Computer Education – An Innovative Method To Being Upgraded With Technical Knowledge

Dr. Ashish Vashisath
M.A. Sanskrit, M.A. Education
NET-JRF, PhD,
Former Research Scholar in Rashtriya Sanskrit Sansthan Jaipur Campus
Presently Working in Canara Bank as OL Officer in Panaji Goa

Abstract- *In the continuous tradition of education system, where in the period Upanishad student was situated near the Guru and received knowledge with full mind, while in this modern age with resources with advanced technology and artificial intelligence, education system and teaching methods are very new. The inclusion of dimensions is becoming visible. Fundamental education for various dimensions of education is enumerated as the most important education of this technological era. Computer education is an innovative trend in the education system, through which it is possible to conduct tasks and activities related to every area of human life. Computer education is the procedural dimension that empowers a person by adapting to every expectation of the modern era, as computer is a fundamental component of every field in modern times, whether it education or insurance, banking, industry, service, administration. Whether it agriculture, business, health and medical services etc., there are urgent and compulsory need of knowledge of computer in all fields. In some areas there are need for general knowledge of the computer, in some areas there are need for specific knowledge of the computer. Through computer education, one is able to understand the characteristics of computers in general with various introductory knowledge of computers, which includes knowledge of personal computers, software, hardware etc. Through the general knowledge of computers, one acquires knowledge of running the operating system. In General Knowledge of Computer MS Office, MS. World, MS Excel, Tally, MS Various functions like power-point, internet, web browsing, e-mail etc. are provided. Therefore, now a day, computer education is present as the first condition for the development of one's personality for every person.*

I. COMPUTER - INTRODUCTION & FEATURES

The computer is commonly known as a personal computer. A computer is an electrical device that collects and manages a wide variety of data. Normally a variety of calculations (Computing) was placed this device's name as computer. But today the computer is not limited to mere calculations; it has been able to do many tasks based on various types of information. The work done by the computer depends on the orders/commands given to it. The other most important feature of a computer is the memory capacity of the computer. It is because of memory that the computer is able to collect and store various information, orders and supplies. Hence computer is such an advanced device, which has a wonderful combination of calculator, typewriter, television etc. The efficiency of this instrument created by the human brain has increased so much that it can perform calculations at full speed and accuracy even faster than the human brain. In various types of calculations made by the computer, the probability of error is negligible. Various features of a computer can be understood as follows -

1. The computer performs the work with precision. In order to work with precision, the computer is already tied to a set of fixed commands through various software. By which the computer is able to give complete results.

2. The computer is capable of editing various calculations simultaneously at a very fast speed. Some calculations which are very difficult for humans to count are also counted by the computer in a few seconds.

3. The work performed by the computer is universally accepted. The widespread use of computers in all fields and the tendency to edit multiple commands simultaneously is the main reason for accepting it universally.

4. The computer machine is able to store and secure various orders, information on a very large scale for a very long time. This memory of computer is also more powerful than human memory.

5. High efficiency is a very important feature of a computer machine. That is, a computer is an electrical device that is capable of working for a long time without any disturbance. Even after long-term performance, there is complete accuracy and precision in the work performed by the computer.

Although the above features completely embody the computer machine in the image of the amazing machine. However, there are some limitations of the computer device, which makes it feel like being a machine; otherwise the device starts to be perceived as a replica of the entire human being. Although these limitations of the computer are conquered by the present research and efforts are being made to establish the computer as a human replica at some level, these limitations of the computer are undeniable.

1. Lack of intelligence similar to human knowledge is found in the computer machine. Even after editing various calculations by the computer in a short time, the computer does not have its own intelligence. That's why; there is a lack of intelligence.

2. Computer devices are devoid of sensations. Because there is no sense of self in it, it only works on the orders given. It lacks the qualities of human consciousness, emotion, anxiety etc.

3. The computer machine is unable to decide. That is, computers work only on the basis of a set of specified commands; they themselves are not able to decide on any task or problem.

Due to these above limitations, the computer machine cannot be established as a human replica.

II. VARIETY AND STRUCTURAL DEPARTMENT OF COMPUTER

It is well known that the computer was invented in the early 16th century. From then to the present day, the computer machine has achieved its various specialties. And in the last five decades, the technology of computers has added unprecedented characteristics. Thus from the point of view of development of computer it can be classified into five generations/stages.

1. Thermion values were used in the first generation computer devices and the size of these computer machines was very large. Programming work on these machines was also very difficult. In the first generation computer devices, ENIAC was the first electronic computer in 1946 AD. EDVAC is also a major first-generation computer equipment of 1950 AD. In addition, EDSAC, UNIVAC is also prominent in first generation computers. The first generation computer devices had various deficiencies such as slow working speed, excessive power consumption, need for more space and slow capacity programming systems etc.

2. Small transistors were being used in second-generation computer devices, while vacuum tubes were used in first-generation computer devices. Relatively, the speed of their work was fast and their size was also reduced somewhat. In the second generation computer devices that came in 1955, CPU was incorporated and memory, programming language and input and output devices developed during this period. IBM 1620, IBM 1401, CDC 3600 etc. are prominent among the second generation computer devices.

3. Integrated circuits were being used in third generation computer devices. IC used in these third generation computer devices in 1964 AD. Many types of transistors were mounted on a thin silicon slide. For this reason, due to the small size of various large transistors, the computers of this generation also started coming relatively small. IBM 360, ICL 1900, IBM 370, VAX 750 etc. are prominent among this generation of computer devices.

4. Large scale integrated circuits were being used in fourth generation computer devices. These were built on the LSIC microprocessor. Due to these micro-processors, the size of the CPU became even smaller. Later in 1975, VLSIC was used in place of LSIC in these fourth generation computer devices, due to which the size of the computers of this generation became relatively small and started using personal computers. Personal computers are prominent among fourth generation computer devices.

5. Extremely high speed computer devices continue to develop in fifth generation computer devices. Various researches are being done to use artificial intelligence in the computers of this generation which started in the year 1990. And it is through these successful researches that the size of computer devices is becoming very subtle and their speed is becoming very fast. An example of the development of this generation can be known as the concept of the Internet of Things, which is an advanced computer system that interconnects diverse devices through networks.

In this way, the classification of computer devices can be done from the point of view of development. Also, on the basis of the computability and data processing of computers, the computer devices are classified as digital computers, analog computers, hybrid computers. Digital computers are known as counting devices that operate on discrete data. While unlike digital processors, analog computers cannot compute directly with numbers. They work with Variable

which continuous scale with measure is carried out and the accuracy of the first to record a few degrees known. Analog computers can be accurate to within 0.1 percent of the correct value. Thus there is a difference between analog and digital computer devices. And the computer made by combining the characteristics of these two is called hybrid computer. Hybrid computer devices are widely used in process control systems. Similarly, computer devices are classified as microcomputer, personal computer, minicomputer, mainframe computer and supercomputer on the basis of size. Microcomputer devices are small and general purpose processors. Desktop Computers, Laptops, Notebooks, PDAs etc. are micro computer machines. Personal computer devices are also micro computers that perform general purpose calculations. Mini computer devices work faster than micro computers and are more efficient, as they support 64 or 100 terminals. IBMAS / 400 / B60, VAX 8842, WIPRO LAND MARK 860 etc. are minicomputer equipments. Mainframe computers used for extremely large amounts of calculations and processing of data are much faster and more efficient than minicomputers. Mainframe computer devices are used in areas such as research organizations, large industrial units, large business organizations, governmental organizations, banks, etc. IBM 308, IBM 4300, IBM 3090, HP 9000 etc. are the main mainframe computer devices. Supercomputers are much faster and more efficient than mainframe computer devices. Supercomputers are primarily built to increase FLOPS in large numbers. CRAY-X-MP / 14, X-MP / 24 & X-MP / 48, SX-3R, ETA 10, HITACS-300 etc. are the major supercomputers.

Thus, various types of computer devices can be known. A computer device performs data processing with its function through a variety of tools and programs. There are two main categories of computer systems - hardware and software. All the physical devices that can be touched in a computer device are hardware and those that cannot be touched and are invisibly programming, are called software. Computer systems are divided into three different departments - Arithmetic Logic Unit, Control Unit and Control Processing Unit. Similarly, computer devices also have two types of memory capacity as primary and secondary memory. Input and output devices are used to send and receive information in a computer. Input devices are like keyboard, mouse, light-pen, trek-ball, digital camera, scanner, joystick, micro phone, touch screen, bar code reader, optical character reader, optical mark reader etc. Similarly, monitor, printer, speaker, graphics plotter etc. are output devices. Various storage devices such as floppy disks, hard disks, magnetic tapes, CD- ROMs, punch-cards, paper tapes, recordable compact disc media, etc. are used in computer work.

III. DEVELOPMENT ORDER OF COMPUTER EDUCATION IN INDIA

In this era of science and technology, computer education has become an essential and internal part of every profession and field of work. Nowadays computer programs are visible in every aspect of our life. There is a series of very hard work behind this computer progress and development of today. It is very important to understand the progress and development of computer education in India.

Although it is well known that India was not much advanced in the field of science and technology before attaining independence. Therefore, it would be more accurate to say that the pace of science technology in India was negligible. But after attaining independence, various efforts were started in this direction. Because at the time of independence, India's position on various social dimensions was backward, indicating education, economy, employment etc. It is therefore natural that India needed suitable and necessary time to compete with other nation. Then it was considered that education is the medium through which the immediate situation of India can be changed and this responsibility can be imposed on education and training, by which people can be made skilled and starts such educational revolution. For this reason, the field of education is being made very effective and continuously by the creation and operation of various educational programs. Similarly, the need for educational advancement and development was also felt in the field of computer education and information technology, by which India can be brought to the top line of technologically rich nations. For this, following various efforts have been made in India -

National Institute of Computer Education (NICE) -

NICE it is an institution registered under the Societies Act 1860 as a program for the needs and development of computer education in the national interest, which is supported by the Government of India and the State Governments. NICE Establishment is a very important and necessary step in the field of development of computer education. In every aspect of human life, whether insurance, banking or health, education, administration etc., computer has become a necessity everywhere. In this era of information technology, N.I.C.E. is providing many courses through TCRD and TCGD in order to increase computer literacy. NICE known as a leading institution in the field of computer education and literacy, offers the following diverse courses –

- Diploma in Office Accounting and Publishing,
- Diploma in Computer Applications,

- Diploma in Computer Applications Web Technology,
- Professional accounting business system,
- Professional Course in Desktop Publishing, etc.

Indian Computer Education Society (ICES) -

ICES, established in the year 1990, is another leading institute working in the field of computer education and technical science. The establishment of this institution was a very difficult task during the childhood of computer education of the year 1990; however the need for its establishment was more important. Because computer education was very expensive at that time and due to its access to only limited classes and areas, every person could not get computer education. Hence, tireless efforts were made by the people of this institution, due to which today, various types of courses for computer education are available at a normal fee for all classes and all over India. ICES is providing five types of courses –

- Diploma course
- C-Dac Course
- Certificate course
- I.E.T.E. Course
- University course

All India Computer Literacy Mission -

Among other efforts of the Government of India in the development of computer education, the All India Computer Literacy Mission is the best program, which is registered as an autonomous organization. The Government of India and the State Governments are providing various courses and training to various sections of the society through the All India Computer Literacy Mission. The main objective of the All India Computer Literacy Mission is to fulfill the Government of India's dream of *information technology knowledge for all* and also to fulfill the need of millions of people with information technology skills in India. The following different courses are being provided by this institute -

- Certificate in Microsoft office
- Certificate in DTP
- Advanced CAD / CAM Course
- 3D Designing Course
- CNC operating

Thus, it is clear that the development of computer education is at its peak in India, by which today India's information technology services are getting the top position globally and the demand of Indian information technology experts is increasing progressively all over the world.

IV. NEED AND IMPORTANCE OF COMPUTER EDUCATION

Indian society, which has been locked in the shackles of freedom, has had to undertake several efforts to remove the illiteracy prevalent in the society through various educational programs for its progress and development after attaining independence. Indian society and the general people were extremely backward in the field of technology. Therefore, there has been a great need for the development of computer education for the revival of the society then and for the technological progress of the Indian people. In today's time, India has attained the level of incredible development in the field of technical science. Today computerized work is practiced in every aspect of human life. Without computers, today it seems impossible to perform almost all the functions of human life. Through computer education every person is being made efficient in conducting technical tasks in general. Other importance of computer education can be understood as follows -

1. With the help of computer education, all the work in the field of business can be performed with ease. The computer machine entered the field of business in the year 1934 itself. Currently, many software businesses, accounts etc. are being easily executed. The use of these has intensified the execution of office work. Use of Computer in Business, Hair Book, Laser P. & L. Account, balance sheet etc. is being used for operations. The use of computers has brought in quickness and precision in banking operations. The maintenance of various accounts of the bank has been greatly facilitated through computer. The use of computers has brought immense clarity in the functioning of the stock market. Computers are also being used extensively in the areas of global trade, economy, import-export situation, balance of payments, etc. Therefore, computer education has great importance in the professional field.

2. Computer education has great importance in the field of medical science due to the incomparable and compulsory use of computers. Today computer devices are being used in every field of medical science. That is, the computer is proving to be a boon on all sides, from the manufacture of medicines to the process of treatment through various devices. Today, the most difficult diagnostic treatments are also being done easily through state-of-the-art nanotechnology. Therefore, knowledge of medical

activities through computer education is also empowering the general public.

3. In the present era, due to the complete technical science of communication systems, computer education is very important in the field of communication. Due to the modem system and networking system, various computer devices are interconnected.

4. The use of computer education is happening on a very wide scale in the field of engineering. With the help of computers, manufacturing of samples of various types of equipment, simple and complex processes of machines has become very convenient in the field of engineering. They have fully supported the construction, maintenance and operation of buildings, bridges, dams, railways, airplanes etc. Therefore, the importance of computer education in the field of engineering is well known.

5. In the fields of meteorology and astronomy, computer devices have achieved immense success, by which various types of artificial satellites are transmitted to the space and the information provided by them is obtained through computerized system. And those information is used through computers to influence the various aspects of human life, whether it is weather forecast or communication system, navigation, agricultural system, transport control etc. The use of information has proved the usefulness and importance of computers.

6. With the increasing use of computer equipment, the defense system has been highly upgraded. Practical and wartime transport and strategy are produced by the computers in the field of defense. The diversity of defense sector is being upgraded by various types of technical weapons. The defense system of the nation has become very effective due to the technological advancement of various defense equipment missiles, nuclear ships, war planes, radars etc. With the help of computers, full effectiveness has been achieved in making the warheads hit any target. Therefore, computer education is an important utility for defense science related technical proficiency.

7. Computer devices are used to maintain the traffic system well for waterways, land ways and airways. Due to the computer, the status of transport modes on these various routes is explained.

8. Increasing use of computer in research work has increased the importance of computer education. Computer education has become extremely compulsory for research work being done in all fields of science, geography, economics, psychology, education etc. And due to the precision of the results obtained from them, the reliability of computer is very important.
9. Computers are being used in writing, editing, publishing etc. in the field of entertainment works. Various means of entertainment are being made available through computer games, music, movies etc.

V. CONCLUSION

Through these diverse importances, it is clear that all other diverse fields are being benefited by the use of computer tools in the field of education, which makes the busiest routine of human life highly accessible by elevating the standard of living of each person. The diverse use of computers in the field of education, whether it is imparting education to students through computers or educational administration, educational management, information collection, teaching content creation, evaluation etc., the use of computers in all has made education system so It has been made effective and easy to understand that the general knowledge of computer is attained spontaneously with the study of various subjects. Subsequently, the attainment of computer education through special education of the subject of the computer along with those other subjects increases the technical knowledge-richness, through which the path of progress and prosperity is opened in almost all the areas of human life. Therefore, this innovative trend of computer education in the field of education has led to the advancement of Indian society towards educational upgrading, to ensure the technological prosperity of Indian society, as well as in all other areas, has proved to be a milestone in the path of progress and development.

REFERENCES

[1] Basu, M.K. (1981). “Effectiveness of Multimedia Programmed Materials in the Teaching ofPhysics,” Ph.D. Education, Kal. University.
[2] Chauhan, S.S. (1978). A Textbook of Programmed Instruction. New Delhi Sterling Pub. Pvt. Ltd.
[3] Dahiya S. Surender (2004). Educational Technology: Towards Better Teacher Performance, New Delhi: Shipra Publications.
[4] Gagne, R.M. (1968). Educational Technology as Technique. ET, VIII, 1, pp.5-7.
[5] Hannafin, R.D., and Savenye, S. (1993). “Technology in the Classroom: The Teacher’s New Role and Resistance to it,” Educational Technology, Vol. 33, No. 6, pp. 26-31.

[6] Kohli, Madhvi (2005). "Efficacy of Computer Assisted, Concept Attainment Models on Students' Achievement in Environmental Science, Self-Concept and Emotional Intelligence", Ph.D. (Edu.), University ofRajasthan
[7] Kumar, A. (1998). "Study of the Relative Effectiveness of Three Methods of Instruction - Exposition Method, Programmed Learning Method, and Multimedia Method in Science", PhD. Education, Kurukshetra University Kurukshetra.
[8] Mehra, V. (1995). Educational Technology. New Delhi: S.S. Publishers.
[9] Mehra, V. (1992). Instructional Systems Design-An Innovation in Educational Technology. New Delhi: S.S. Publishers.
[10] Sharma, R.A. (1987). Technology of Teaching, Meerut: International Publishing House.