COMPUTER EDUCATION AND MANPOWER DEVELOPMENT

Miss Okeke, Francisco Nonyelum

Abstract

Computer have, over the years, gained wider acceptance as an educational tool. Today, computers are used not only for learning about computer but are used to aid in teaching other subjects as well; and so have proven to be an extremely effective teaching too). Computer-based training (or CBT) is one of the more popular ways of using the computer in education. Applications of this technology range from teaching six year old students basic math skills to providing in-depth instruction on sophisticated computer programming languages. Computer-assisted instruction (CAI), an electronic dedicated learning machine is used for teaching by drilling and so students learn at their own pace and get instant feedback. The ultimate in the use of computers in education is referred to as multimedia, which essentially combines text, audio and video, and graphics in creating an integrated educational system, In computer manpower development, there is an observed increase rate as computers are playing an ever-increasing role in the society and the impact is seen and felt in almost every job, directly or indirectly. The major categories of computer-related careers producing professionals in different aspects are computer development and retailing; system development and programming; computer operations; technical support services; management and administration.

Introduction

Computer is a general-purpose electronic machine with applications limited only by the creativity of the people who use it; its power is derived from its speed, accuracy, and memory. It can also be regarded as an electronic device/machine that accepts and processes data displaying the resultant information at an amazing speed. It comprises of the hardware and the software. The former is the physical components that make up a computer system while the latter is the program(s) used to direct the computer in solving problems and overseeing operations.

The knowledge of any of these components is known as the training/education of computer. Computers are changing our lives and no longer are computer experts the only people who interact with computers on a daily basis; as it has affected our lives directly/indirectly; for example, you can get cash after the bank is closed using the computer-based automatic teller machine (ATM), a scanner reads the coded price tags of purchases made at the store to speed up shopping; daily newspapers are transmitted via satellite to a printing facility thousands of mile away where it is printed using computer controlled printing presses; computer-aided design system used in creating an animated, visual "walk" through a proposed building in order to provide a client with picture of its future interior; in hospitals to diagnose patient's illness and treatment, and in educational aspects for training.

Computers had made it possible for adult learners etc; to be able to obtain their degrees through the rise of distance learning - online education programs. College students also like it because they don't have to spend time commuting, the scheduling is flexible, and they often have a greater selection of course offerings. Although for some instructors, an online class is more labour intensive than a regular chalk-and-talk class, they often find there is better interaction with students.

The progress made in computer education especially on the internet training/website training is seen in video conferencing, also called teleconferencing, which is the use of television video and sound technology as well as computers to enable people in different locations to see, hear, talk and learn with one another. The video conferencing equipment is set up on the desk with a camera and microphone to capture the person speaking and a monitor and speakers for the person being spoken to. The video phone is a telephone with a TV - like screen and a built-in camera that allows you to see the person you're calling, and vice versa.

Some computer people think that the possession of web access makes the need for libraries unnecessary; although what is in a library is standardized and well organized, whereas what's on the

web is often over- whelming, unstandardized chaotic. An intelligent agent program performs the work tasks such as roaming networks and compiling data on the user's behalf, and so the intelligent agent is used to solve the problem.

With their potential for finding and processing information, computers are pervasive on campus. More than a third of college courses require the use of e-mail, and many have their own dedicated web pages. College students spend an average of 5.6 hours a week on the Internet.

Most students have been exposed to computers since lower grades. The percentage of elementary schools with Internet access in 2000 was so low and unnoticed while secondary schools have 50% or less. The results have not always been productive, especially in elementary schools. Colleges and other higher educational institutions rates high as the need for research, training etc, tend to increase among the students and teachers. Private schools move up higher as in the rate of computer training and usage than public schools.

Only one-third of teachers were ready and prepared as of 1999 to use computers and the Internet for classroom instruction. However, when used selectively by trained teachers in schools, according to research, computers can significantly enhance performance in maths learning. In art classes, computers can be used to encourage creativity without mess, as students learn to make art digitally. Students exposed to the Internet in high school/college are seen to regard the web as a half tool in improving the quality of their academic research and written work. There is even software such as Internet Essay Assessor and E-Rater that grades essays.

One revolution in education-before, during, and after the college years - is the advent of distance learning, or "cyberclasses" along with the explosion of Internet resources.

Education and Employees of the Future

Some futurists believe that one day almost every type of job will require employees to use computers. Education will certainly change through computer usage and access to databases. Most transactions will take place via computers and telecommunications. People with little computer experience will be profoundly affected. They will not be able to access a data base, read the material on the screen, or hold a job that requires a great deal of computer use. Therefore, some educators are pressing for extensive computer education in schools.

Computer education includes computer literacy and computer programming. Computer literacy courses teach technical knowledge about computers, the ability to use computers in solving problems, and awareness of how computers affect society; while programming classes often involve learning to program a computer in popular programming language.

On the other hand, other researchers believe that computer education, as a prerequisite for jobs is largely a myth. They said that only a small percentage of jobs would require actual knowledge of technical areas involving electronic circuits, computer programming, and hardware. Rather, they believe that reading and thinking skills and general knowledge will distinguish the haves from the have-nots. If computers are to be used, they must become tools for learning these skills.

Educators group software packages meant for teaching into an all-encompassing category: Computer-assisted instruction (CAI). Through CAI, students encounter a patient "teacher" that allows them to learn at their own rates, receive immediate feedback, and feel comfortable with both successes and mistakes. Included in CAI is a selection of software:

Drills for quizzing the student;
- Tutorials for introducing students to new material and skill and quizzing them on their understanding of the material;
- Simulations that imitate real-world situations, allowing students to learn through experience and induction without having to take actual risks;
- Games for learning new concepts and practicing new stills;
- Problem-solving software that encourage exploration and application for previous knowledge;
Multimedia experience and productions.

The trend towards accountability in measuring how much a student learns may make the drills and tutorial attractive to teachers. But more than this, educators increasingly realize the importance of computer use in developing thinking skills. Regardless of which computer skills are learnt, people are realizing the many ways in which computers can help them learn, conduct business, take care of their

health and achieve competency at work. Although not everyone may learn how to write a computer program or how a computer works, most people can learn to use computers in meeting challenges of the future and enriching their lives.

Computer Manpower Development

Today a great organization, libraries, government agencies and educational institutions are using

computers to help organize and store information. This has created the demand for a large class of professionals who can design and operate effective computer systems.

There are many computer - related careers: -

i. Computer Development and Retailing

The development personnel design and produce computers while retailers market and sell the product to users. Both categories are hardware - related. They are made up of computer engineers with college degrees in computer science, electrical, mechanical and electronic engineering.

ii. System Development and Programming

Systems development personnel decide how the computer can do required tasks while the programmers write the instructions that computer uses. They are made up of college graduates with a focus on information systems and degree holders in computer science.

iii. Computer Operations

Operations personnel run the computer, making sure the necessary files and supplies are ready when needed. Personnel should possess a high school diploma and trained by staff of the college or school.

iv. Technical Support Services

Here, it comprises of training personnel, technical writers, computer consultants, computer technicians, security specialists, EDP auditors and instructors, with a degree in computer.

v. Management and Administration

This comprises managers such as management information system (MIS) manager that controls the physical and human resources of the department so that the company's goals are met and administrators such as database administrator that designs an accurate and complete database-should possess a college degree.

Factors influencing the supply and demand of computer manpower are analyzed in the context of available data on scientific manpower including statistics on degrees awarded in various disciplines at the Bachelor's, Master's, and Ph.D levels, faculty mobility, job mobility among professionals, starting salary trends, comparative unemployment statistics and economic projections. It was found that there was limited computer manpower before 1980s, which was not expected to persist for the foreseeable future, as there was increased provision of trained people from early 1990s.

There was shortage of computer professionals due to some factors such as: i.   The uncertainty of tenure, a problem unique to academic institutions, which creates a feeling

of job insecurity and frustration among the young who are starting academic careers, ii.

"Institutional disincentives, cited often were the difficulty and hassle associated with getting

travel funds for professional conferences or other types of support for leading normal professional lives, heavy teaching loads because of the great influx of students into computer course and inadequate support of research, especially research in computer software or hardware systems.

Few university administrators have experience with that kind of research, which requires a high degree of support for facilities, time, and effort but is slow in yielding papers, which can be published in the normal scientific literature. Educational institutions have difficulty evaluating such work and this influences allocations of scarce research funds or consideration of promotion making young computer researchers perceive industry as more hospitable and rewarding for that kind of research. This equally is seen by the ratio of graduate degrees in computer education to other disciplines as students are not entering graduate school for higher degree even the ones that entered stop in masters program, which they do more as part-time than full-time.

AH these have been noted to change since early 1990s when the importance of computer education and increased development in manpower was looked into.

The statistics of the computer professionals of different aspects of computer careers have grown so much that it is rated to be up to 75%. The other disciplines now change to computer studies or computer related course/programme during their masters and doctorate programme, thereby increasing the computer manpower.

The development of computer education and manpower cannot be overemphasized. Colleges, higher institutions and secondary schools now undergo computer course training as its necessity is without question. Teachers are much more interested as they equally have seen the challenges computer have brought to everyone's doorstep.

Recommendations

As manpower development gears towards progress and development of a nation, computer education is one of the essential tools for both computer education acquisition and efficient development in manpower aspect.

The following recommendations can help in computer education and manpower development:

i. All levels of education should be made to see the benefits of training or educating students through the use of computers. In other words, computer literacy programs should be organized and encouraged,

ii. Programs such as seminars, workshop, and career talks can be done once in a while to create awareness of the use and importance of computer education,

iii. Organizations and establishments should organize employee-training hours for better productivity by utilizing computers and even start with offering employment to computer literate individuals to make others seek for the computer knowledge,

iv. Government should equally train interested individuals for manpower improvement in the areas of computer education.

v. School administrators should encourage interested individuals by sending them to seminars, workshops, and courses within the country and abroad for expertise knowledge in computer education and all aspect of computer usage and utilization.

Conclusion

Computer as an electronic tool has come to stay. The impact/social implications which people were against — job insecurity, crime, dehumanization, loss of privacy etc, made the progress of computer limited but since the knowledge of its importance and usage, people now have the interest and enthusiasm to move into it. The development of the computer manpower has equally shown advanced progress. There is no career or job that does not directly or indirectly need computer literacy. The professionals to educate interested academicians are now at our reach.

School administrators should look into the problems of computer education in their level of knowledge and help the computer professionals in their work by providing the needed resources for their job. The use of Internet access and its resources can equally be utilized where there is limited manpower.

References

Brian, K. Williams and Stacey C. Sawyer. (2003). *Using Information Technology. A Practical Introduction to Computer and Communications.* Complete Version. (5[1] ed.). America: McGraw-Hill Higher Education.

John, W. Hamblen and Carolyn P. Landis. (1980). *The Fourth Inventory of Computers in Higher Education: An Interpretive Sport.* EDUCOM series in Computing and Telecommunication in Higher Education.

Kent, K. Curtis. (2003). Computer Manpower - Is there a Crisis? Paper Presented at National Science Foundation. Washington, D.C. 20550, from http://www.sigcse.org/papers/curtis83/

Okeke, Francisca Nonyelum. (2002). *Introduction to Computer & BASIC Programming.* (39, 52, 56). Onitsha. Nigeria. Noble Publishers.

Steven, L. Mandell. (1992). *Computers and Information Processing -Concept and Applications.* (20) (6th ed.) New York: West Publishing Company.