COURSE GUIDE

KHE 339
COMPUTER IN HUMAN KINETICS

Course Team Dr. Tajudeen Olanrewaju Ibraheem (Course Writer/Developer) - University of Ilorin
Prof. Nebath Tanglang(Content Editor)
Dr. Juliet Inegbedion, Dr. Lukuman Bello & Mr. Opeyemi Dahunsi (Instructional Designers) - NOUN
Mr. Chukwuemeka Nwosu (Copy Editor) - NOUN

NATIONAL OPEN UNIVERSITY OF NIGERIA

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National Open University of Nigeria
Headquarters
University Village
Plot 91, Cadastral Zone
Nnamdi Azikiwe Expressway
Jabi, Abuja

Lagos Office
14/16 Ahmadu Bello Way
Victoria Island, Lagos

e-mail: centralinfo@nou.edu.ng
URL: www.nou.edu.ng

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INTRODUCTION

Considering technological advancements and the utilization of computers as a device in various fields of education, it becomes essential for human kinetics educators to key into the use of computers to enhance the teaching and learning process. The application and use of the computer in this field is an essential and integral aspect that cannot be overemphasised.

As it is essential to other fields and works of life, the understanding of best practices in the use of computer and information technology to enhance the educational process and the appropriate use of these systems to facilitate the development of athletes and information management which involves gathering and utilisation is also essential. This course tends to introduce to potential Human kinetics educators a basis of understanding the concept of computers as a tool towards their development and as an assistant in carrying out their duties as educators.

COURSE COMPETENCIES

This course aims at providing you with relevant historical information on the concept of Computers as it relates to Human Kinetics and further teaches ways of incorporating the use of computers in the teaching and learning of other concepts related to the field of study

COURSE OBJECTIVES

By the end of this course, you will be able to:

i. Narrate the historical background of computers
ii. Link the use of computers to Human Kinetics Education and Physical Education
iii. State the benefits of computer and technology to human Kinetics
iv. State ways of integrating computer technology to Human Kinetics.
v. Relate between traditional human kinetics means of doing things and the use of computers.

WORKING THROUGH THIS COURSE

You need to read this course material, each unit with good understanding, as well as to be able to state the objects of the course content.
You should be able to execute the self-assessment exercises in each of the units very correctly. This course material also provides you with references to relevant texts and links that can enhance your understanding of the units in the modules

STUDY UNITS

There are 14 study units in this course divided into three modules. The modules and units are presented as follows:

Module 1

Unit 1	Introduction to Computers
Unit 2	Advantages of Computer
Unit 3	Disadvantages of Computer
Unit 4	Anatomy of Computer
Unit 5	Anatomy of Computer (Cont.)
Unit 6	Memory of Computer

Module 2

Unit 1	Introduction to Human Kinetics
Unit 2	The Use of Computer in Human Kinetics Education
Unit 3	Introduction to Human Kinetics (Cont.)
Unit 4	The Application of Computer in Human Kinetics Education

Module 3

Unit 1	Concept of Health Education
Unit 2	Aims, Objectives and Importance of Health Education
Unit 3	Application of Computer to the Teaching and Learning of Health Education
Unit 4	Application of Computer to the Teaching and Learning of Health Education (Cont.)

REFERENCES AND FURTHER READINGS

PRESENTATION SCHEDULE

Your course materials have important dates for the early and timely completion and submission of your TMAs and attending tutorials. You should remember that you are required to submit all your assignments by the stipulated time and date. You should guard against falling behind in your work.

ASSESSMENT

There are three components of assessment for this course: Self Assessment Exercises and assignments at the end of each study Unit, the Tutor-Marked Assignments; and a written examination. In doing these

assignments, you are expected to use the information gathered during your study of the course.

HOW TO GET THE MOST FROM THE COURSE

This course material provides you the opportunity of reading and learning at your own pace; time and location. To get the best of experience, you will need to work with the material in the following logical order:

1. Read each Unit step by step as arranged.
2. As you read the material for each Unit, note the key points in each Unit.
3. Refer to the links and text provided.
4. After reading, attempt the assessment exercise given at each step.
5. You should obey all the rules and guiding instructions.

FACILITATION

Online facilitation would be made available to provide you with the opportunity to interact with your tutor and your colleagues across the world

COURSE INFORMATION

Course Code: KHE 339
Course Title: Computer Use in Human Kinetics
Credit Unit: 2
Course Status: Elective
Course Blub:
Semester:
Course Duration:
Required Hours for Study

COURSE TEAM

Course Developer:
Course Writer: Dr. Tajudeen Olanrewaju Ibraheem
Content Editor: Prof. Nebath Tanglang
Instructional Designers: Dr. Juliet Inegbedion, Dr. Lukuman Bello, Mr. Opeyemi Dahunsi
Copy Editor: Mr. Chukwuemeka Nwosu

MAIN COURSE

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MODULE 1 MODULE INTRODUCTION

A computer is an electronic device that stores, retrieves and processes data into information. A computer serves the purpose of interpreting raw facts through programmed instructions. A computer exists in various sizes and configurations based on the quality of its hardware and software.

UNIT 1 INTRODUCTION TO COMPUTER

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1.0 Introduction
2.0 Intended Learning Outcomes (ILOs)
3.0 Main Content
    3.1 Meaning of computer
    3.2 History of Computer
    3.3 Generations of computers
    3.4 Types of computers
    3.5 Forms of computer
    3.6 Functions of computer
4.0 Conclusion
5.0 Summary
6.0 Tutor- Marked Assignment
7.0 References/Further Reading

1.0 INTRODUCTION

A Computer is an electronic device that receives data and instructions from the input device, processes the data based on the instructions given to it and produces a result which is called the output in the desired form. The computer performs various activities ranging from statistical analysis, Mathematical expressions, Logical and graphical manipulations. The term computer is however used to describe a collection of devices that function together as a system that can be utilised to fulfil the aforementioned functions as and when due.

2.0 INTENDED LEARNING OUTCOMES (ILOS)

By the end of this unit, you will be able to:

- define a computer
- give a brief history of Computer development by generation
- give a tabular description of computer generation.

3.0 MAIN CONTENT

3.1 MEANING OF COMPUTER

A Computer is an electronic device that receives data and instructions from the input device, processes the data based on the instructions given to it and produces a result which is called the output in the desired form. The computer performs various activities ranging from statistical analysis, Mathematical expressions, Logical and graphical manipulations. The term computer is however used to describe a collection of devices that function together as a system that can be utilised to fulfil the aforementioned functions as and when due.

A computer is an electronic system that can be instructed to accept, process, store, and present data and information. It is made up of two components: hardware and software.

- ***Hardware:*** The computer and its associated equipment.
- ***Software:*** The general term for a set of instructions that controls a computer or a communications network.
- ***Program:*** A set of instructions that directs a computer to perform certain tasks and produce certain results.
- ***System:*** A set of components that interact to accomplish a purpose.
- ***Data:*** Raw facts, figures, and details.
- ***Information:*** An organised, meaningful, and useful interpretation of data.
- ***Knowledge****:* An awareness and understanding of a set of information and how that information can be put to the best use.
- ***Information System:*** A business information system designed to produce the information needed for successful management of a structured problem, process, department, or business.

Computers come in four sizes:

- Microcomputers
- Midrange computers
- Mainframes
- Supercomputers

Microcomputers: A relatively compact type of computer, the most common of all, easily outsells all other types of computers annually for use in schools, businesses and at homes. There are five types of Microcomputers:

– Desktop Computers:
– Tower Systems
– Laptop Computer
– Notebook Computer
– Palmtop computers

***Desktop Computers*:** These are the type of microcomputers whose monitor is placed on top of the system's unit.

***Tower Systems**:* These are the type of microcomputers whose systems unit sits beside the computer monitor

Figure 1.3: A tower system
Source: (Google Images, 2009)

Laptop Computer: This describes the type of microcomputers whose miniature size makes it possible for a user to place on top of his/her lap for usage.

Figure

A Laptop computer
Source: (Google Images, 2009)

Notebook Computer: This describes the type of microcomputers whose size can be compared to that of a notebook.

***Palmtop computers*:** This describes the type of microcomputers a user can place on top of his palms for usage, and can as well easily carry it around. It's also called Personal Digital Assistant (PDA).

3.2 History of the Computer

The computer as we know it today had its beginning with a 19th century English mathematics professor named Charles Babbage. He designed the Analytical Engine and it was this design that the basic framework of the computers of today are based on. Generally speaking, computers can be

classified into three generations. Each generation lasted for a certain period, and each gave us either a new and improved computer or an improvement to the existing computer.

3.3 Generations of Computer

First generation: 1937 – 1946 - In 1937 the first electronic digital computer was built by Dr. John V. Atanasoff and Clifford Berry. It was called the Atanasoff-Berry Computer (ABC). In 1943 an electronic computer name the Colossus was built for the military. Other developments continued until 1946 the first general-purpose digital computer, the Electronic Numerical Integrator and Computer (ENIAC) were built. It is said that this computer weighed 30 tons, and had 18,000 vacuum tubes that were used for processing. When this computer was turned on for the first time lights dim in sections of Philadelphia. Computers of this generation could only perform a single task, and they had no operating system.

Second generation: 1947 – 1962 - This generation of computers used transistors instead of vacuum tubes which were more reliable. In 1951 the first computer for commercial use was introduced to the public; the Universal Automatic Computer (UNIVAC 1). In 1953 the International Business Machine (IBM) 650 and 700 series computers made their mark in the computer world. During this generation of computers over 100 computer programming languages were developed, computers had memory and operating systems. Storage media such as tape and disk were in use also were printers for output.

Third generation: 1963 - present - The invention of the integrated circuits brought us the third generation of computers. With this invention computers became smaller, more powerful more reliable and they can run many different programs at the same time. In1980 Microsoft Disk Operating System (MS-Dos) was born and in 1981 IBM introduced the personal computer (PC) for home and office use. Three years later Apple gave us the Macintosh computer with its icon-driven interface and the 90s gave us Windows operating system.

As a result of the various improvements to the development of the computer, we have seen the computer being used in all areas of life. It is a very useful tool that will continue to experience new development as time passes.

3.4 Tabular description of Computers generations

SN	Generation	Component used
1	First Generation (1946-1954)	Vacuum tubes
2	Second Generation (1955-1965)	Transistors
3	Third Generation (1968-1975)	Integrated Circuits (IC)
4	Fourth Generation (1976-1980)	Very Large Scale Integrated Circuits(VLSI)
5	Fifth Generation (1980 – till today)	Ultra Scale Integrated Circuits (ULSI) Micro Processor (SILICON CHIP)

3.5 Forms of Computer

Mainframe Computer

It is a high capacity and costly computer. A mainframe computer is a computer used primarily by large organisations for critical applications like bulk data processing for tasks such as censuses, industry and consumer statistics, enterprise resource planning, and large-scale transaction processing. A mainframe computer is large but not as large as a supercomputer and has more processing power than some other classes of computers, such as minicomputers, servers, workstations, and personal computers. Most large-scale computer-system architectures were established in the 1960s, but they continue to evolve.

Super Computer

This category of computer is the fastest and also very expensive. A typical supercomputer can solve up to ten trillion individual calculations per second.

Workstation Computer

The computer in this category is a high-end and expensive one. It is exclusively made for complex work purposes.

Personal Computer (PC)

It is a low-capacity computer developed for single users. Examples of a personal computer include: Apple Macintosh (it is a sort of personal computer manufactured by Apple company); Laptop computer (it is a handy computer that can be easily carried anywhere); and Tablet and Smartphone (this is an advanced further modern technology developed in a more pocket-friendly way).

SELF-ASSESSMENT EXERCISE

i. Define computer
ii. List 3 generations of computer
iii. List 3 forms of computer

4.0 CONCLUSION

After having completed reading through this unit and referring links and text provided, it is assumed that you have learned and acquired the definition of a computer as an electronic device that stores, retrieves and process data into information; the history of computer as it began in 19th

century through the English mathematics professor named Charles Babbage; computers can be classified into three generations and each generation lasted for a certain period; there different forms of a computer ranging from mainframe computer, supercomputer, workstation computer and personal computer; advantages and disadvantages of computer. The questions you answered satisfactorily will indicate to you the amount of learning you have achieved in the unit. You are encouraged to pay attention to details as indicated in this unit.

5.0 SUMMARY

In this unit, the meaning of computer, history or generations of computer, forms of computer, advantages and limitations of computers have been extensively discussed.

60 TUTOR-MARKED ASSIGNMENT

1. History of the computer dates back to —.
2. There are ____generations of computer.
3. There are ____forms of computer.

7.0 REFERENCES/FURTHER READING

https://www.tutorialspoint.com/basics_of_computer_science/basics_of_ computer_science_types.htm

https://digitalworld839.com/advantages-and-disadvantages-of-computer/http://

track.isport.com/track-guides/track-field-rules-regulations

https://digitalworld839.com/advantages-and-disadvantages-of-computer/

https://en.wikipedia.org/wiki/Mainframe_computer.Accessed 05/10/2021.

UNIT 2 ADVANTAGES OF COMPUTER

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1.0 Introduction
2.0 Intended Learning Outcomes (ILOs)
3.0 Main Content
    3.1 General benefits of Computer
    3.2 General disadvantages of computer
4.0 Conclusion
5.0 Summary
6.0 Tutor-Marked Assignment
7.0 References/Further Reading

1.0 INTRODUCTION

A computer can accept input, process or store data, and produce output according to a set of instructions that are fed into it. A computer system can be divided into two components which are responsible for providing the mechanisms to input and output data, to manipulate and process data, and to electronically control the various input, output, and their storage. They are known as hardware and software. The hardware is the tangible part of the computer. Whereas, the software is the intangible set of instructions that control the hardware and make it perform specific tasks. Without software, a computer is effectively useless.

2.0 INTENDED LEARNING OUTCOMES (ILOS)

By the end of this unit, you will be able to:

- discuss the advantages of computers
- discuss the limitations or disadvantages of computer.

3.0 MAIN CONTENT

3.1 Advantages of Computer:

High speed in work

A computer is a high-speed electronic machine. It operates and processes many complex calculations and commands in microseconds or even in nanoseconds with incredible speed. Today's computers are no more up to a calculating device as a few years back was. Today's generation of computers can understand and process lots of instructions in just the blink of an eye which takes significant time for humans. The computer is used

to complete the task efficiently, diligence, and total accuracy for our daily work. It saves a lot of time, energy, and overall cost to complete a specific task.

Mass Knowledge

The Internet has unlimited knowledge and information about every field, and such plenty of data we can use for our studies and project by sitting in one place. It is worth typing and searching for the needed topic in the search query to get the desired information. At present, to solve problems, projects, research, homework, assignments and practical sessions. Whether you are a student, manager, businessman, or employee, it is sufficient to use the internet, which is rich in various dictionaries, encyclopedias, and scientific research.

The computer allows you to get information in video format on the computer screen that is not found in any documents and books. Such information with broad education provides opportunities for everyone in all areas. A computer with an internet connection is an opportunity to access the latest news in almost every field. With the help of the computer, anyone can find and learn all the information from all parts of the world that are not physically accessible.

Storage Capability

Computer memory has much more capacity than humans. We cannot store audio, video, image, text, etc., in our memory beyond some limit, but this data can be stored inside the computer as per our needs at any time. As you know, it is easier to search for any query on the Internet. We can also store all the important notes and media on our computer, which will save our time from visiting libraries and searching for information in books and magazines. Many business companies take advantage of the storage capacity of computers to maintain their customers' accounts. Similarly, many companies like banks also use to store records and manage financial exchanges. By these, customers can check all the forms of their accounts using the internet.

Communication

The computer with the internet helps you express your views and effortlessly in public without any problems through famous communication platforms. People from all over the country gather online daily, who are united by one goal **(**joint gossip and mutual help**)**. Communication is easy via the internet even when you are shy, modest, or a little introverted. In addition, it becomes a platform for communication with their peers. Children, teenagers, or even grown

people are happy to share their photos, films, or video clips on social networking sites. Through the use of computer, everyone talks to each other and becomes the kind of place where we feel the community. Online services available on computers like 'Skype' or 'Zoom' sites are used to communicate with colleagues, friends, family, and relatives quickly via video call. Communicating devices like Wi-Fi and the internet help you establish communication with each other.

Online Earning

The computer produces a large number of money-making opportunities and jobs every year. Any person with unique skills, expertise, and talents can earn money online through the computer by serving and teaching people. Another advantage of the computer with the internet's help assists one to work at home without leaving your home or apartment. It is very convenient to work this way because such people do not need to be dependent; they choose their schedule, job, and work as per their need and choice.

For the last few years of digital technology, the need for computer professionals has reached a different level; every business and organisation needs computer experts, professionals in their workplace. This made it easier to work to a great extent. Digital business and marketing, Scientific and innovative research are carried out with the help of a computer across the world; the digital industry is developing many opportunities for computer-based jobs.

Saves Time and Money

Almost everyone wants to save their time and money as you in today's era because everyone wants to do some other fun, enjoy, creative work or spend time with their family. As you know, a computer is faster than humans, which saves a lot of time for us. Calculation of expenses of your home can easily make with a computer calculator rather than spending time on analysis physically. You can use a computer to save money on TV if you are the busiest person and need to save money. You can also watch all the entertaining shows like cartoons, feature films, and television films, listen to music on your computer. It can be online or through using an internet or USB cable.

4.0 CONCLUSION

After having completed reading through this unit and referring to links and text provided, it is assumed that you have learned and acquired knowledge about advantages and disadvantages of computers. If a computer is used based on the instruction given, there are numerous benefits that the user could gain from using it. The following are the advantages of computer as discussed earlier: computer widens the knowledge of the user; it serves as a means of generating money, it saves time and it increases productivity. Many users abuse the use of computer and this could bring about the following disadvantages of using computer: it increases unemployment rate; it leads to many health challenges and laziness. The questions you answered satisfactorily will indicate to you the amount of learning you have achieved in the unit. You are encouraged to pay attention to details as indicated in this unit.

5.0 SUMMARY

In this unit, the advantages and disadvantages of computers have been extensively discussed.

6.0 TUTOR-MARKED ASSIGNMENT

List 5 advantages of the computer.

7.0 REFERENCES/FURTHER READING

https://www.tutorialspoint.com/basics_of_computer_science/basics_of_computer_science_types.htm

https://digitalworld839.com/advantages-and-disadvantages-of-computer/http://

track.isport.com/track-guides/track-field-rules-regulations

UNIT 3 DISADVANTAGES OF COMPUTER

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1.0 Introduction
2.0 Intended Learning Outcome (ILO)
3.0 Main Content
    3.1 Limitations of Computer
4.0 Conclusion
5.0 Summary
6.0 Tutor-Marked Assignment
7.0 References/Further Reading

1.0 INTRODUCTION

A computer can accept input, process or store data, and produce output according to a set of instructions that are fed into it. A computer system can be divided into two components which are responsible for providing the mechanisms to input and output data, to manipulate and process data, and to electronically control the various input, output, and their storage. They are known as hardware and software. The hardware is the tangible part of the computer. Whereas, the software is the intangible set of instructions that control the hardware and make it perform specific tasks. Without software, a computer is effectively useless.

2.0 INTENDED LEARNING OUTCOME (ILO)

By the end of this unit, you will be able to

- discuss the limitations or disadvantages of Computer.

3.0 MAIN CONTENT

3.1 Limitations of Computer

Time Consuming

Much time will be wasted in front of the computer if a person starts watching videos and playing games without stopping. One should know the harmful effects of spending too much time on the computer. One should always use a computer to acquire knowledge with a short time for entertainment to ensure not making a habit that causes us to spend our precious time. Sitting in front of a computer for too long can forget their essential work and responsibility towards others. It also affects our social skills like communication.

Lack of Intelligence

The Computer does not have intelligence as much as humans have. Computers cannot make decisions on their own at certain times which sometimes makes our work slow, only after giving the proper and correct instructions. If computers get wrong or improper instructions, then the result will be wrong. A computer is an electronic device that does not have any feelings and emotions towards humans. The logical mind of a computer is not able to determine right or wrong things. Therefore, even after having the feature of autonomous. It cannot do any work independently and depends on humans for instructions to do anything.

Eyes Vision

People continue to use computers throughout the day, especially those who have a dependent job on the computer and the internet. Such continuity can lead to health problems such as poor eyesight, low energy, obesity in the body, and other diseases. Viewing the monitor screen of a computer all day weakens the eyes' vision and hurts the backbone. So if you are working in a job that depends on a computer, you should have to take remedial measures to take care of your eyes. For instance, whenever you use the computer, make sure that you take a break of 10 to 15 minutes at an interval of an hour and stay away from the computer for some time. Such a rest will help protect your vision.

Addiction

People with highly addicted computers can affect their sleep at night, or even afternoon can adversely affect their mind and health. Therefore, one must always know the limitations of computer use; otherwise, nothing good will come. By spending lots of time doing useless things, one can lose his precious time and spoil his health. It is better to study or at work instead of spending spare time on computer entertainment. Many children from early childhood get used to the computer, they like watching cartoons, funny programs, playing computer games. It is necessary to take care of them by not making a habit of it.

Cyber Security Problems

The threat of many data hacking on the computer is always hovering. Viruses, malware, stealing personal data, stealing passwords, stealing payment details, etc., can be done through cyber attacks. Hackers can do anything with our personal or social data stored in the computers if it gets under control in their hands. They can delete or damage the data or even misuse it for any illegal purposes. Hackers can break the security of your system and gain unauthorised access to our computer system, which can

harm people financially like stealing details of people's credit cards and bank accounts, or even socially like leaking of sensitive data from significant associations.

The things with a computer can reduce the possibility of hacking and virus attacks, such as following computer security measures and antivirus software. Antiviruses are a type of computer program that has been developed to prevent computers against hackers from stealing passwords, PINs, and other sensitive information, with their primary goal being. One should be used to keep their data safe, data security is a major concern as many companies provide security services against computer viruses and cyber-attacks.

Health Problems

If you always spend time sitting in the same position in front of the computer screen or for a long time, it hardens your muscles to begin to hurt, leading to obesity. Such a position does not allow a good circulation of blood throughout your body. That will be a harmful effect on your body. To avoid such troubles, you need to find time for regular training of at least an hour a day. Or you can start a couple of hours walking in a day, and such activity helps you avoid such health problems. You also need to purchase a regular comfortable chair if you can afford to work at a computer; otherwise, you can seriously spoil your posture.

4.0 CONCLUSION

After having completed reading through this unit and referring links and text provided, it is assumed that you have learned and acquired knowledge about the advantages and disadvantages of computers. If the computer is used based on the instruction given, there are numerous benefits that the user could gain from using it. The following are the advantages of a computer as discussed earlier: computer widens the knowledge of the user; it serves as a means of generating money, it saves time and it increases productivity. Many users abuse the use of computers and this could bring about the following disadvantages of using the computer: it increases the unemployment rate; it leads to many health challenges and laziness. The questions you answered satisfactorily will indicate to you the amount of learning you have achieved in the unit. You are encouraged to pay attention to details as indicated in this unit.

5.0 SUMMARY

In this unit, the advantages and disadvantages of computers have been extensively discussed.

6.0 TUTOR-MARKED ASSIGNMENT

1 List five advantages of the computer.
2 List five disadvantages of the computer.

7.0 REFERENCES/FURTHER READING

https://www.tutorialspoint.com/basics_of_computer_science/basics_of_computer_science_types.htm

https://digitalworld839.com/advantages-and-disadvantages-of-computer/http://

track.isport.com/track-guides/track-field-rules-regulations

UNIT 4 ANATOMY OF COMPUTER

INTRODUCTION

In the last unit you learnt about computers and how they work. This unit intends to disseminate information about the parts of a computer system. This unit will analyse all parts of computer system based on the following outline sections:

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1.0 Introduction
2.0 Intended Learning Outcomes (ILOs)
3.0 Main Content
    3.1 Anatomy of Computer
4.0 Conclusion
5.0 Summary
6.0 Tutor-Marked Assignment
7.0 References/Further Reading

1.0 INTRODUCTION

A computer can accept input, process or store data, and produce output according to a set of instructions that are fed into it. A computer system can be divided into two components which are responsible for providing the mechanisms to input and output data, to manipulate and process data, and to electronically control the various input, output, and their storage. They are known as hardware and software. The hardware is the tangible part of the computer. Whereas, the software is the intangible set of instructions that control the hardware and make it perform specific tasks. Without software, a computer is effectively useless.

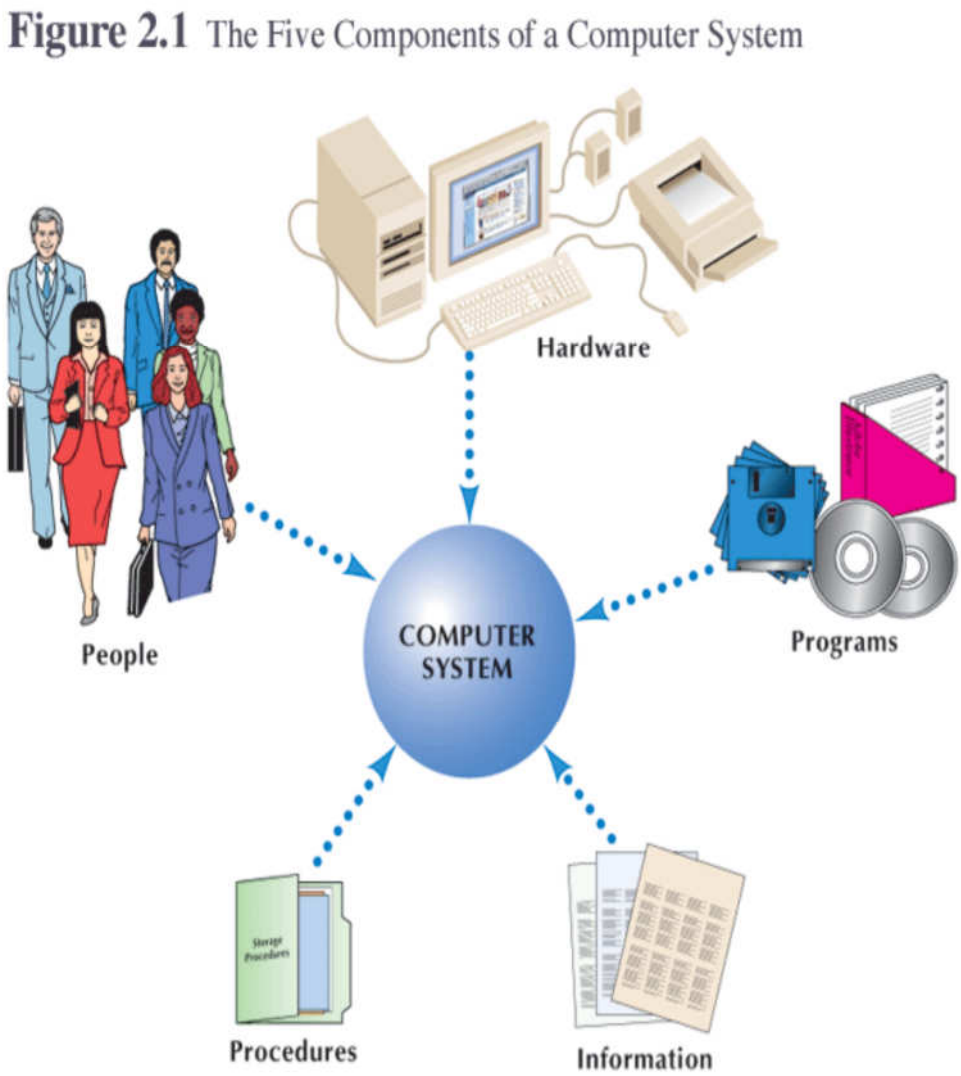
2.0 INTENDED LEARNING OUTCOMES (ILOS)

By the end of this unit, you will be able to:

- discuss the anatomy of computers
- discuss the memory of computer.

3.1 Anatomy of Computers

The computer system consists of three units:



The five components of a Computer System
Source: (Senn, 2004)

HARDWARE (COMPUTER HARDWARE OR DEVICES)

The hardware component is the physical component of a computer system i.e. those parts of the computer that can be touched, felt and seen physically. More or less, the hardware component consists of a combination of different devices which play specific roles in the operation of the computer system.

These devices that make up the hardware are classified into one of four units depending on the role they play in the computer system as follows:

- Input devices (Keyboard, Mouse, Scanner, Camera, etc.)
- Output devices (Printers, plotters, etc.)
- Storage (Hard disk, floppy disk, CD, flash drives, etc.)
- System unit (SU).

1. Input device 2. Central Processing Unit (CPU) 3. Output device

The various functions of these units can be summarised as:

Unit Function

1. Input Device: Reads information from input media and enters to the computer in a coded form

2. CPU
   (a) Memory unit: Stores program and data
   (b) Arithmetic Logic Unit: Performs arithmetic and logical functions
   (c) Control Unit: Interprets program instructions and controls the input and output devices

3. Output Device: decodes information and presents it to the user
   Central Processing Unit: It is the part of the computer that carries out the instructions of computer program. It is the unit that reads and executes program instructions. Hence, it is known as the brain of the computer. The CPU consists of storage or memory unit, Arithmetic Logic Unit (ALU) and control unit.

   (a). Memory Unit: It is also known as the primary storage or main memory. It stores data, program instructions, internal results and final output temporarily before it is sent to an appropriate output device. It consists of thousands of cells called ―storage locations‖. These cells activate with ―off-on or binary digits(0,1) mechanism. Thus a character either a letter or numerical digit is stored as a string of (0,1) Binary digits (BITS). These bits are used to store instructions and data by their combinations.

   (b) Arithmetic and Logical Unit(ALU): It is the unit where all Arithmetic operations (addition, subtraction etc.) and logical functions such as true or false, male or female are performed. Once data are fed into the main memory from input devices, they are held and transferred as needed to ALU where processing takes place. No process occurs in primary storage. Intermediate generated results in ALU

Data: It is the collection of raw facts, figures & symbols.

Ex: Names of students and their marks in different subjects listed in random order.

Information: It is the data that is processed & presented in an organised manner.

Ex: When the names of students are arranged in alphabetical order, total and average marks are calculated & presented in a tabular form, it is information.

Program: Set of instructions that enables a computer to perform a given task.

Input Devices

Devices used to provide data and instructions to the computer are called Input devices. Some important input devices are Keyboard, Mouse, Scanner, MICR, Web camera, Microphone, etc.

The Keyboard

This is the most common computer input device. All keyboards are used to enter data and text information into a computer, but computer eyboards differ in four ways:

– **Characters:** both alphabetic and symbolic keyboards are available depending on the country to be put into use.

– **Key Arrangement:** the arrangement of the keyboard's keys varies. The QWERTY

keyboard is the most common in English-speaking countries. This keyboard uses the conventional typewriter layout, in which the top row of alphabetic keys begins with the letters Q, W, E, R, T, and Y (reading from left to right).

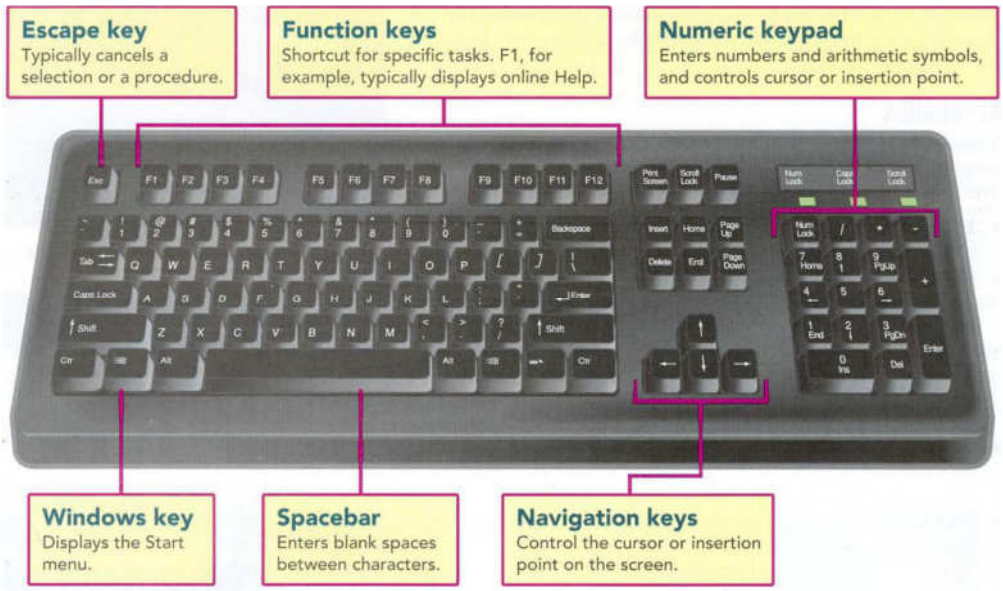
– **Special-Purpose Keys:** certain keys are designed to assist the user to enter data or information.

• ***Numeric Keys:*** these are found to the right of the alphabetic keys section on a keyboard, used to key in numeric characters.

Function Key: A key designed to assist the computer's user to control

processing, e.g. the F1 key used in most software to invoke the help file that guides the user through the use of the application.

– **Detachability:** most desktop computers have keyboards that can be detached from the rest of the computer system. The most popular of this kind is the wireless keyboards that transmit data to the computer electronically.



An example of a computer keyboard
Source: (O'Leary, 2004)

Terminal

A terminal is a combination of a keyboard and video screen that accepts input and displays it on the screen.

– Dumb Terminals
– Automated Teller Machines (ATMs)
– Point-of-sale (POS) Terminals

SCANNERS

– ***Source Data Automation****:* A method of data entry in which details enter computers directly from their written or printed forms without the intermediate step of keying.

Scanning: The process of transforming written or printed data or information into a digital form that is entered directly into the computer.

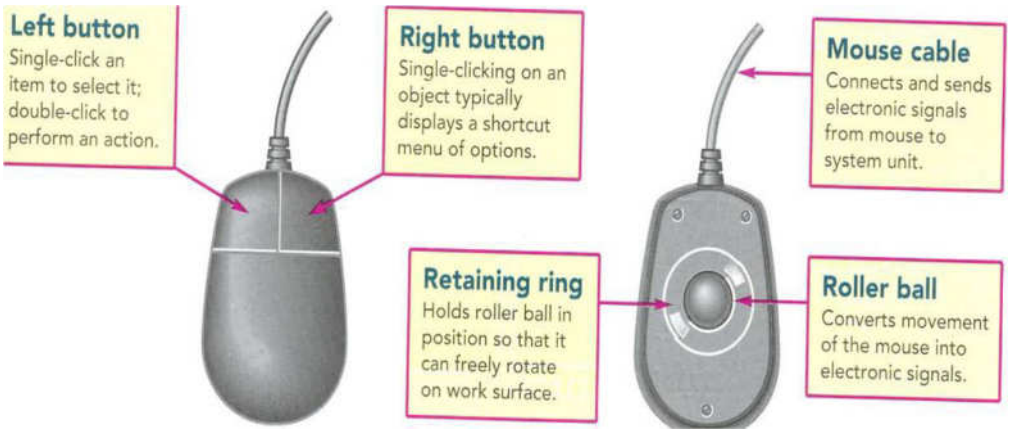
1. ***Keyboard***: The Keyboard is used for typing text into the computer. It is also known as standard Input device. A computer keyboard is similar to that of a type writer with additional keys.

The most commonly available computer keyboard has 104 keys. There are different types of keys on the keyboard. The keys are categorised as:

- Alphanumeric keys, including letters & numbers.
- Punctuation keys, such as colon (:), semicolon (;) Question mark (?), Single & double quotes (_,‖)
- Special keys such as arrow keys, control keys, function keys (F1 to F12), HOME, END etc.

2. **Mouse:** It is a device that controls the movement of the cursor on a monitor. A mouse will have two buttons on its top. The left button is the most frequently used. There will be a wheel between the left and right buttons. This wheel enables us to smoothly scroll through screens of information. As we move the mouse, the pointer on the monitor moves in the same direction. Optical mouse is another advanced pointing device that uses a light emitting component instead of the mouse ball. The mouse cannot be used for entering the data. It is only useful to select the options on the screen.

Mouse: An input device with a small ball underneath that rotates, causing a corresponding movement of a pointer on a display screen.



3. **Scanner**: It is an input device that can read text or illustrations printed on paper and translate into digital form. The main advantage of these scanners is that the data need not be entered separately resulting in saving lot of time. Scanners are of two types: i) optical scanners ii) MICR

    i) Optical scanners: a. Optical character Recognition(OCR): In this, characters are read with the help of a light. This is used in office atomization, documentation in library, etc.
    b. Optical mark recognition(OMR): It is a technology where an OMR device senses the presence or absence of a mark such as a pencil mark. OMR is used in tests such as aptitude tests.
    c. Optical barcode recognition(OBCR): Barcode readers are photoelectric scanners that read the bar codes or vertical zebra striped marks printed on product containers. This is used in supermarkets, book shops, etc.

    ii. Magnetic Ink Character Recognition MICR: This is widely used in banks to process the cheques. This allows the computer to recognise characters printed using magnetic ink.

4. **Magnetic Ink Character Recognition (MICR):** It is a character recognition technology used primarily by the banking industry to facilitate the processing of the cheques. MICR characters (cheque No., Acc. No.etc) are printed in special ink usually containing iron oxide. When a document that contains the ink needs to be read, it passes through a machine which magnetises the ink and there will be a reader sorter unit that translates the magnetic information into characters. MICR provides a secure, high speed of scanning and processing information. It scans about 2600 cheques/min.

4.0 CONCLUSION

After having completed reading through this unit and referring links and text provided, it is assumed that you have learned about various parts of a computer system. The computer is divided into three that is input, central processing unit and output devices. The questions you answered satisfactorily will indicate to you the amount of learning you have achieved in this unit.

5.0 SUMMARY

In this unit, you have learnt about different parts of a computer system (input, CPU and output devices). Input devices reads information from input media and enter into the computer. Examples of input devices are keyboard, mouse, scanner and microphone. Central Processing Unit consists of memory unit, arithmetic logic unit and control unit. The third part of the computer which is output device decodes information and presents it to the user. Examples of output devices include printers and speakers.

6.0 TUTOR-MARKED ASSIGNMENT

1. Mention four parts of a computer system.
2. List five hardware devices of computer.
3. List five software devices of computer.

7.0 REFERENCES/FURTHER READING

https://www.tutorialspoint.com/basics_of_computer_science/basics_of_computer_science_types.htm

https://digitalworld839.com/advantages-and-disadvantages-of-computer/http://

track.isport.com/track-guides/track-field-rules-regulations

UNIT 5 ANATOMY OF COMPUTER (CONT.)

INTRODUCTION

In the last unit you learnt about computers and how they work. This unit intends to disseminate information about the parts of a computer system. This unit will analyse all parts of computer system based on the following outline sections:

CONTENTS

1.0 Introduction
2.0 Intended Learning Outcomes (ILOs)
3.0 Main Content
    3.1 Anatomy of Computers
4.0 Conclusion
5.0 Summary
6.0 Tutor-Marked Assignment
7.0 Reference/Further Reading

1.0 INTRODUCTION

A computer can accept input, process or store data, and produce output according to a set of instructions that are fed into it. A computer system can be divided into two components which are responsible for providing the mechanisms to input and output data, to manipulate and process data, and to electronically control the various input, output, and their storage. They are known as hardware and software. The hardware is the tangible part of the computer. Whereas, the software is the intangible set of instructions that control the hardware and make it perform specific tasks. Without software, a computer is effectively useless.

2.0 INTENDED LEARNING OUTCOMES (ILOS)

By the end of this unit, you will be able to:

- discuss the anatomy of computers
- discuss the memory of computer.

3.0 MAIN CONTENT

3.1 Anatomy of Computers

Output devices

Any device that is capable of representing information on a computer is called an Output device. Output devices receive information from the CPU and present it to the user in the desired form. Some important Output devices are: Monitor, Printer

A computer's visual display. It is computer hardware that resembles a television. It is capable of displaying text and graphics. A monitor is one type of computer display, defined by its CRT screen. Other types of displays include flat, laptop computer screens that often use liquid-crystal displays (LCDs). Other thin, flat-screen monitors that do not employ CRTs are currently being developed. Visual displays can be distinguished using the following features;

– Size

- Monitors come in various sizes, ranging from the small screen built into palmtops and laptops to the extra-large monitors used for special purpose by engineers and illustrators who need to examine fine details closely

– Colour

- ***RGB Display:*** A video screen display with the ability to create 256 colours and several thousand variations on these colours by blending shades of red, green, and blue.

- ***Monochrome Display:*** A video screen display that shows information using a single foreground colour on a contrasting background colour (e.g. black on white).

– **Resolution**

- ***Pixels:*** The dots used to create an image; the higher the number of dots, the better the resolution of the image.

– ***Bit Mapping:*** A feature of some monitors that allows each dot on the monitor to be addressed or controlled individually. Graphics created through bit mapping are sharp and crisp.

- ***Character Addressing:*** The precursor to bit mapping that allowed only full characters to be sent to and displayed on a VDT.

– **Graphics Standard**

- ***Graphic Adapter Card:*** An interface board between a computer and monitor that is used to determine the monitor's resolution and use of colour.

– ***Multisync/Multiscan Monitors:*** Monitors designed to work with a variety of graphics standards.

1. **Terminal/Monitor**:

It is similar to TV screen- either a monochrome (black & white) or colour and it displays the output. It is also referred as Visual Display Unit(VDU). Several types of monitors are in use. Some of them are Colour Graphic Adapter(CGA), Enhanced Graphics Adaptor(EGA), Video Graphics Adapter (VGA) and Super Video Graphics Adapter (SVGA). The screen sizes differ from system to system. The standard size is 24 lines by 80 characters. Most systems have provision for scrolling which helps in moving the text vertically or horizontally on the screen.

A CRT and LCD Flat Screen Monitor
Source: (Google Images, 2020)

DATA PROJECTOR

Data Projector: Equipment connected to the computer's display output port by a data cable that is used to show the contents of a computer video display on a movie screen.

– ***Liquid Crystal Display (LCD) projector*:** An LCD projector works on the principle of blocking light rather than emitting it.

The brightness of the light (measured in lumens) determines how easily the images can be viewed in a room with ordinary lighting (as opposed to a darkened room).

– ***Digital Light Processing (DLP) Projector:*** This projector builds images on screen by digitally controlling the reflected angle of incident light, converging it with a prism, and passing the image through a lens onto the screen. It has clear, sharp images and high contrast text as well as rich colour in projected images.

Projectors
Source: (Google Images, 2020)

PRINTERS

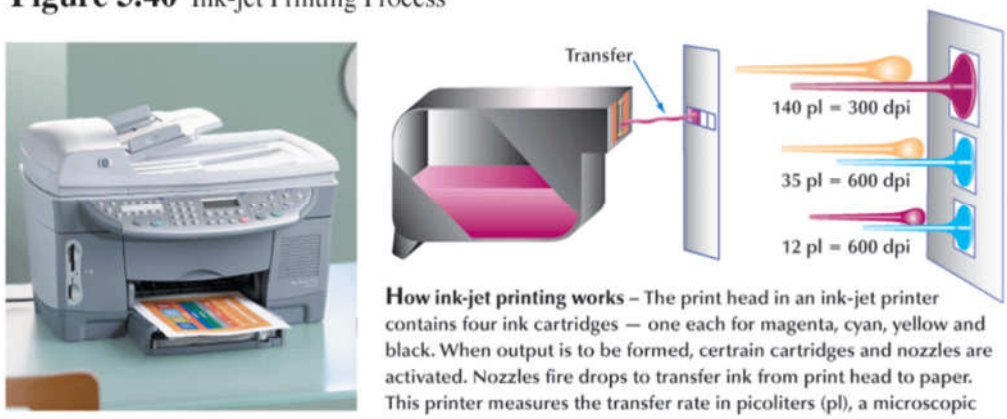
– ***Hard Copy:*** The paper output from a printer.
– ***Nonimpact Printing:*** A printing process in which no physical contact occurs between the paper and the print device; the characters are produced on the paper through a heat, chemical, or spraying process.

• ***Laser Printer:*** A nonimpact printer that uses laser beams to print an entire page at once.
• ***Ink-jet Printer:*** A printer that sprays tiny steams of ink from holes in the print mechanism onto the paper in a dot pattern that represents the character or image to be printed.
• ***Thermal Printer:*** A printer that heats a wax-based coloured ink contained in the printer ribbon and transfers it to a special paper.
– ***Impact Printing:*** A printing process in which the paper and the character being printed come into contact with each other.
• ***Line Printer:*** Prints a full line at one time on continuous-form paper. Because of their high speed, which ranges up to several

thousand lines per minute, line printers have been used in computer centres that routinely print large volumes of documents or very long reports.

- ***Dot Matrix Printing:*** Characters and images are formed by wire rods pushed against a ribbon and paper to create characters that are actually a collection of small dots.
- ***Characters Printer:*** A printer that prints one character at a time. Its speed is rated according to the number of characters printed per second.

Figure 5.40 Ink-jet Printing Process



How ink-jet printing works – The print head in an ink-jet printer contains four ink cartridges — one each for magenta, cyan, yellow and black. When output is to be formed, certrain cartridges and nozzles are activated. Nozzles fire drops to transfer ink from print head to paper. This printer measures the transfer rate in picoliters (pl), a microscopic drop.

Ink-jet Printing Process
Source: (Senn, 2020)

2. **Printer**: A printer is used to transfer data from a computer onto paper. The paper copy obtained from a printer is often referred as — printout

The different printers and their speeds are as follows:

1. Dot – Matrix Printer Prints the character in dotted pattern through printer ribbon using either 24 pin or 9 pin 200/300 to 700 CPS
2. Ink Jet printer Work by spraying ionized ink Slow, 90 CPS
3. Laser printer also called page printer. Uses laser beam to produce an image. 6 to 12 PPM
4. Line printer Prints lines at a time instead of single characters. 300 to 600 LPM
5. Plotter Produces drawings or graphs through pens which are filled with different colours. (CPS): Characters Per Second; (PPM): Pages Per Minutes; (LPM) : Lines Per Minute)

4.0 CONCLUSION

After having completed reading through this unit and referring links and text provided, it is assumed that you have learned about various parts of a computer system. The computer is divided into three that is input, central processing unit and output devices. The questions you answered satisfactorily will indicate to you the amount of learning you have achieved in this unit.

5.0 SUMMARY

In this unit, you have learnt about different parts of computer system (input, CPU and output devices). Input devices read information from input media and enter it into the computer. Examples of input devices are keyboard, mouse, scanner and microphone. Central Processing Unit consists of memory unit, arithmetic logic unit and control unit. The third part of computer which is output device decodes information and presents it to the user. Examples of output devices include printers and speakers.

6.0 TUTOR-MARKED ASSIGNMENT

Mention five output devices of a computer system.

7.0 REFERENCES/FURTHER READING

https://www.tutorialspoint.com/basics_of_computer_science/basics_of_computer_science_types.htm

https://digitalworld839.com/advantages-and-disadvantages-of-computer/http://track.isport.com/track-guides/track-field-rules-regulations

UNIT 6 MEMORY OF COMPUTER

CONTENTS

1.0 Introduction
2.0 Intended Learning Outcomes (ILOs)
3.0 Main Content
    3.1 Memory of computer
        3.1.1 Storage
    3.2 Types of Computer
    3.3 Classification of Computer
4.0 Conclusion
5.0 Summary
6.0 Tutor-Marked Assignment
7.0 Reference/Further Reading

1.0 INTRODUCTION

Storage in the computer is the process of retaining information for future use. A computer can function with only processing, input and output devices. To be useful, however, a computer also needs a place to keep program files and related data when they are not in use.

2.0 INTENDED LEARNING OUTCOMES (ILOS)

By the end of this unit, you will be able to:

- discuss the memory of computer
- state the types of memory
- list the classification of computer.

3.0 MAIN CONTENT

3.1 Memory of The Computer

Storage in a computer is the process of retaining information for future use. A computer can function with only processing, input and output devices. To be useful, however, a computer also needs a place to keep program files and related data when they are not in use.

3.1.1 Storage

The purpose of storage is to hold data.

- ***Secondary Storage/Auxiliary Storage:*** A storage medium that is external to the computer, but that can be read by the computer; a way of storing data and information outside of the computer itself.

CHARACTERISTICS OF STORAGE

– Reliable: storage retains its data when the power is turned off.
– Economical: storage is cheaper than memory.
– Compact: large volumes of data can be stored at high density.
– Convenient: storage is easy to use and can transfer data rapidly, though not as fast as memory.

3.2 Types of Storage

- By Read/Write Capability

– ***Read/Write:*** A computer application can use storage for both writing and reading data.
- By Access Capability

– ***Sequential Storage:*** Elements of data are read one right after the other.

– ***Sequential Access:*** The contents are accessed in sequence.
– ***Random Access Storage:*** The process of retrieving a particular record of information from any track directly.
– ***Random Access Device:*** The self-contained unit that holds and processes the disk.

3.3 Storage Technologies

- **Magnetic Storage**
  – ***Magnetic Tape:*** A magnetic storage medium in which data are stored on large reels of tape.

– ***Read/Write Head:*** A device that records data by magnetically aligning metallic particles on the medium. The write head records data and the read head retrieves them.
– ***Disk Cartridge:*** The cartridge, a hard disk sealed in a protective package, is inserted into the disk drive for reading and writing data.

- Extended Disk Storage Alternatives
- ***Redundant Arrays of Independent Disks (RAID):*** A set of small disk drives that work together as a single unit.
- ***Striping:*** A method of combining multiple physical drives into one logical storage unit.
- ***Fault Tolerance:*** The capability for a computer application to continue processing even if a disk drive fails.
- ***Disk Mirroring:*** The most frequently used form of RAID; it uses pairs of drives within the array and duplicates the entire contents of a disk on a second disk.

Memory or storage capacity is one of the important components of a computer. Any storage unit of a computer system is classified based on the following criteria:

1. Access time: This is the time required to locate and retrieve stored data from the storage unit in response to program instructions.
2. Storage capacity: It is the amount of data that can be stored in the storage unit.
3. Cost per bit of storage.

Units of memory: The computer stores a character in the storage cells with binary (0,1) mechanism. Thus the basic unit of memory is a bit (binary digit – 0,1). To store a character, a computer requires 8bits or 1 byte. This is called the word length of the storage unit. Hence the storage capacity of the computer is measured in the number of words it can store and is expressed in terms of bytes. The different units of measurement are

8 Bits = 1 Byte
210 (or) 1024 Bytes = 1 Kilo Byte (KB)
210 (or)1024 KB = 1 Mega Byte (MB)
210 (or)1024 MB = 1 Gega Byte (GB)

3.4 Types of Memory: A computer memory is of two types 1. Primary Memory (Internal storage) 2. Secondary Memory (External storage)

Primary Memory: Primary memory is also called internal memory and is an important part of a computer. It is the main area in a computer where the data is stored. The stored data can be recalled instantly and correctly whenever desired. This memory can be quickly accessed by the CPU for reading or storing information. Primary memory is further classified into two types: Random Access Memory **(RAM)** and Read-Only Memory **(ROM).**

RAM: RAM is also known as read/write memory as information can be read from and written onto it. RAM is a place in a computer that holds instructions for the computer, its programs, and the data. The CPU can directly access the data from RAM almost immediately. However, the storage of data and instructions in RAM is temporary, till the time the computer is running. It disappears from RAM as soon as the power to the computer is switched off. i.e it is volatile memory.

ROM: It is called Read-only memory as information can only be read from and not written or changed onto ROM. ROM is the built-in' memory of a computer. It stores some basic input-output instructions put by the manufacturer to operate the computer. The storage of data and instructions in ROM is permanent. It does not depend on the power supply. i.e it is non-volatile memory.

Secondary memory: The primary memory which is faster (and hence expensive) is generally not sufficient for large storage of data. As a result, additional memory, called the ―auxiliary or secondary memory is used. It is also referred to as ― backup storage‖ as it is used to store a large volume of data permanently which can be transferred to the primary memory whenever required for processing. Data are stored in secondary storage in the same binary codes as in the main (primary memory) storage. Some of the devices of secondary storage are Floppy Disk, Hard Disk, CD-ROM, DVD and Flash drive.

1. **Floppy Disk**: It is also referred to as ― Diskette: and is made of flexible vinyl material. It has a small hole on one side called ―Right protect notch‖, which protects accidental writing/deleting the information from the disk. There is a hole in the centre through which the spindle of the drive unit rotates the disk. The disks are available in two sizes of 5.25 and 3.5 inches and these could be either low density or high-density floppies. Storage capacities of floppies are measured in kilobytes (KB) and megabytes (MB). The details about the storage capacities of the floppies are presented

below:

Floppy Disk Storage Capacity Size (Diameter)

Low Density 360 KB 5.25 inches
High Density 1.2 MB 5.25 inches
High Density 1.44 MB 3.5 inches
Extended 2.8 MB 3.5 inches

2. **Hard Disk**:

- **Hard Disk**

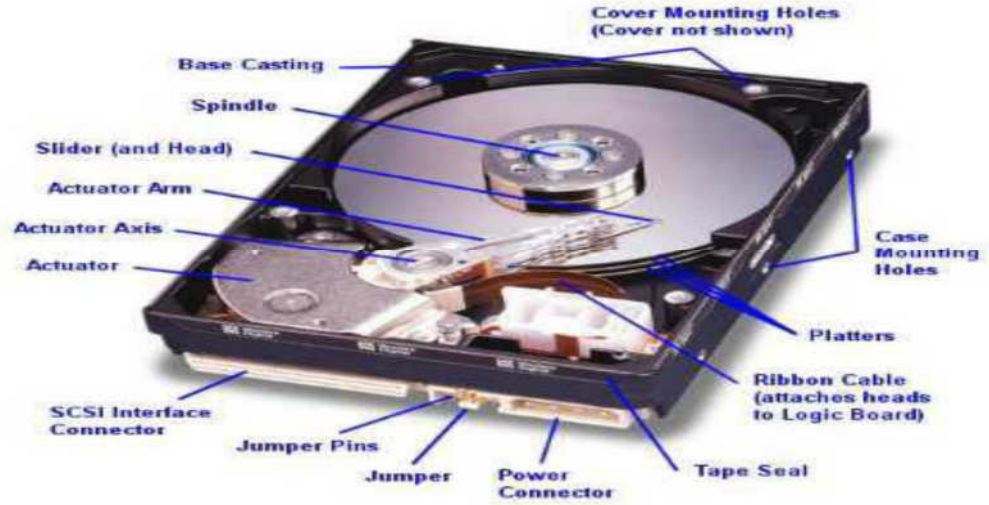
A type of secondary storage that uses nonflexible, non-removable magnetic disks mounted inside the computer to store data or information.

– ***Hard Drive/Disk Drive:*** The device that holds and processes the disk.
– ***Record:*** A grouping of data items that consists of a set of data or information that describes an entity's specific occurrence.

Disk Storage Areas

– ***Track:*** The area in which data and information are stored on magnetic tape or disk.
– ***Sector:*** A subdivision of a track on a magnetic disk; used to improve access to data or information.
– ***Cylinder:*** A storage concept that refers to the same track location on each of the platters.
– ***Head Crash:*** The situation that occurs when the read/write heads that normally float close to a magnetic disk's surface touch the surface.

– ***Disk Pack:*** A stack of disks, enclosed in a protective plastic cover that can be lifted onto or off a disk drive.
– ***Random Access Storage/Direct Access Storage:*** The process of retrieving a particular record of information from any track directly.



• **Disk Controller Interfaces**

– ***Hard Disk Controller:*** A hardware interface that may be built into the hard drive itself, in the form of an expansion board, or a connection on the system board.
– ***Integrated Drive Electronics (IDE):*** A standard electronic interface used between the bus or data path on a computer system board and the computer's disk storage devices.
– ***Small Computer System Interface (SCSI):*** A device created to speed the transfer of data between hard disks and other peripherals.
– ***Universal Service Bus (USB):*** A recent addition to PCs that can connect up to 128 devices, ranging from computer disk storage to a variety of multimedia devices.
– ***Fire Wire:*** One of the fastest peripheral interface standards ever developed.
– ***Disk Cache:*** Disk caching allows the system to store information that is frequently read from a disk in RAM.

The hard disk can hold more information than the floppy disk and the retrieval of information from the hard disk is faster when compared to floppies or tapes. A hard disk is fixed inside the CPU and its capacity ranges from 20 MB onwards. The hard disk is made up of a collection of discs (one below the other) known as platters on which the data is recorded. These platters are coated with magnetic material. It is less sensitive to external environmental disorders and hence the storage in hard disk is safe. A small hard disk might be as much as 25 times

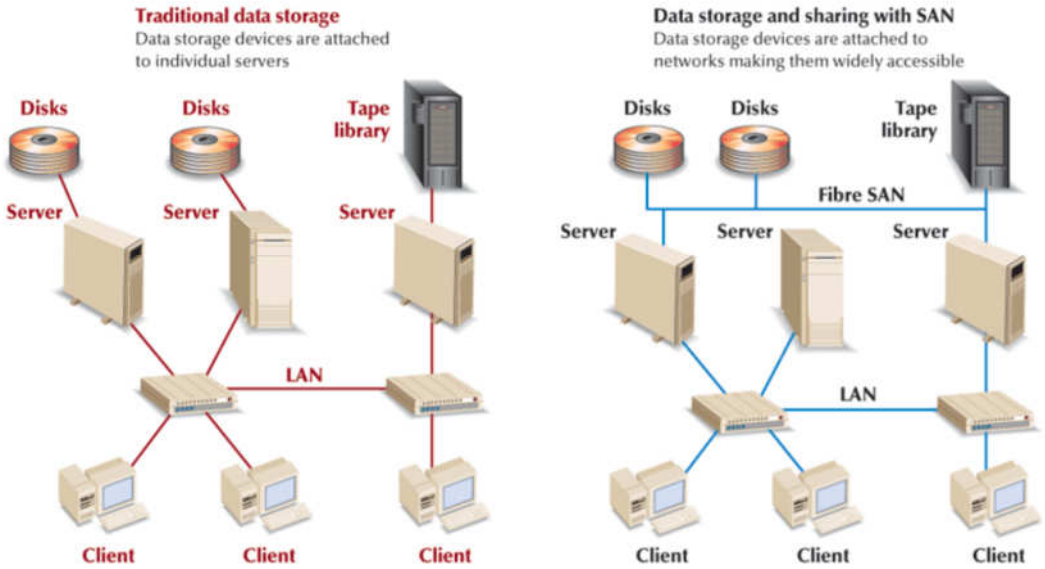
larger than a floppy disk. The storage Capacity of hard disks varies from 20 MB to several Gigabytes like 80GB, 160GB.

3. **CD-ROM**: CD-ROM stands for Compact Disk–Read-Only Memory. It is used to store a wide variety of information. Its main advantage is that it is portable and can hold a large amount of data. The storage capacity of most CD-ROMs is approximately 650 MB or 700 MB. **CD**-ROMs have the following variations:
   (i) CD-R (Compact disc Recordable): Data can be written onto it just once. The stored data can be read. Data once written onto it cannot be erased.
   (ii) CD-RW (Compact disc Rewritable): It is also called erasable CD. Data once written onto it can be erased to write or record new information many times. To use a CD-ROM, a device called CD drive is needed.
4. **DVD**: DVD stands for Digital Versatile Disc. It is similar to a CD-ROM, except that it can store larger amounts of data. The storage capacity of a DVD is at least 4.7MB. DVDs that can store up to 17GBs are also available. Because of their capacity, DVDs are generally used to store very large multimedia presentations and movies that combine high quality sound and graphics.
5. **Flash Drive**: It is a small, portable device that can be used to store, access and transfer data. Due to its small size, it is commonly called **Pen drive.** It is also called USB drive. We can read, write, copy, delete, and move data from computer to pen drive or pen drive to computer. It comes in various storage capacities of 2GB, 4GB, and 8GB, etc. It is popular because it is easy to use and small enough to be carried in a pocket. This device is plugged into the USB port of the computer and the computer automatically detects this device.

3.5 Storage Area Network

SAN is a high-speed network or system that allows different kinds of storage devices, such as tape drives and disk arrays, to be shared by all users through network servers.

Figure 5.15 Storage Area Networks Increase Enterprise Data Handling Capabilities



Storage Area Network
Source: (Senn, 2020)

HARDWARE and SOFTWARE

Hardware: The physical components of the computer are known as ―Hardware‖. It refers to the objects that we can touch. Ex: input and output devices, processors, circuits, and cables.

Software: Software is a program or set of instructions that causes the Hardware to function in the desired way. The basic difference between the Hardware and Software is just the same as that exists between and TV studio. Without a TV studio (software) from where the programs are telecast, the TV (Hardware) is a dead machine. There are five categories of software. They are:

1. Operating System 2. Translators 3. Utility programs 4. Application programs 5. General-purpose programs.

1. **Operating System (OS)**

The software that manages the resources of a computer system and schedules its operation is called the Operating system. The operating system acts as an interface between the hardware and the user programs and facilitates the execution of programs. Generally, the OS acts as an interface between the user and the Hardware of the computer. i.e It is a bridge between the user and the Hardware. The User interface provided by the OS can be character-based or graphical.

CUI -- Character user Interface
GUI -- Graphical user Interface
CUI: It is operated with keyboard only. Ex: MS-DOS, UNIX
GUI: The system can be operated with mouse and keyboard. Ex: Windows 95, Windows XP, etc.

- Disk Operating System (DOS): It was developed as early as 1980 by Bill Gates at the age of It is suited for personal computers. Dos is a single user and single-task operating system
- WINDOWS: It works with DOS and it supports single user and multitask system. It requires a powerful PC with a minimum RAM of 8MB
- UNIX AND XENIX: It is suited for multi-user and multi-task system

3. **Translators**

Computers can understand instructions only when they are written in their own language – the machine language. Therefore, a program written in any other language should be translated into machine language. The software that — translates the instructions of different languages is known as translators. There are two types of translators. They are

compilers and **Interpreters**

A Compiler checks the entire user-written program (known as the source program) and if it is error-free, produces a complete program in machine language (known as object program). The source program is retained for possible modifications and corrections and the object program is loaded into the computer for execution. If the source program contains errors, the compilers produce a list of errors at the end of the execution of the program. i.e a compiler translates the whole program before execution.

An interpreter does a similar job but in a different style. The interpreter translates one statement at a time and if it is error-free, executes. This continues till the last statement. Thus an interpreter translates or executes the first instruction before it goes to the second, while a compiler translates the whole program before execution.

The major difference between compiler and interpreter is

1. Error correction is very much simpler in the case of interpreter as it translates the statements in stages. The compiler produces an error list of the entire program at the end.
2. Interpreter takes more time for the execution of the program compared to compilers as it translates one statement at a time

Programming Languages: There are three types of programming languages.

1. Machine Languages: Computers respond only to machine language. This language is in terms of binary codes (0, 1). I.e. all programs should be written with these codes, which is difficult, time-consuming and leading to errors while writing the programs. There is no unique standard machine language. Rather there are many machine languages. These are machine-dependent. These are referred to as first-generation languages.
2. Assembly Languages: It uses mnemonic codes rather than numeric codes (as in machine Languages). Ex. Add or A is used as a symbol for addition. It requires translators to convert into machine language. Like machine language, writing program in assembly language is also time-consuming. These are also machine-dependent.
3. High-Level Languages (HLL): These are referred as problem-oriented languages (POL). These are referred to as third-generation languages. The advantages of these languages are;

    - The high level languages are convenient for writing programs as they can be written without any codes. These languages follow rules like — the English language.
    - Because of their English like nature, less time is required to write a program.
    - They are machine independent. A program written in any HLL can be run on computers of different types without any modifications.

    Several High Level Languages which are in common use:

FORTRAN: FORmula TRANslation
COBOL: Common Business Oriented Language
BASIC: Beginner‘s All-purpose Symbolic Instruction Code
PROLOG: PROgramming in LOGic
ALGOL: ALGOrithmic Language

4. **Utility Programs:** These are pre-written programs supplied by the manufacturer for maintaining day to day activities of computer system.

Example: COPY, SORT, MAILING, virus scanning software, etc.

5. **Application Programs:** These are user-written programs to do a specific job which can be changed to meet the individual needs. These programs are written in different languages such as BASIC or C or by using database packages like dBASE, Oracle. Example: Payroll, Billing, Railway Reservation, etc.

6. General Purpose Packages: These packages are developed to suit the needs of research workers/scientists in different fields. These

packages are categorised as: i) Data Analysis ii) Word Processing iii) SpreadSheet iv) Graphics and v) Databases

Data Analysis
Ex: SPSS (Statistical Package for Social Science), MSTAT, MICROSTAT, GENSTAT, SAS, etc.

Word Processing
Ex: WORD PERFECT, WORDSTAR, MS-Word, CHIRATOR, NORTON EDITOR, etc.

Spread Sheet
Ex: LOTUS, Qpro, VP-PLANNER, SYMPHONY, MS-Excel, etc.

Graphics
Ex: LOTUS, STORY-BOARD, POWER-POINT, etc.
Databases
Ex: dBASE, FOX-BASE, FOX-PRO, ORACLE, MS-Access, etc.

Functions of Operating System:

Today most operating systems perform the following important functions:

1. Processor management: It manages the assignment of processor to different tasks being performed by the computer system.
2. Memory management: It manages the allocation of main memory and other storage areas to the system programmes as well as user programmes and data.
3. Input/Output management: It manages the co-ordination and assignment of different Input and output devices while one or more programmes are executed.
4. File management: It allows all files to be easily changed and modified through the use of text editors or some other file manipulation routines.
5. Establishment and enforcement of a priority system: It determines and maintains the order in which jobs are to be executed in the computer system.
6. Interpretation of commands and instructions.
7. Facilitates easy communication between the computer system and the computer operator

3.6 Classification of Computers

Computers are classified according to the storage capacity, speed and the purpose for which they are developed. These can be classified into three types:

1.) Analog Computers 2.) Digital Computers 3.) Hybrid Computers

1. **Analog computers:** They operate by ―measuring‖ instead of ―counting‖. The name (derived from Greek word analog) denotes that the computer functions by establishing similarities between the two quantities. They are powerful tools for solving differential equations.
2. **Digital Computers**: These computers operate by ―counting‖. All quantities are expressed as discrete digits or numbers. These are useful for evaluating arithmetic expressions and manipulations of data.
3. **Hybrid Computers:** Computers that combine the features of analog and digital computers are known as Hybrid computers. A majority of the computers that are in use are digital. These computers were essentially developed for computations. Later, the developments in computers led to the use of digital computers in variety of applications. Depending on the use of applications, the digital computers are classified into i.) Special Purpose Computers and ii.) General Purpose Computers

1. **Special Purpose Computers:** These are developed with a specific purpose. Some of the areas where these computers are being used are – soil testing, drip irrigation, medical scanning, traffic signals, spacecraft, rocket technology, etc.
2. **General Purpose Computers**: These are developed to meet the requirements of several areas such as simulation, solving mathematical equations, payroll and personnel database. These computers are available in different sizes and capabilities and are further classified (based on memory, speed, and storage) as follows.

a) Super Computers b) Mainframe Computers c) Mini Computers d) Micro Computers

a) ***Super Computers***: These have extremely large storage capacities and computing speeds which are at least 10 times faster than other computers. These are used for large-scale numerical problems in scientific and engineering disciplines such as electronics, weather forecasting, etc. The first super computer was developed in U.S.A. by CRAY computers. In India, the indigenous super computer was developed under the name Param.
b) ***Mainframe Computers***: They also have large storage and high computing speed (but relatively lower than the supercomputers). They are used in applications like weather forecasting, space applications, etc., they support a large number of terminals for use by a variety of users simultaneously, but are expensive

c) ***Mini Computers***: It is a medium sized computer with moderate cost, available indigenously and used for large volume applications. It can serve multi-users simultaneously

SELF-ASSESSMENT EXERCISE

i. List five software storage of the computer.
ii. What are the classifications of the computer?

4.0 CONCLUSION

After having completed reading through this unit and referring links and text provided, it is assumed that you have learned about various parts of a computer system. The computer is divided into three that is input, central processing unit, and output devices. The questions you answered satisfactorily will indicate to you the amount of learning you have achieved in this unit.

5.0 SUMMARY

In this unit, you have learnt about different parts of computer system (input, CPU and output devices). Input devices reads information from input media and enter it into the computer. Examples of input devices are a keyboard, mouse, scanner and microphone. Central Processing Unit consists of memory unit, arithmetic logic unit and control unit. The third part of the computer which is the output device decodes information and presents it to the user. Examples of output devices include printer and speaker

6.0 TUTOR-MARKED ASSIGNMENT

1. Mention three memory of a computer system.
2. List five hardware storage of the computer.

7.0 REFERENCES/FURTHER READING

https://www.tutorialspoint.com/basics_of_computer_science/basics_of_computer_science_types.htm

https://digitalworld839.com/advantages-and-disadvantages-of-computer/http://

track.isport.com/track-guides/track-field-rules-regulations

MODULE 2 MODULE INTRODUCTION

In the last module, you learnt about computers and how they work. This module intends to link between computers and human kinetics education. Computers are devices associated with information and communication technology which are strong sources of present-day technological advancement that places every field of study at par with its counterpart of other fields to sustain standards and relevance.

UNIT 1 INTRODUCTION TO HUMAN KINETICS

CONTENTS

1.0 Introduction
2.0 Intended Learning Outcomes (ILOs)
3.0 Main Content
    3.1 History
    3.2 Pioneers of Human Kinetics
    3.3 Objectives of Human Kinetics
    3.4 components of Human Kinetics
4.0 Conclusion
5.0 Summary
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1.0 INTRODUCTION

Human Kinetics Education is the modern form of the popular Physical and Health Education which is known for its outstanding role in the development of the totality of human beings. Human kinetics education involves the understanding of Human physical, spiritual and emotional needs and devices means of meeting these needs through well-planned and structured physical activities. Furthermore, Human Kinetics teaches basic health principles intended to enhance health and wellbeing.

2.0 INTENDED LEARNING OUTCOMES (ILOS)

By the end of this unit, you will be able to:

- discuss the history of HKE
- mention at least five objectives of Human kinetics education
- state at least five pioneers of human kinetics education
- list five components or themes of human kinetics education.

3.0 MAIN CONTENT

3.1 History

A brief history of physical education in the Nigerian context can be traced to the pre-colonial Era even before the advent of British colonial masters or the missionaries. This is because the several ethnic groups that consisted in present-day Nigeria had traditional systems of education which creates room for physical education and other child grooming programs. There was the growing popularity of formal physical education programs all across the world, especially in Europe where calisthenics and gymnastics were given attention. The rage in the European world was transferred to Africa through the colonial masters and the creation of missionary schools which availed schools to have physical education incorporated into their curriculum for primary and secondary schools. The creation of institutes of higher education and organization played a very significant role in the history and development of physical education across the world.

In the European world, The history of physical education would start in just about 1820 with schools focusing on gymnastics, hygiene training and care and development of the human body which served as the foundation of the drastic introduction of physical education by over 400 institutes in the year 1950, The Young Men's Christian Association (YMCA) launched is an organisation to reckon with in the history of formal physical education in the world. YMCA established its first chapter in 1851 and focused on physical activities. Colleges were encouraged to focus on intramural sports particularly track, field and football. But physical education became a formal requirement following the civil war when many states opted to pass laws that required schools to incorporate a substantial physical education component into their curriculums. But it was not till 1970 that an amendment was made to the Federal Education Act that allowed women from high school and college to compete in athletic competitions. Sex-based discrimination was completely outlawed from government-funded programs at this point. Physical Education in college athletics received a major stimulus when a National Collegiate Athletic Association was created in the early twentieth century. There was a rise in the popularity of sports within colleges and universities and funding greatly increased. Colleges took great pride in their athletic programs and sports scholarships became a norm. There was also a surge in people who enrolled in sports education programs to meet the growing demand for professionals in the field. Decline in Physical Education But this is not meant to imply that the history of physical education has been all rosy. Late in the twentieth century, there was certainly a decline in the commitment to physical education. The growing offering of extra subjects and electives in schools

means that the shift was focusing away from physical education and towards academics. The country also faced a recession around 1970 and 1980 and the dearth of government funding means that physical education programs were often the first to be cut from schools and universities. The modern age But recent awareness of the need for balanced curriculums particularly given the national concern over the state of obesity and children's attention towards non-physical activities like video games has brought physical education back in the spotlight. The government has re-signaled its commitment to physical education by making it mandatory in public schools in early classes. But it remains an elective at the high school level. One of the most interesting developments in the history of physical education has been how the definition of physical education has evolved. While it only encompassed traditional sports in the beginning, it now includes several less physical activities such as yoga and meditation which are considered critical to helping students develop a sense of control in such a stressful age.

Physical education gained a lot of importance in the 19th century. It was formally introduced as a major part of all school curriculums. However, this form of education has been around since the Roman and Greek period. Physical education is important to maintain health and fitness.

Physical Education in Colonial Nigeria

The British colonial administration brought tremendous changes in the lives and times of Nigerians, some of which led to confusion among the natives. One area that was drastically changed by the new administration was the education of children. Previously, schools were run by missionaries, primarily to train their adherents and prepare clergy members for the study of sacred writings and the performance of religious duties. In these schools, physical training, as it was known at the time, primarily was used to maintain discipline among the children. School programs in colonial Nigeria did not differentiate between the components of physical education, health education, and recreation. The programs also were beset by problems, such as lack of qualified staff and inadequate teaching facilities and equipment, as well as the misinterpretation of the values inherent in physical education. Physical education was regarded as a non-academic and extracurricular activity that should take place after the normal academic work of the day. The main method of instruction in colonial Nigeria was the command style, in which the learners listened to specific instructions from the teacher and then complied rigidly. Lacking qualified personnel, schools used retired physical training instructors from the colonial Army to teach children. This practice was understandable because physical education previously had not been an established subject at universities, and only a few students were qualified to teach the subject when they graduated. The emphasis on

military drills was discontinued and significant changes were made in the physical education programs in Nigerian schools when curriculum changes occurred in Britain and the colonies. In 1957 a significant breakthrough in the development of physical education in Nigerian schools occurred when the Nigeria College of Arts, Science, and Technology, Zaria, established a specialised College of Physical Education for the professional preparation of physical education teachers. This college, which eventually became Ahmadu Bello University, Zaria, helped develop Nigeria's physical education program when the country gained political independence in October 1960.

Physical Education in Post-Independence Nigeria

Graduates of the College of Physical Education made laudable efforts to establish and develop physical education programs in Nigeria's school system through their teaching, supervision, and curriculum revision activities. By the end of the first decade after Nigeria's political independence, physical education and recreation programs were springing up in several of the country's tertiary institutions. The first degree-awarding institution was the Powell College of Physical and Health Education at the University of Nigeria, Nsukka in 1961. By the early 1970s, physical education programs in Nigeria became very popular because:

- The federal government's post-war reconciliation program emphasised youth sports as a means of fostering national unity; and
- The universal, free primary education program prompted the massive training of teachers, particularly those for the primary school system. This was a period of glory for physical education in Nigeria, and qualified teachers were highly sought after. A continuing high level of interest among students in this area of study spurred most Nigerian universities and colleges of education to offer physical education programs. Today, 20 Nigerian universities offer physical education programs, with many of them offering postgraduate degrees.

Developmental Factors

Several factors positively influenced the rapid growth and development of physical education in Nigeria into the 1990s, including:

- NAPHER (Nigeria Association for Physical, Health Education, and Recreation);
- Nigeria's National Policy on Education (Federal Republic of Nigeria 1977, 1981); and

- Governmental support of sports festivals, sports-specific policies, and Vision 2010 (1997).

3.2 Pioneers of Human Kinetics

The following set of elites is revered and addressed as the topmost pioneers of physical education in Nigeria due to their contributions to the field. Few of them are

1. Harding James Ekperigin
2. Prof(Mrs) Ekunlayo
3. Isaac Akioye
4. Prof M.O Ajisafe
5. Prof Lasun Emiola

3.3 Objectives of Human Kinetics

Education, particularly school education, aims at the holistic development of children. It provides students with opportunities to grow and develop as adults to be useful for society. We need to know that one of the most important requirements for growing into healthy adulthood is physical growth which supports cognitive development. It is, therefore, necessary that all children get adequate opportunity to participate in free play, informal and formal games, sports and yoga activities. It is in this context that health has been made a significant component of the subject of Physical Education in the school education system of the country. The subject “Health and Physical Education” adopts a holistic definition of health within which physical education and yoga contribute to the physical, social, emotional and mental development of a child. Given the above, the meaning of physical education becomes a little different from what is commonly understood. Physical education comprises holistic education for the development of the personality of the child to its fullest and perfection in body, mind and spirit through engaging in regular physical activities. Physical education through the medium of physical activities helps individuals to attain and maintain physical fitness. It contributes to physical efficiency, mental alertness and the development of qualities like perseverance, team spirit, leadership and obedience to rules. It develops personal and social skills among the learners and makes a positive impact on their physical, social, emotional and mental development. It also contributes to the total health of learners and the community. Physical education thus, can be defined as a subject that is not only focused on physical fitness but is also concerned with the development of several skills, abilities and attitudes for leading a healthy lifestyle. It inculcates values like cooperation, respect for others, loyalty, self-confidence, winning with grace, and losing with hope.

3.4 Objectives of Physical Education

As discussed above, by now it may be clear to you that the aim of physical education is not only physical development but also to equip learners with knowledge, skills, capacities, values, and the enthusiasm to maintain and carry on a healthy lifestyle. It promotes physical fitness, develops motor skills and the understanding of rules, concepts and strategies of playing games and sports. Students learn to either work as part of a team, or as individuals in a wide variety of competitive activities. The main objectives of physical education are to:

- develop motor abilities like strength, speed, endurance, coordination, flexibility, agility and balance, as they are important aspects for good performance in different games and sports.
- develop techniques and tactics involved in organised physical activities, games and sports.
- acquire knowledge about human body as its functioning is influenced by physical activities.
- understand the process of growth and development as participation in physical activities has positive relationship with it.
- develop socio-psychological aspects like control of emotions, balanced behaviour, development of leadership and followership qualities and team spirit through participation in games and sports.
- develop positive health-related fitness habits which can be practised lifelong to prevent degenerative diseases.

3.5 Components of Human Kinetics

Physical education has evolved as a multi-disciplinary subject over time and its scope is not confined to physical fitness and knowing the rules of games and sports. It includes many topics which belong to other subjects like science, biology, genetics, psychology and sociology. Possibly, all the contents that constitute the scope of physical education may not find a place in the syllabus meant for school education. However, it contains all the content areas as stated below.

Games and Sports as a Cultural Heritage

The games and sports activities that you play today have a strong linkage to our culture. Sports activities that dominate any region are embedded in the cultural milieu. Some of the sports that reflect the culture of a region of our country are *Kho-Kho*, *Kabbadi*, Archery, Lezim, Wrestling and so on. Our ancestors survived on hunting with the use of throwing stones as well as bows and arrows, running, jumping, etc. were used for survival and recreation. Later when man became more civilised, it took the shape of competitive sports like athletics, wrestling, and archery among others.

By this, we can see a strong bonding of our culture in the present evolution of games and sports.

Mechanical Aspects in Physical Education

Physical education takes into consideration the mechanical aspects of various physical activities being performed. You are aware that the concepts regarding laws of motion, lever, force and its generation, maintenance of equilibrium, centre of gravity and its impact on movements, law of acceleration, speed and its development form important content areas of physical education. You will also study these aspects in your science textbook.

Biological Contents in Physical Education

The contents are drawn from the biological sciences take into consideration the areas of heredity and environment, growth and development, organs and systems, understanding of joints classification, and possible movements around these joints. In addition, muscles and their properties, the effect of exercise on various systems of the body (like circulatory, respiratory, muscular, digestive and skeletal systems) are also linked to physical activities.

Health Education and Wellness Contents in Physical Education

Physical education includes content related to the area of health education through understanding the concept of hygiene, knowledge about various communicable and non-communicable diseases, problems relating to health and their prevention, proper nutrition and balanced diet. Community health, school health service programme, assessment of health status, prevention, safety and first aid for common injuries are also included in the scope of physical education.

Psycho-social Content of Physical Education

Psycho-social aspect of physical education extends to the study of areas regarding individual differences, personality development, learning of various skills, motivation and its techniques, anxiety management, ethical and social values, group dynamics, cooperation, cohesiveness and learning. It also focuses on emotional development, relationships with peer/parents and others, self-concept and self-esteem.

Talent Identification and Training Content in Physical Education

Physical education includes contents concerning talent identification, development of components concerning a specific sport, understanding of

various types of activities like aerobic, anaerobic, rhythmic and calisthenics. Training programmes, learning and perfection of various movements, sports skills, techniques and tactical patterns, warming upload adaptation, recovery and cooling down are also a part of physical education.

4.0 CONCLUSION

Having completed reading through this unit and making reference to links and text provided, it is assumed that you have learned and acquired essential knowledge on physical Health Education which is required to have in the unit. The questions you answered satisfactorily will indicate to you the amount of learning you have achieved in the unit. You are encouraged to read further to widen your knowledge of the concept of the unit.

5.0 SUMMARY

In this unit, you have learned the application of computers in the teaching and learning process of human kinetics, the advantages of computers in human kinetics education and also, the challenges of the application of computers in human kinetics education. The assessment and self-assessment exercise have been provided to enable you to understand your rating of the understanding and learning you achieved reading this material in this Unit. Online links have also been provided to broaden your understanding of the learning required in this unit.

6.0 TUTOR-MARKED ASSIGNMENT

1. State briefly the history of HKE.
2. Mention at least five objectives of Human kinetics education.
3. State at least 5 pioneers of human kinetics education.
4. Mention five components or themes of human kinetics education.

7.0 REFERENCES/FURTHER READING

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UNIT 2 THE USE OF COMPUTERS IN HUMAN KINETICS EDUCATION

CONTENTS

1.0 Introduction
2.0 Intended Learning Outcomes (ILOs)
3.0 Main Content
- 3.1 The Application of Computer in Human Kinetics Education
- 3.2 The Advantages of Computer in Human Kinetics Education
- 3.3 Challenges of the Application of Computer in Human Kinetics Education
- 3.4 Need for Computers in Human Kinetics
- 3.5 Role of computer and Information Communication Technology in the achievement of the Objectives of Human Kinetics?
- 3.6 Computer Applications and Devices related to Human Kinetics of Human Kinetics

4.0 Conclusion
5.0 Summary
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70 Reference/Further Reading

1.0 INTRODUCTION

Computer use in Human Kinetics goes beyond the mere use of the popular computer device. It is rather the utilisation of the Information and communication technology because it also compels us to use some measurement and evaluation electronic devices, some audio-visual aids for the subject's and teacher's performance evaluation or even some sequences allowing us to organise and objectively assess the final results. The quick technological progresses have also been integrated into the physical education (PE) lesson to the point that nowadays they seem to threaten the rudimentary education tools.

2.0 INTENDED LEARNING OUTCOMES (ILOS)

By the end of this unit, you will be able to:

- link the relevance of computer to Human Kinetics education
- state some computer devices that can be used in Human Kinetics Education.

3.0 MAIN CONTENT

The creation of the modern computer has changed the face of the planet. Today there are more devices fitted with a microchip than there are human beings. The word 'computer' comes from the word compute which means 'to calculate'. Computers were developed from calculators as the need arose for more complex and scientific calculations. A computer is a machine that had been designed by people to carry out some numerical and mathematical operations. Technically, a computer is a programmable machine. This means it can execute a programmed list of instructions and respond to new instructions that it is given. A computer is an electronic device that manipulates information, or data. It can store, retrieve and process data. Computer in physical education is an interdisciplinary discipline that has its goal in combining the theoretical as well as practical aspects. Computer-assisted instruction provides students with an alternative to classroom settings and frees the instructor from wrote process that is better handled by the computer. Students can observe and listen to the mechanics of movements in slow motion and learn effectively with the help of a computer. Using the internet one can update the recent technological improvement in sports training, changes in rules, to download the rules from the internet authorities, to do research, and so on. Computers have potential applications in the elementary and secondary physical education curriculum current usage is minimal when compared to other disciplines. Computers are highly useful in making wide tasks and projects including budgeting, financial statements, calculations and scheduling in physical education programs. Using computers not only enhances the quality of documentation but also saves time and operational expenses for sports organisations.

3.1 The Application of Computer in Human Kinetics Education

The use of computers in the learning process of Human kinetics education may not be a goal of its own but it is a tool with which to reach objectives. The following are ways through which computers can be applied in Human kinetics education

1. **Application of Computer in Delivering A Human Kinetics Lesson with the Use of A Projector:** Projector is a piece of equipment for projecting the image from a film onto a screen and for playing back recorded sound from tracks on the film. In the teaching of Human Kinetics classes, the projector is the technology that will assist the teacher to project some concepts in the field to enable the students to comprehend the lesson. For example in the teaching of the performance of the different skills in the games, the projector assists the teacher to bring to limelight the concept where

a short video clip of the athlete performing the skill is shown to the students thereby making the topic real and interesting. The projector can also be used in the teaching of the physiological and anatomical processes that takes place in the body.

2. **Application of Computers in Motor Learning and Control:** Reaction and movement time, time-on-target scores, movement distance and location and neuromuscular neuro-physiological variable Software applications are used in Human kinetics practical lessons. The motion analysis also aids the teaching and learning process of Human kinetics. This involves using a computer to examine the way learners move and then determine ways in which these movements can be improved in a practical human kinetics class. This device stresses how human motor abilities can be perfected and controlled (Damme, 2001). For example, if you ask a softball pitcher how he/she throws a fastball, they may not be able to tell you. Motion analysis visually shows the rudiments and sequence of actions involved in the arm, leg movements to enhance the performance of skills. Videotaped images are also transferred into computers. Special application software analyses the images. It measures the exact angle at which the player s holding his or her arms and legs. The speed and efficiency of each movement are measured. When using images, the teacher, advantage consists in his possibility of making corrections as soon as students' exercise is completed, which helps to quickly progress teaching and improves learning.

3. **Computers are used to Access the Internet:** The Internet is a global system of interconnected computer networks that promote the free flow of information by packet switching using the standardised Internet protocol suit (Singh, Devi and Raychandhury, 2009). It is a global network that brings together different satellites, telephones and millions of private and commercial, academic, business and government networks of local, global scope that are linked by copper wires, fiber-optic cables and wireless connections technologies. The internet provides various information resources and services which can be used by both Human Kinetics teachers and students for teaching and learning. They include electronic mail, online chat, electronic transactions, and bulletin board, file transfer and file sharing, online newspapers, journals, online gaming and inter-linked hypertext documents and other resources of the worldwide web. Human kinetics teachers share the experience with other professionals via the internet which is integrated into teaching lessons. Students explore new knowledge as they surf the web for assignments, chat with fellow students and play games online. The

internet can be used to maximise the effectiveness of the learning process in Human kinetics education. Students have the possibility to email their questions or comments concerning their questions and issues in Human kinetics education programs, courses to their Human kinetics teachers and academic staff. A user sends an email message to the Ike mailing list which is broadcast to other users for accessing current information. Examples are the sports philosophy and Question lists. Interactive chat through the internet improves communication with experts and colleagues and community members. Chat allows fellow physical educators to simultaneously communicate publicly on your website, internet and extranet. Team members, class and coursemates from different locations can easily conduct online meetings. Colleagues could gather in large online events to interact with experts, celebrities, instructors, coaches and teachers can assess chat groups on particular academic issues in Human kinetics education and sports.

4. **Computers are used for Video Conferencing:** Video conferencing allows two or more people at different locations to see and hear each other at the same time. This communication technology offers new possibilities for Human kinetics teachers, sports colleges, libraries including formal instruction to share strategies for coaching sports skills. The digital camera use in the instructive educative process allows quick verification of students' placement and posture, being at the same time a very good means to stress body segment positions when performing sonic motor elements.

5. **Application of computers in Human Kinetics Research:** in Human kinetics research studies, computers are used in literature searching, test administration, data analysis, result analysis and or general assist (Excel, Word, SPSS, and others) management.

6. **Application of Computer in the Field of Exercise Physiology:** The computer helps to monitor minute-by-minute changes in lactic acid levels in muscular tissue to determine the blood pressure, heart rate, pulse rate; analog to digital converter is used by installing it into the computer. Multiple measures can be recorded simultaneously from subjects. It is also used to calculate the body fat percentage based on skin fold.

7. **Using Computer in measuring Variables Determination of Maximum Oxygen Consumption:** Maximum oxygen consumption is the best indicator of cardiovascular fitness. This procedure is used to read gas analysers and calculate the percentage of the relevant gases and to read the volume meters for

flow rates. The auxiliary function may occupy a waste of space, time, etc. while using the computer keyboard alone does the same function rapidly including the barometric pressure determination.

8. **Use of Computer for Fitness Prescription:** The fitness professional may prescribe the fitness programme with commercially available software which helps to accomplish the task quickly. After installing the software programme to the system, the result of the physical fitness test of subjects may be entered into the system and compared with the programme. Then the appropriate exercise shall be fixed according to the individual's result.

9. **Body composition:** The body composition software programme is designed for use in health enhancement programmers offered through medical clinics. It allows entry of demographic information and also provides a selection of body composition methods

10. **Application of computers in sports psychology:** Software packages such as self-assessment, self-talks, Concentration tasks, Bio-feedback and relaxation techniques, also psychological instruments are used in the field of sports psychology.

3.2 The Advantages of Computer in Human Kinetics Education

1. It provides a wide range of programs assigned to enhance the teaching and learning of human kinetics lessons.
2. It provides an "avenue" for a variety of teaching styles.
3. It improves the lesson through a myriad of colourful graphics, diagrams, electronic texts, sounds, animations and movements.
4. It keeps the learner focused on the issue.
5. It allows a more efficient data storing and quicker data analysis.
6. It improves the lesson through the use of data loggers or sensors to collect information for direct input and analysis.
7. It contributes to the Human kinetics programme comprehensive and efficient management.

In-Text Question: List four advantages of computers in human kinetics education.

3.3 Challenges of the Application of Computer in Human Kinetics Education

Although computer holds great potential in supporting and augmenting existing educational as well as National development efforts, and in the

teaching and learning of Human kinetics education, several challenges remain. These challenges include:

1. the lack of regular power supply
2. staff training and development on computer software
3. assessing software and packages for teachers
4. crashing of computers and corruption of files
5. high cost of computer gadgets
6. Human kinetics teachers' incompetence on the use of computers.

In-Text Question: state 4 challenges of the application of computer in human kinetics education

Application of computers in research

- Literature searching
- Test administration
- Data analysis
- Result analysis
- General assist

Application of computers in motor learning and control

- Reaction and Movement time
- Time-on-target scores
- Movement distance and location
- Neuromuscular Neuro-Physiological variable
- Software application

Application in the field of exercise physiology

Exercise physiology research

- Computer helps to monitor minute-by-minute changes in lactic acid levels in muscular tissue.
- To determine the blood pressure, heart rate, pulse rate, analog to digital converter is used by installing it into the computer.
- Multiple measures can be recorded simultaneously from subjects.
- It is also used to calculate the body fat percentage based on skin fold.

Using computers in measuring variables
Determination of maximum oxygen consumption

- Maximum oxygen consumption is the best indicator of cardiovascular fitness.

- This procedure is used to read gas analysers and calculate percentage of the relevant gases and read the volume meters for flow rates.
- Auxiliary function may occupy a waste of space, time, etc. while using the computer keyboard alone does the same function rapidly including the barometric pressure determination**.**

Fitness prescription

- The fitness professional may prescribe the fitness programme with the commercially available software which helps to accomplish the task quickly.
- After installing the software programme to the system, the result of the physical fitness test of subjects may be entered into the system and compared with the programme.
- Then the appropriate exercise shall be fixed according to the individual's result.

Body composition

- Body composition software programme is designed for use in health enhancement programmers offered through medical clinics.
- It allows the entry of demographic information and also provides selection of body composition methods.

Application in the field of bio-mechanics

- Teaching aids
- Film analysis
- Force measurement
- Force plates
- Using computers with Isokinetic dynameters

Application of computers in sports psychology

- Self-assessment
- Self-talks
- Concentration tasks

3.4 Need for Computers in Human Kinetics

- Computers are needed to design programs in the field of Human Kinetics Education
- To ease job
- For effective measurement and evaluation

3.5 Role of computer and Information Communication Technology in the achievement of the Objectives of Human Kinetics?

Benefits of information and communication technology in sports management in Nigerian universities Information Technology is basically tools and methods used for the identification, organisation and manipulation of facts that is called data. It is today a driving force in all sectors of the economy, industries, education and indeed sports. Information Technology in sport management systems centres on technological revolution; internet and E-commerce mainly as a vehicle for people to participate in sports through lower-priced equipment.

Information Technology is today, the engine house driving all sectors of the economy globally; be it in the private or public sector – industries, government sectors/agencies and sports administration. Sports Managers, Directors or Coaches (as the case may be) can also use Information Technology (IT) to develop various services for members, such as e-newsletters, online application for merchandise, or competition entries. For example, the Nigerian University Games Association introduced the use of Information Technology (IT) a website, web-based, interactive information system that linked all the Nigerian Universities for the games held in the University of Benin in 2011. Online sport activity registration is important in University sports. At the Centre of Stage is the most important piece of equipment called “Computer”. The computer and the software that it runs is an essential element and a key to success for modern sports management. The secret to managing knowledge and information is in the development and maintenance of computer database. The use of database organised collection of records that can be reached, accessed and modified. A relational database can be used by sports managers or coaches to store information in a series of tables consisting of rows and columns of data. Every information on a sports competition could be stored in the database; the schedule for events can be pulled out; name of officials results. All these could take hours of manual manipulation from paper records but with computer database; and within seconds the information is out. The use of Information Technology is very necessary during NUGA games on the year-to-year operation. It could be used by each University in Nigeria for her athletes' specific information such as name, sex, age, contact information; level of student-athlete in school, number of the year he or she has been to and participated in NUGA games; also to authenticate his/her studentship; medical history etc. Fund is an issue for today’s University Sport Management professionals. The database could be very useful for tracking donors or potential donors for their services. It could be very vital for general management of sports personnel. Issues like accounting, keeping business records, employee files, equipment inventories, or facility maintenance

records could be handled in database. The organisational marketing information system is a typical database program in which information such as season ticket sales; gate receipts or merchandise sales are tracked. Database could be regularly updated to record changes, bearing in mind that the passage of time presents a more comprehensive future of most activities. The ability to record changes in sports and make sense and corrections out of it is essential for the long-term survival of sports management globally. Although database are used for effective sports program management, the real power of information technology lies in the computer.

Furthermore, computers are tied together through the medium of a network. Today, apart from sports managers, larger enterprises use computer networks to link their operations in a common computing environment. This network has a main server that houses most of the information and database files. Sports as a physically demanding profession, should use computer to help push sporting organisations towards their goal of success.

Video preparation is a major component of professional sports. For example, many coaches, trainers and even athletes themselves review recorded competitions tapes to study someone's performance at critical parts of competition and thus learn. A boxer can review his next opponent’s fight to learn weaknesses/strength to exploit; A football coach can review game tape to see how to improve his offensive passing/attack and improve on his game plan. The computer also allows sports professionals to store a large amount of video footage in one place as against having multiple discs or cassettes of film; all this information could be stored in a single jump drive or laptop for easier access at short notice Statistical data storage Statistics are an important aspect of sports organisation and management. Fans, sports agents, coaches, players and the Universities administration; all want to know exactly how well or bad they performed at any given time/year. Keeping a track record of that data by Managers/Directors of Sports is very necessary for sports management.

internet is the interconnection of millions of computers from one geographical location to another through the end of a telecommunication system in other to accomplish sharing of information across the globe. It is important to note that computer networks need not be limited to a single site or facility. Wide Area Network can little together University Sports administrators located throughout the Federation. For example, the zonal offices of a national sports governing body such as the Nigerian University Games Association can be linked together regardless of their geographic location.

The operatives so linked can share information cheaply and effectively through the medium of e-mail. The computer network which the public is

most familiar with is the internet and the worldwide web, known as the "web" and it is what most people think of when we say "the internet". This medium has exploded and today there are more than 15 million web addresses called Uniform Resources Locators (URLs) with many individual pages on their sites. Most significant at this juncture is the marketing and commerce application of the web. For example, there are virtually no professional sports teams in the United State today that do not have a website; most of them are linked together through networks of websites coordinated through the various league/offices. How tight these linkages are, is driven in part by agreement between the league teams on activities such as revenue sharing for media broadcasting rights and merchandise sales. The web is currently used by professional sports teams in so many ways. In Montreal where there are no English language radio broadcasts, for their Expos professional baseball team, the fans who want to hear the play by play in the English language can only do so by calling up the team's website and listening to it coming across as an audio feed. Many clubs require their players to have e-mail addresses as a means to interact with both the administrators and fans. This is in existence today in Nigerian University Games Association Council (NUGA).

E-Commerce: The web can change the sale and distribution of sporting equipment. Facilities that are central in the administration/running of sports programme in Universities. The relative cost of sports equipment can be an issue for the profession, particularly in terms of trying to broaden the appeal of sport to the greatest number of participants. It holds the potential for containing. Costs for Sports Equipment: In the traditional model of manufacture and distribution through a sporting goods store, it is not uncommon for a tennis racquet which cost N4,000 to manufacture to be marked up as much as 300 to 400% to as much as 160% as it moves through various wholesalers and retailers in the distribution chain to a tennis player. With an e-commerce arrangement whereby the manufacturer can reach the buyer directly without going through middlemen, the mark–up in distribution can be reduced to as little as 50% of the traditional retail price resulting in a sale price to the end-user of about ₦8,000. Very simply, the more middlemen in a distribution chain, the greater the benefit derived to the end-user from using e-commerce distribution. To set up information technology for sports management in Universities, the following items are required – Computer; internet connectivity; file servers; software to create database e.g oracle computer experts; computer analysis and programmes amongst others

3.6 Computer Applications and Devices related to Human Kinetics

Computer applications were first introduced according to history in human kinetics and sports in the mid of the ' 60s . Various ideas, concepts

and experimental methods from other scientific fields were gathered adopted in the development of applications related to human Kinetics Education. The mainframe computers available at that time were utilised in rendering Statistical analyses and numerical calculations of biomechanical investigations. The computer programs developed for PHE as published in the very first edition of the Journal of Biomechanics may serve as an example. In the biomechanical literature, numerous examples can be found propagating the use of computers since then (cf. Lees 1985). Measuring devices acquiring biomechanical data (reaction forces, EMG data, etc.) using analog-digital converters and opto-electronic systems for human motion analysis have been developed for decades. Moreover, modem computer technology was of crucial importance for solving numerical problems in biomechanical modelling and simulation. 186 Arnold Baca Another early use of computers in sports originates from notational anal.

Another early use of computers in sports originates from the notational analysis. Rudimentary forms of notating or coding events in games can be found for centuries. Downey presented a complex notational system for lawn tennis matches. The objective method of game analysis in squash proposed by Sanderson and Way was the basis for a computerised system developed. Some of the computer applications and devices used in sport are:

1. Microsoft Excel
2. Statistics Package for Social Sciences(SPSS)
3. Digital weighing scale
4. Digital scoring board
5. Digital sphygmomanometer.

SELF-ASSESSMENT EXERCISE

In-Text Question: mention five ways a computer can be applied in human kinetics education:

1. Application of computers in Human kinetics research.
2. Application of Computer in the Field of Exercise Physiology.
3. Use of Computer for Fitness Prescription.
4. Application of Computers in Motor Learning and Control.
5. Computers are Used to Access the Internet.

4.0 CONCLUSION

Having read this topic and completed the assessment and self-assessment test it is presumed that you have gained an understanding of the

knowledge of application of computer in the teaching and learning process of human kinetics education.

5.0 SUMMARY

In this unit, you have learnt the application of computer in the teaching and learning process of human kinetics, the advantages of computer in human kinetics education and also, the challenges of the application of computer in human kinetics education. The assessment and self-assessment exercise have been provided to enable you understand your rating of the understanding and learning you achieved reading this material in this Unit. Online links have also been provided to broaden your understanding of the learning required in this unit.

6.0 TUTOR-MARKED ASSIGNMENT

Attempt the following questions:

1. List and discuss five ways through which computer can be applied in human kinetics education.
2. Mention five importance of computer in human kinetics education.
3. State five challenges of the application of computer in human kinetics education.

7.0 REFERENCES/FURTHER READING

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UNIT 3 INTRODUCTION TO HUMAN KINETICS (CONT.)

CONTENTS

1.0 Introduction
2.0 Intended Learning Outcomes (ILOs)
3.0 Main Content
    3.1 Pioneers of Human Kinetics
    3.2 Objectives of Human Kinetics
    3.3 Objectives of Physical Education
    3.4 Components of Human Kinetics
4.0 Conclusion
5.0 Summary
6.0 Tutor-Marked Assignment
7.0 Reference/Further Reading

1.0 INTRODUCTION

Human Kinetics Education is the modern form of the popular Physical and Health Education which is known for its outstanding role in the development of the totality of human beings. Human kinetics education involves the understanding of Human physical, spiritual and emotional needs and devices means of meeting these needs through well-planned and structured physical activities. Furthermore, Human Kinetics teaches basic health principles intended to enhance health and wellbeing.

2.0 INTENDED LEARNING OUTCOMES (ILOS)

By the end of this unit, you will be able to:

- discuss at least five pioneers of human kinetics education
- five components or themes of human kinetics education
- objectives of physical education.

3.0 MAIN CONTENT

3.1 Pioneers of Human Kinetics

The following set of elites is revered and addressed as the topmost pioneers of physical education in Nigeria due to their contributions to the field. Few of them are

- Harding James Ekperigin
- Prof (Mrs) Ekunlayo

- Isaac Akioye
- Prof M.O Ajisafe
- Prof Lasun Emiola

3.2 Objectives of Human Kinetics

Education, particularly school education, aims at the holistic development of children. It provides students with opportunities to grow and develop as adults to be useful for society. We need to know that one of the most important requirements for growing into healthy adulthood is physical growth which supports cognitive development. It is, therefore, necessary that all children get adequate opportunity to participate in free play, informal and formal games, sports and yoga activities. It is in this context that health has been made a significant component of the subject of Physical Education in the school education system of the country. The subject "Health and Physical Education" adopts a holistic definition of health within which physical education and yoga contribute to the physical, social, emotional and mental development of a child. Given the above, the meaning of physical education becomes a little different from what is commonly understood. Physical education comprises holistic education for the development of the personality of the child to its fullest and perfection in body, mind and spirit through engaging in regular physical activities. Physical education through the medium of physical activities helps individuals to attain and maintain physical fitness. It contributes to physical efficiency, mental alertness and the development of qualities like perseverance, team spirit, leadership and obedience to rules. It develops personal and social skills among the learners and makes a positive impact on their physical, social, emotional and mental development. It also contributes to the total health of learners and the community. Physical education thus can be defined as a subject that is not only focused on physical fitness but is also concerned with development of many skills, abilities and attitudes for leading a healthy lifestyle. It inculcates values like cooperation, respect for others, loyalty, self-confidence, winning with grace, and losing with hope.

3.3 Objectives of Physical Education

As discussed above, by now it may be clear to you that the aim of physical education is not only physical development but also to equip learners with knowledge, skills, capacities, values, and the enthusiasm to maintain and carry on a healthy lifestyle. It promotes physical fitness, develops motor skills and the understanding of rules, concepts and strategies of playing games and sports. Students learn to either work as part of a team, or as individuals in a wide variety of competitive activities. The main objectives of physical education are to:

- develop motor abilities like strength, speed, endurance, coordination, flexibility, agility and balance, as they are important aspects for good performance in different games and sports.
- develop techniques and tactics involved in organised physical activities, games and sports.
- acquire knowledge about human body as its functioning is influenced by physical activities.
- understand the process of growth and development as participation in physical activities has positive relationship with it.
- develop socio-psychological aspects like control of emotions, balanced behaviour, development of leadership and followership qualities and team spirit through participation in games and sports.
- develop positive health related fitness habits which can be practised lifelong to prevent degenerative diseases.

3.4 Components of Human Kinetics

Physical education has evolved as a multi-disciplinary subject over time and its scope is not confined to physical fitness and knowing the rules of games and sports. It includes many topics which belong to other subjects like science, biology, genetics, psychology and sociology. It is possible that all the contents that constitute the scope of physical education may not find a place in the syllabus meant for school education. However, it contains all the content areas as stated below.

Games and Sports as a Cultural Heritage

The games and sports activities that you play today have a strong linkage to our culture. Sports activities that dominate any region are embedded in the cultural milieu. Some of the sports that reflect the culture of a region of our country are *Kho-Kho*, *Kabbadi*, Archery, Lezim, Wrestling and so on. Our ancestors survived on hunting with the use of throwing stones as well as bows and arrows, running, jumping, etc. were used for survival and recreation. Later when man became more civilised, it took the shape of competitive sports like athletics, wrestling, and archery among others. By this, we can see a strong bonding of our culture in the present evolution of games and sports.

Mechanical Aspects in Physical Education

Physical education takes into consideration the mechanical aspects of various physical activities being performed. You are aware that the concepts regarding laws of motion, lever, force and its generation, maintenance of equilibrium, centre of gravity and its impact on

movements, the law of acceleration, speed and its development form important content areas of physical education. You will also study these aspects in your science textbook.

Biological Contents in Physical Education

The contents are drawn from the biological sciences take into consideration the areas of heredity and environment, growth and development, organs and systems, understanding of joints classification, and possible movements around these joints. In addition, muscles and their properties, the effect of exercise on various systems of the body (like circulatory, respiratory, muscular, digestive, and skeletal systems) are also linked to physical activities.

Health Education and Wellness Contents in Physical Education

Physical education includes content related to the area of health education through understanding the concept of hygiene, knowledge about various communicable and non-communicable diseases, problems relating to health and their prevention, proper nutrition and a balanced diet. Community health, school health service programme, assessment of health status, prevention, safety and first aid for common injuries are also included in the scope of physical education.

Psycho-social Content of Physical Education

Psycho-social aspect of physical education extends to the study of areas regarding individual differences, personality development, learning of various skills, motivation and its techniques, anxiety management, ethical and social values, group dynamics, cooperation, cohesiveness and learning. It also focuses on emotional development, relationships with peer/parents and others, self-concept, and self-esteem.

Talent Identification and Training Content in Physical Education

Physical education includes contents concerning talent identification, development of components concerning specific sport, understanding of various types of activities like aerobic, anaerobic, rhythmic and calisthenics. Training programmes, learning and perfection of various movements, sports skills, techniques and tactical patterns, warming upload adaptation, recovery and cooling down are also a part of physical education.

4.0 CONCLUSION

Having completed reading through this unit and making reference to links and text provided, it is assumed that you have learned and acquired essential knowledge on physical Health Education which is required to have in the unit. The questions you answered satisfactorily will indicate to you the amount of learning you have achieved in the unit. You are encouraged to read further to widen your knowledge of the concept of the unit.

5.0 SUMMARY

In this unit, you have learnt the application of computer in the teaching and learning process of human kinetics, the advantages of computer in human kinetics education and also, the challenges of the application of computer in human kinetics education. The assessment and self-assessment exercise have been provided to enable you to understand your rating of the understanding and learning you achieved reading this material in this unit. Online links have also been provided to broaden your understanding of the learning required in this unit.

6.0 TUTOR-MARKED ASSIGNMENT

1. Mention at least five objectives of Human kinetics education.
2. State at least five pioneers of human kinetics education.
3. Mention five components or themes of human kinetics education.

7.0 REFERENCES/FURTHER READING

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UNIT 4 THE APPLICATION OF COMPUTER IN HUMAN KINETICS EDUCATION

CONTENTS

1.0 Introduction
2.0 Intended Learning Outcomes (ILOs)
3.0 Main Content
    3.1 Application of Computer to Human Kinetics Education
    3.2 Application of computers in research
    3.3 Application of computers in motor learning and control
    3.4 Application in the field of exercise physiology
        3.4.1 Exercise physiology research
    3.5 Application in the field of bio-mechanics
    3.6 Application of computers in sports psychology
    3.7 Need for Computers in Human Kinetics
    3.8 Role of computer and Information Communication Technology in the achievement of the objectives of Human Kinetics
    3.9 Computer Applications and Devices related to Human Kinetics
4.0 Conclusion
5.0 Summary
6.0 Tutor-Marked Assignment
7.0 Reference/Further Reading

1.0 INTRODUCTION

Computer use in Human Kinetics goes beyond the mere use of the popular computer device. It is rather the utilisation of the Information and communication technology because it also compels us to use some measurement and evaluation electronic devices, some audio-visual aids for the subject's and teacher's performance evaluation or even some sequences allowing us to organise and objectively assess the final results. The quick technological progresses have also been integrated into the physical education (PE) lesson to the point that nowadays they seem to threaten the rudimentary education tools.

2.0 INTENDED LEARNING OUTCOMES (ILOS)

By the end of this unit, you will be able to:

- link the relevance of Computer to Human Kinetics education and as well state some computer devices that can be used in Human Kinetics Education

- discuss the application of computer to Human Kinetics Education
- discuss the application of computers in research
- discuss the application of computers in motor learning and control
- discuss the application in the field of exercise physiology.

3.0 MAIN CONTENT

3.1 Application of Computer to Human Kinetics Education

The creation of the modern computer has changed the face of the planet. Today there are more devices fitted with a microchip than there are human beings. The word 'computer' comes from the word compute which means 'to calculate'. Computers were developed from calculators as the need arose for more complex and scientific calculations. A computer is a machine that had been designed by people to carry out some numerical and mathematical operations. Technically, a computer is a programmable machine. This means it can execute a programmed list of instructions and respond to new instructions that it is given. A computer is an electronic device that manipulates information, or data. It can store, retrieve and process data. Computer in physical education is an interdisciplinary discipline that has its goal in combining the theoretical as well as practical aspects. Computer-assisted instruction provides students with an alternative to classroom settings and frees the instructor from wrote process that is better handled by the computer. Students can observe and listen to the mechanics of movements in slow motion and learn effectively with the help of a computer. Using the internet one can update the recent technological improvement in sports training, changes in rules, download the rules from the internet authorities, do research and so on. Computers have potential applications in the elementary and secondary physical education curriculum current usage is minimal when compared to other disciplines. Computers are highly useful in making wide tasks and projects including budgeting, financial statements, calculations and scheduling in physical education programs. Using computers not only enhances the quality of documentation but also saves time and operational expenses for sports organisations.

3.2 Application of computers in research

The computer is a required tool for effectiveness and efficiency in research writing particularly in the following areas:

- Literature searching
- Test administration
- Data analysis

- Result analysis
- General assist

3.3 Application of computers in motor learning and control

During practical classes, the computer can aid the teaching and acquisition of knowledge in the following areas:

- Reaction and Movement time
- Time-on-target scores
- Movement distance and location
- Neuromuscular Neuro-Physiological variable
- Software application

3.4 Application in the field of exercise physiology

3.4.1 Exercise physiology research

- The computer helps to monitor minute-by-minute changes in lactic acid levels in muscular tissue.
- To determine the blood pressure, heart rate, pulse rate, analog to digital converter is used by installing it into the computer.
- Multiple measures can be recorded simultaneously from subjects.
- It is also used to calculate the body fat percentage based on skin fold.

▪ Using computers in measuring variables

Determination of maximum oxygen consumption

- Maximum oxygen consumption is the best indicator of cardiovascular fitness.
- This procedure is used to read gas analysers and calculate percentage of the relevant gases and read the volume meters for flow rates.
- Auxiliary function may occupy a waste of space, time, etc. while using the computer keyboard alone does the same function rapidly including the barometric pressure determination**.**

Fitness prescription

- The fitness professional may prescribe the fitness programme with commercially available software which helps to accomplish the task quickly.

- After installing the software programme to the system, the result of the physical fitness test of subjects may be entered into the system and compared with the programme.
- Then the appropriate exercise shall be fixed according to the individual's result.

Body composition

- Body composition software programme is designed for use in health enhancement programmes offered through medical clinics.
- It allows the entry of demographic information and also provides a selection of body composition methods.

3.5 Application in the field of biomechanics

- Teaching aids
- Film analysis
- Force measurement
- Force plates
- Using computers with Isokinetic dynameters

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- Self-assessment
- Self-talks
- Concentration tasks

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- Computers are needed to design programs in the field of Human Kinetics Education
- To ease job
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Benefits of information and communication technology in sports management in Nigerian universities Information Technology is basically tools and methods used for the identification, organisation and manipulation of facts that is called data. It is today a driving force in all sectors of the economy, industries, education and indeed sports. Information Technology in sport management systems centres on the

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Furthermore, computers are tied together through the medium of the network. Today, apart from sports managers, larger enterprises use computer networks to link their operations in a common computing environment. This network has a main server that houses most of the information and database files. Sports as a physically demanding profession, should use computer to help push sporting organisations towards their goal of success.

Video preparation is a major component of professional sports. For example, many coaches, trainers and even athletes themselves review recorded competitions tapes to study someone's performance at critical parts of competition and thus learn. A boxer can review his next opponent’s fight to learn weaknesses/strength to exploit; A football coach can review the game tape to see how to improve his offensive passing/attack and improve on his game plan. Computer also allow sports professionals to store a large amount of video footage in one place as against having multiple discs or cassettes of the film; all this information could be stored in a single jump drive or laptop for easier access at short notice Statistical data storage Statistics are an important aspect of sports organisation and management. Fans, sports agents, coaches, players, and the Universities administration; all want to know exactly how well or bad they performed at any given time/year. Keeping a track record of that data by Managers/Directors of Sports is very necessary for sports management.

Internet is an interconnection of multitudes of the computer from one geographical location to another through ICT systems in other to accomplish the goal of information sharing across the globe. It is important to note that computer networks need not be limited to a single site or facility. Wide Area Network can little together University Sports administrators located throughout the Federation. For example, the zonal offices of a national sports governing body such as the Nigerian University Games Association can be linked together regardless of their geographic location. The operatives so linked can share information cheaply and effectively through the medium of e-mail. The computer network which the public is most familiar with is the internet and the worldwide web, known as the “web” and it is what most people think of when we say “the internet”. This medium has exploded and today there are more than 15 million web addresses called Uniform Resources Locators (URLs) with many individual pages on their sites). Most significant at this juncture is the marketing and commerce application of the web. For example, there is virtually no professional sports team in the United State today that do not have a website; most of them are linked together through networks of websites coordinated through the various

leagues/offices. How tight these linkages are, is driven in part by agreement between the league teams on activities such as revenue sharing for media broadcasting rights and merchandise sales. The web is currently used by professional sports teams in so many ways. In Montreal where there are no English language radio broadcasts, for their Expos professional baseball team, the fans who want to hear the play by play in the English language can only do so by calling up the team's website and listening to it coming across as an audio feed. Many clubs to require their players to have e-mail addresses as a means to interact with both the administrators and fans. This is in existence today in Nigerian University Games Association Council (NUGA).

E-Commerce: The web can change the sale and distribution of sporting equipment. Facilities that are central in the administration/running of sports programme in Universities. The relative cost of sports equipment can be an issue for the profession, particularly in terms of trying to broaden the appeal of sport to the greatest number of participants. It holds the potential for containing. Costs for Sports Equipment: In the traditional model of manufacture and distribution through a sporting goods store, it is not uncommon for a tennis racquet which cost N4, 000 to manufacture to be marked up as much as 300 to 400% to as much as 160% as it moves through various wholesalers and retailers in the distribution chain to a tennis player. With an e-commerce arrangement whereby the manufacturer can reach the buyer directly without going through middlemen, the mark–up in distribution can be reduced to as little as 50% of the traditional retail price resulting in a sale price to the end user of about ₦8,000. Very simply, the more middlemen in a distribution chain, the greater the benefit derived to the end user from using e-commerce distribution. To set up information technology for sports management in Universities, the following items are required – Computer; internet connectivity; file servers; software to create database e.g oracle computer experts; computer analysis and programmes amongst others

3.9 Computer Applications and Devices related to Human Kinetics

Computer applications were first introduced according to history in human kinetics and sports in the mid of the ' 60s, various ideas, concepts and experimental methods from other scientific fields were gathered adopted in the development of applications related to human Kinetics Education. The mainframe computers available at that time were utilised in rendering Statistical analyses and numerical calculations of biomechanical investigations. The computer programs developed for PHE as published in the very first edition of the Journal of Biomechanics may serve as an example. In the biomechanical literature, numerous examples can be found propagating the use of computers since then.

Measuring devices acquiring biomechanical data (reaction forces, EMG data, etc.) using analog-digital converters and optoelectronic systems for human motion analysis have been developed for decades. Moreover, modem computer technology was of crucial importance for solving numerical problems in biomechanical modelling and simulation
Another early use of computers in sports originates from the notational analysis. Rudimentary forms of notating or coding events in games can be found for centuries Downey(1973) presented a complex notational system for lawn tennis matches. Some of the computer applications and devices used in sport are:

i. Microsoft Excel
ii. Statistics Package for Social Sciences(SPSS)
iii. Digital weighing scale
iv. Digital scoring board
v. Digital sphygmomanometer.

SELF-ASSESSMENT EXERCISE(S)

i. List and discuss five ways through which computer can be applied in human kinetics education.

4.0 CONCLUSION

Having read this topic and completed the assessment and self-assessment test it is presumed that you have gained understanding of the knowledge of the application of computers in the teaching and learning process of human kinetics education

5.0 SUMMARY

In this unit, you have learnt the application of computers in the teaching and learning process of human kinetics, the advantages of computer in human kinetics education and also, the challenges of the application of computers in human kinetics education. The assessment and self-assessment exercise have been provided to enable you understand your rating of the understanding and learning you achieved reading this material in this unit. Online links have also been provided to broaden your understanding of the learning required in this Unit.

1.0 TUTOR-MARKED ASSIGNMENT

1. Mention five importance of computer in human kinetics education.
2. List three applications of computer to each of the following Human Kinetics disciplines
   (a) Exercise Physiology

(b) Research in Human Kinetics
(c) Sports Administration and Management.

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MODULE 3

UNIT 1 CONCEPT OF HEALTH EDUCATION

CONTENTS

1.0 Introduction
2.0 Intended Learning Outcome
3.0 Main Content
    3.1 Brief History of Health Education
    3.2 Meaning of Health education
    3.3 Scope of Health Education
4.0 Conclusion
5.0 Summary
6.0 Tutor-Marked Assignment
7.0 References/Further Reading

1.0 INTRODUCTION

Health education comprises consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge, and developing life skills that are conducive to individual and community health.

2.0 INTENDED LEARNING OUTCOME

By the end of this unit, you will be able to:

- explain the brief history of Health Education
- give two different definitions of Health Education
- describe the scope of Health Education.

3.0 MAIN CONTENT

3.1 Brief History of Health Education

Health education is defined as “any combination of learning experiences designed to facilitate voluntary actions conducive to health”. Although the history of health education dates back to the 19th century, it was not until the 1940s that the field began evolving as a distinct discipline. Over time, health education’s theory and practice base have broadened from focusing on one-to-one and mass media behavioural interventions to encompass responsibility for policies, systems, and environments that affect population health.

In the early 21st century, the terms health education and health promotion (i.e., the latter including an ecological approach) are often used interchangeably in the United States, while internationally health promotion is used as an overarching concept that includes health education. Health education is considered a mature profession has given that it has developed a discrete body of knowledge, defined competencies, a certification system for individuals, a code of ethics, a federal occupational classification, and recognised accreditation processes in higher education.

Health education is generally aligned with the behavioural and social sciences as one of the core dimensions of public health study and practice. Additionally, the field draws from theories and models from education, health studies, communications, and other diverse areas. The unique combination of these knowledge areas forms the basis for health education competencies. Health educators employ a core set of competencies, regardless of the diverse practice settings in which they work (i.e., schools, universities, health departments, community-based organisations, health-care settings, worksites, and international organisations).

This bibliography is organised around major areas of health education practice, such as assessing, planning, implementing, managing, and evaluating health education or health promotion programs, services, and interventions. It includes historical and philosophical foundations and development of its professionalism and ethics. The discipline embraces both qualitative and quantitative methods, community-based participatory research, health communication and social marketing principles, and policy and media advocacy to accomplish program objectives. Health educators are stalwarts in the fight for social justice and believe that the health of a population should be a priority in any society.

3.2 Meaning of health education

Health education is a social science that draws from the biological, environmental, psychological, physical and medical sciences to promote health and prevent disease, disability and premature death through education-driven voluntary behaviour change activities.

Health education can be defined as the principle by which individuals and groups of people learn to behave in a manner conducive to the promotion, maintenance, or restoration of health.

Health Education can be defined as any combination of planned learning experiences based on sound theories that provide individuals, groups, and

communities the opportunity to acquire information and the skills needed to make quality health decisions.

3.3 Scope of Health Education

The definition and scope of health education have evolved since the 1950s, particularly concerning improved understanding of behavioral and socio-ecological influences on health. The early definition of health education in Griffiths 1972 primarily emphasised the provision of learning experiences to promote voluntary changes to individual health which provides a concise overview of how the term health education and health promotion are used differently in the early 21st century in the United States versus internationally, due to historical, cultural, and political considerations.

SELF-ASSESSMENT EXERCISE

i. Write a brief history of Health Education.
ii. Define Health Education.

4.0 CONCLUSION

Having read this course and completed the assessment and self-assessment test it is assumed that you have attained understanding of the concept of Health Education.

5.0 SUMMARY

In this unit, you have learnt the concept of Health Education. The assessment and self-assessment exercise have been provided to enable you understand your own rating of the understanding and learning you achieved reading this material in this Unit. Online links have also been provided to broaden your understanding of the learning required in this Unit.

6.0 TUTOR-MARKED ASSIGNMENT

In-text questions

1. History of Health Education dates back to —.
2. Health Education is a — .
3. Scope of Health Education has evolved since – .
4. Health education provides knowledge regarding

7.0 REFERENCES/FURTHER READING

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UNIT 2 AIMS OR OBJECTIVES AND IMPORTANCE OF HEALTH EDUCATION

CONTENTS

1.0 Introduction
2.0 Intended learning outcome
3.0 Main Content
    3.1 Health Education
    3.2 Aims and objectives of Health Education
    3.3 Importance of Health Education
4.0 Conclusion
5.0 Summary
6.0 Tutor-Marked Assignment
7.0 References/Further Reading

1.0 INTRODUCTION

Health education comprises consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge, and developing life skills which are conducive to individual and community health.

2.0 INTENDED LEARNING OUTCOME

By the end of this unit, you will be able to:

- describe the scope of Health Education
- list the aims and objectives of Health Education
- list the Importance of Health Education.

3.0 MAIN CONTENT

3.1 Health Education

Health Education aims to provide knowledge and skills to empower pupils to lead healthy lifestyles and to take responsibility for the health and well-being of others and the environment. Another key aim of the programme is to provide pupils with the opportunities to develop and practice good health habits and attitudes.

The selection of activities for a balanced yet challenging PE programme is based on our students'

- Nature
- Needs
- Capabilities
- Interests.

Lower Primary

Focuses on activities that develop students' psychomotor skills, control and coordination. These will lay the foundations for further learning of more advanced psychomotor skills, sports and games.

- Fundamental Movement Skills
- Educational Gymnastics
- Dance
- Sports

Upper Primary

Focuses on further development and refinement of fundamental movements and psychomotor skills through a broad range of physical activities such as:

- Fitness and Health Management
- Sports and Games
- Athletics
- Sports
- Sports Leaders Programme

3.2 Aims and objectives of Health Education

The following are some of the main aims of health education:

a. To provide information about health and its value as a community asset: Health education aims at acquainting the etchers with the rules of health and hygiene. Functioning of precautionary measures to ward off diseases and to provide good disease-free working conditions.
b. To maintain norms of good health: The authorities should provide hygienic environment in the form of adequate ventilation proper temperature, good sanitation and all-round cleanliness. It helps the authorities to keep certain forms of health.
c. To take precautionary and preventive measures against communicable diseases: It aims to take adequate precautions against contamination and the spread of diseases. Thus, good sanitary arrangements are made. Precautionary and preventive

measures. If they are properly adopted can help in improving the health standards of society.

d. To assist the school-going children an understanding of the nature and purpose of health services and facilities: It aims at discovering physical defects and other abnormalities in the child and promoting their reduction if they are easily curable.
e. To develop and promote mental and emotional health: Mental and emotional health is also equally important along with physical health. While physical health makes a pupil fit mental and emotional health enables him to maintain an even temper and a happy disposition.
f. To develop a sense of civic responsibility: School is a miniature society Responsibility for skill health does not lie on anyone's shoulders. Even some cause of skill health has their origin in social conditions which require action on the part of community as a whole to eradicate them. It aims at realising the people to make combined efforts and work for community health.

The following is the comprehensive list of functional objectives of health education to be adopted in schools.

a. To enable the students to develop a scientific point of view of health concerning the traditional and modern concepts of health.
b. To enable the students to identify health problems and understand their role on health and to medical agencies in meeting those problems.
c. To enable the student to take interest in current events related to health.
d. To enable the students to arrive at suitable conclusions based on scientific knowledge and take action as individual members of the family and community for protecting maintaining and promoting individual and community health.
e. To enable the students to set an example of desirable health behavior.
f. To enable the student to understand the causes of the pollution of air water, soil and food as well as their ways and means of prevention.
g. To enable the students to gain sufficient knowledge of first aid.
h. To provide desirable knowledge about marriage sex and family planning to the students.
i. To help students to understand the importance of Physical training sports, games, yogic exercises as well as their relationship with health education programme.
j. They emphasise students on the bad effects of smoking and taking alcohol, etc.

k. They acquaint students with the functioning of various organisations working for the maintenance of health.
l. To help students understand how the present-day rapid development of science and technology has increased the hazards of life and health problems and also how to face and prevent them.

3.3 Importance of Health Education

1 Health education provides information to the students and the teachers about the function of the body the rule of health and hygiene and precautionary measures for keeping off diseases.
2 Health education helps in discovering physical defects of children and discovering various types of abnormalities of children.
3 Health education develops health habits like the need for fresh air, hygienic feeding and various classroom habits.
4 Health education provides knowledge regarding good health habits.
5 Health education develops better human relations between school home communities.
6 Health education provides knowledge regarding the prevention and control of various diseases.
7 Health education proving first aid training essential for everyone an emergency may comet anyone and at any time.

SELF-ASSESSMENT EXERCISE

i. What are the scopes of Health Education?

4.0 CONCLUSION

Having read this course and completed the assessment and self-assessment test it is assumed that you have attained understanding of the scope, aim/objectives and importance of Health Education.

5.0 SUMMARY

In this unit, you have learnt the scope, aim/objectives and importance of Health Education. The assessment and self-assessment exercise have been provided to enable you understand your own rating of the understanding and learning you achieved reading this material in this Unit. Online links have also been provided to broaden your understanding of the learning required in this unit.

6.0 TUTOR-MARKED ASSIGNMENT

1. State five aims and objectives of Health Education.
2. Mention five importance of Health Education.

7.0 REFERENCES/FURTHER READING

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UNIT 3 APPLICATION OF COMPUTER TO THE TEACHING AND LEARNING OF HEALTH EDUCATION

CONTENTS

1.0 Introduction
2.0 Intended learning outcome
3.0 Main Content
    3.1 Application of computer to the teaching and learning of Health Education
4.0 Conclusion
5.0 Summary
6.0 Tutor-Marked Assignment
7.0 References/Further Reading

1.0 INTRODUCTION

The computer has revolutionised the way of study in Health Education while making education smoother and quicker. It also connects us to different sources, which show us different ways to understand a particular topic or idea. In general, a computer has helped the Health Education as a subject/ course and also has changed the way we work & learn.

2.0 INTENDED LEARNING OUTCOME

By the end of this unit, you will be able to:

- explain the application of computer to the teaching and learning of Health Education
- list the importance of the application of computer to the teaching and learning of Health Education.

3.0 MAIN CONTENT

3.1 Application of computer to the teaching and learning of Health Education

1 **CLASSROOM UTILISATION OF TECHNOLOGY SPECIALISED SOFTWARE**:

The greatest value of computers may reside in the ability to provide improved support to classroom instruction, and the variety of software programs for such use continues to grow. Commercial and shareware programs are available to track grading, student athletic performance, and

fitness; conduct health assessments; provide simulations of disease; and monitor research projects, among other functions. The development of individualised software is becoming more common. The availability of hypertext, where selected words in the text of a document can be used as links to other points in a document, has made such software development much easier. A good example is the shareware package titled HPERIntern which was created to guide college students through the process of internship development and placement. Using HyperCard, a commercially available application software based on a Hypertext language, HPERIntern integrated several components from traditional classroom instruction and individual counseling. HPERIntern is a menu-based application that allows students to enter the information stream at a variety of points, rather than be forced to follow a predetermined path. This approach allows students to determine what they think is important rather than what the instructor has deemed important, reinforcing students' ability to control the learning process. The result: a reduction in the amount of classroom time and individual counseling needed for internship preparation.

2. MULTIMEDIA AND CD/ROM

Computers have integrated learning with multimedia presentations. Traditional encyclopedias and reference books have been replaced by compact discs with read-only memory (CD-ROM or CD) that contain pictures, sound, and video, as well as the standard text. In the kinesiology classroom, students can observe and listen to the mechanics of movement in slow motion and play over those parts they do not understand. In health education classrooms the growth of an embryo can be depicted as birth. Instructional topics remain traditional, but the delivery is nontraditional and allows the student to move at her/his own pace.

3. COMPUTER-ASSISTED INSTRUCTION:

Computer-assisted instruction (CAI) provides students with an alternative to classroom settings and frees the instructor from rote processes that are better handled by the computer. There are several reasons for using CAI in physical education. Among them were suggestions that CAI provides students with the "why" behind health-related fitness; it provides unlimited practice, review, and remediation; students stay actively involved, and it meets a variety of student needs. CAI, if individually developed, requires considerable time on the part of the instructor, but this is compensated for by increased learning time available in the classroom. Using CAI an instructor can develop or acquire a series of supportive and reinforcing software. For example, students in a nutrition class might participate in a CAI-based eating habits survey that provides students with information about their nutritional habits, collates data for

the entire class, and provides the teacher with a report to use as a teaching tool.

SELF-ASSESSMENT EXERCISE

i. Explain the application of the computer to the teaching and learning of Health Education.

4.0 CONCLUSION

Having read this course and completed the assessment and self-assessment test it is assumed that you have attained an understanding of the application of the computer to the teaching and learning of Health Education, and the Importance of the application of the computer to teaching and learning of Health Education.

5.0 SUMMARY

In this Unit, you have learned the application of the computer to the teaching and learning of Health Education and the Importance of the application of the computer to the teaching and learning of Health Education. The assessment and self-assessment exercise have been provided to enable you to understand your rating of the understanding and learning you achieved reading this material in this Unit. Online links have also been provided to broaden your understanding of the learning required in this Unit.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain the application of the computer to the teaching and learning of Health Education.

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UNIT 4 APPLICATION OF COMPUTER TO THE TEACHING AND LEARNING OF HEALTH EDUCATION (CONT.)

CONTENTS

1.0 Introduction
2.0 Intended learning outcome
3.0 Main Content
  3.1 Internet/World Wide Web and Health Education
  3.2 Importance of application of computer to the teaching and learning of Health Education
4.0 Conclusion
5.0 Summary
6.0 Tutor-Marked Assignment
7.0 References/Further Reading

1.0 INTRODUCTION

The computer has revolutionised the way of study in Health Education while making education smoother and quicker. It also connects us to different sources, which show us different ways to understand a particular topic or idea. In general, a computer has helped the Health Education as a subject/ course and also has changed the way we work & learn.

2.0 INTENDED LEARNING OUTCOME

By the end of this unit, you will be able to:

- explain the application of the computer to the teaching and learning of Health Education
- list the importance of the application of the computer to the teaching and learning of Health Education.

3.0 MAIN CONTENT

3.1 Internet/World Wide Web and Health Education

The expansion of the Internet (a government-sponsored electronic network) to nondefense-related uses has caused an explosion of communications. The World Wide Web (www) is that part of the Internet supporting graphics, audio, video, and hypertext links (the ability to connect from one computer site to another), as well as standard text. Access to the Internet, combined with the development of commercial

network providers (e.g., America Online, Prodigy) has allowed individuals, schools, and organisations to communicate with each other and to share information through mechanisms such as e-mail, telnet, FTP (file transfer protocol), gopher, and WWW.More recently, user-friendly navigator application software has become available for the WWW. Software such as NetWare, Netscape, and Mosaic has opened the Internet to a new and diverse marketplace. From the convenience of the classroom, a student or teacher can be using a computer and a modem, log into a variety of sites throughout the world. For example, several dozen medical schools, such as the University of Iowa and Johns Hopkins University, are now on the WWW and provide excellent information as well as videos of various human systems in operation. Students can be exposed to a video of a working heart and even create specific heart problems. Students may see a working heart with a dynamic chart that illustrates heart efficiency (amount of blood pumped per minute). By clicking on a fat-blocked heart, students watch heart efficiency drop dramatically. The students, engaged in the process now, click on the aorta to see an enlarged view of a healthy and a fat-clogged aorta. Next, the student clicks on the clogged aorta and receives a written or verbal description of how the heart got this way and its potential impact on the owner. Students can take notes and copy the pictures to a notebook that is built into the program and, when done, can download and print the notes. Many WWW sites related to sports, fitness, health, and recreation. A home page is a starting point for exploration into a given host site's resources and connections to other sites. ERIC maintains the AskERIC Virtual Library home page, which provides a gateway to ERIC information, including lesson plans and "information guides" on relevant topics. Health and recreation pages are very common. The Whole Internet Catalog offers a section on health and includes such topics as substance abuse, safer sex, mental health, and nutrition. Yahoo, organised similarly to the Whole Internet Catalog, is the source for numerous different starting points for investigation into health and recreation. The International Food Information Council Foundation is an excellent source for nutrition-related topics. Indiana University's Prevention Resource Center home page links to a broad spectrum of health-related resources from government and private sources. Bradford Woods Outdoor Center is an example of a university-supported home page related to recreation and the outdoors. Sports home pages provide information on a variety of topics related to professional and college sports. However, fitness and physical education are not well represented on the Internet.

2 **LOCAL AREA NETWORKS**: The development of local area networks (LANs) allows computer users to communicate with each other without leaving their location or without the need for a telephone conversation. A LAN provides a physical link between several personal computers and a mainframe or minicomputer

(White, 1993). In some instances, paperless classrooms have been developed using the LAN as a communications base. A paperless classroom allows the student to submit work via a computer to a central location where it is graded by the instructor and then returned to the student's electronic mailbox. The advantages of this include the speed with which one can respond, always having a copy of the students' papers, timeliness, and increased comfort with software packages that students may frequently use.

3 **COMPUTERS AND SATELLITES**: Classrooms around the world can now be connected using technologies that include computers, interactive television, satellites, and the Internet. The linking of computer technology through the use of the Internet or CD-ROM with television transmission provides a new dimension to distance education. This technique has been used to link university professors to high school teachers, physically disabled students, and other students who are all physically distant from each other.

3.2 Importance of application of the computer to the teaching and learning of Health Education

Huge and organised store of information: Vast or Immense storage is yet another main great characteristic of a computer. Students and teachers can download and store a lot of educational materials, books, presentations, lecture/ address notes, question papers, and so on on computers. Students can find many different ways to solve a certain problem given to them. Through computers, they can interact with people having the same issues and decisions.

Quick processing of data: Speed is the fundamental attribute of a computer. We can easily find information with just a single touch of a button.

Audio-visual guides in the teaching process for viable learning: One of the primary uses of computers in Health Education is access to the internet for information to search about any topic. Appealing and better introduction (presentation) of data through applications programming software like Microsoft PowerPoint to introductions for creating splendid presentations for lectures and notes.

Parents can know their wards' progress: The Computer has helped parents & guardians a lot as they can likewise know by checking every minute progress of their children through computers and the web by browsing the school's website. They can check different assessment results, attendance reports, participation in curricular and co-curricular activities, and significantly more.

Quick Communication and Correspondence: Another main advantage of using computers in the Health Education field is the improvement in the quality of the teaching-learning process and communication between students & teachers. For this, they use Microsoft PowerPoint to prepare electronic presentations about their lectures.

The computer has revolutionised the way of study in Health Education while making education smoother and quicker. It also connects us to different sources, which show us different ways to understand a particular topic or idea. In general, a computer has helped the Health Education as a subject/ course and also has changed the way we work & learn.

4.0 CONCLUSION

Having read this course and completed the assessment and self-assessment test it is assumed that you have attained understanding of the application of the computer to the teaching and learning of Health Education, and the importance of the application of the computer to the teaching and learning of Health Education.

5.0 SUMMARY

In this unit, you have learnt the application of the computer to the teaching and learning of Health Education and the Importance of the application of the computer to the teaching and learning of Health Education. The assessment and self-assessment exercise have been provided to enable you to understand your rating of the understanding and learning you achieved reading this material in this Unit. Online links have also been provided to broaden your understanding of the learning required in this Unit.

6.0 TUTOR-MARKED ASSIGNMENT

1. ____ is a menu-based application.
2. Give the full meaning of ROM?
3. Give the full meaning of LAN?

7.0 REFERENCES/FURTHER READING

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