. After the computer class, most of the students show no more interest in the next class while the teacher is more beneficial than a computer. The computer literacy enhances the knowledge of the students and also affect the personality of the students by globalization and ethical awareness. Computers are the wave of the future, but old fashioned learning techniques should not be forgotten. Children need to interact with computers for the schools' studies and assignments as well as for the general knowledge of students. It only supplements and does not replace highly valued childhood activities and materials.

Conclusions

The first and important way to increase the achievements is to become an expert of basic skills and also encourage the students to learn. Computer literacy is the key to achieve this goal. It helps the students to increase their cognitive skills. Various studies show that teachers use a computer as a teaching aid. It was observed that many teachers were holding a master degree in computer science in this way it is expected that in future the quality of education especially of the computer will increase. People blessing with ample opportunities are expected to be more intelligent in basic arithmetic and also basic skills of a computer because they practice these skills by using a computer.

A computer is now the companion of loneliness. It engages the students to improve their typing skills, enhance their vocabulary and the most important thing is the one that they can compete with the world having the best computer skills. In this way, students can utilize their precious time in a better way. it makes the person able to think critically and

analyze too. Students who have the facility to use a computer frequently even at early stages of life they will be able to comprehend the things more clearly and fast. Use of computer in this technological period makes a person to feel proud and confident about his knowledge because a computer is the main working engine in this period of time. It motivates the students to learn more and enhance their abilities, self-esteem and interest level. It is obvious from various studies that computer literacy is most important for the social as well as professional life of the students. In this pure theoretical framework will be ready for the learners. If the aim of all the students about a particular area became the same then green signals will be ready for us to see about the development of the country. The study focused on computer literacy impact on the achievements at secondary school level which prove that computer plays a vital role in the bright academic future of the students.

Recommendations

1. The authorities of a Government school may increase the number of computers in their schools by generating funds through different activities like matches among school, exhibitions and other co-curricular activities. By contacting different NGOs to donate computers for the computer laboratory.

2. It is necessary that students should use the internet under the guidance of a teacher when he is not mature. Teachers as well as literate parents should guide the students about beneficial sites so they cannot visit undesired able sites. Parents should also teach students to surf the internet only for the sake of taking help with the study.

3. Parents should keep a computer in a living room so that children cannot distract from the right path because at this commonplace, the computer will be in check and balance.

4. Parents educate his children for schedule-wise study and usage of a computer that is why most of the computer users found a better result than other which shows that students should keep a balance between their studies and usage of a computer.

5. Parents or teachers should block the immoral and useless software so that the attention of the students may not divert and he can give the deserved time to his study.

6. Parents should give a specific time table to the child how much time he has to spend in using a computer. Hence computer literacy of the parents is also of great importance. The government should hire the teachers having a master degree in computer science in government instructions and must essential in private institutions as well as for a good environment of educations.

7. Most of the students taking a keen interest in computer literacy because a computer is better than other A.V aids so the government must take a great step for schools' students arrange computer in their computer labs for students use.

8. Students keep a balance between their studies and usage of a computer. They should not use a computer in late-night hours because these timings are adversely affecting their studies in the morning at the school.

9. Students should use a computer for educational and purposeful activities like general knowledge, current affairs, checking emails instead of wasting time on chatting and searching useless sites.

10. Parents and teachers should provide the students with suitable chairs so that they can work easily.

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