

1.3 Formulates an Abstract model of information creation and evaluates its compliance with ICT Time:

2 periods

Learning Outcomes

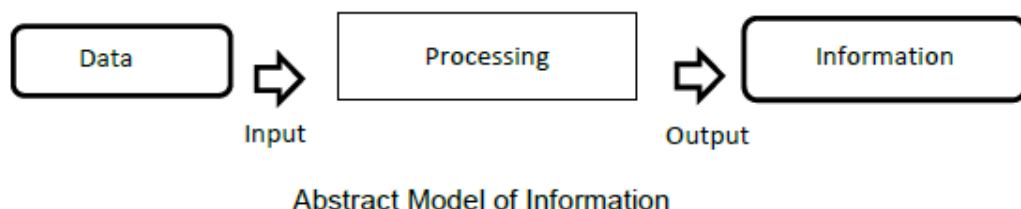
- Identifies the components of an abstract model of information creation
- Defines a system
- Analyses various systems using the system definition
- Relates the abstract model to information systems
- Matches the abstract model of information creation to the main functions of the computer
- Recognizes the role of ICT in the abstract model of information creation

What is a system?

A system can be defined as an interrelated components work together to achieve a common objective. A system is made up of inputs, processing and output. A school, a vehicle or a bicycle can be introduced as a system. A system consists of interrelated components / sub systems and system should be analyzed to identify inputs, outputs, subsystems and their individual responsibilities.

Abstract Model of Information

In an information system data input into the system is processed using processing instructions given and information is produced as output. This is called an abstract model of information.



What is a digital computer?

A computer is an electronic device, operating under the control of instructions stored in its own memory unit, which can accept and store data (e.g. data entered using a keyboard), Perform arithmetic and logical operations on that data without human intervention and (e.g. process data into information) Produce output from the processing (e.g. view information on the screen).

Functions of a digital computer?

A digital computer carries out the following five functions:

1. Takes data as input.
2. Stores the data/instructions in its memory and uses them as required.
3. Processes the data and converts it into useful information.
4. Generates the output.
5. Controls all the above four steps.

Though a computer system follows data input, processing data into information and output results, the basic functions of a computer system are well overlapped on the Abstract Model of Information.

Advantages of a computer**High Speed**

- Computer is a very fast device.
- It is capable of performing addition of very big data.
- The computer has units of speed in microsecond, nanosecond and even the picosecond.
- It can perform millions of calculations in a few seconds as compared to man who can spend many months for doing the same task.

Accuracy

- In addition to being very fast, computer are very accurate.
- The computer has performed calculations 100% error free.
- Computers perform all jobs with 100% accuracy.

Diligence/ Efficiency

- Unlike human beings, a computer is free from monotony, tiredness and lack of concentration.
- It can work continuously without creating any error and boredom.
- It can do repeated work with same speed and accuracy.

Storing & Retrieving Capability

- Memory is a very important characteristic of computers.
- The computer has much more storage capacity than human beings.
- It can store large amount of data.
- It can store any type of data such as images, videos, text, audio and any other type.

Versatility (බහුකාර්ය බව):

- A computer is a very versatile machine.
- A computer is very flexible in performing the jobs to be done.
- This machine can be used to solve the problems relating to various different fields.
- At one instant, it may be solving a complex scientific problem and the very next moment it may be playing a card game.

Reliability

- A computer is a reliable machine.
- Modern electronic components have failure free long lives.
- Computers are designed to make maintenance easy.

Automation

- Computer is a automatic machine.
- Automation means ability to perform the task automatically.
- Once a program is given to computer i.e stored in computer memory, the program and instruction can control the program execution without human interaction.

Reduction in Paper Work

- The use of computers for data processing in an organization leads to reduction in paper work and speeds up the process.
- As data in electronic files can be retrieved as and when required, the problem of maintenance of large number of files gets reduced.

Reduction in Cost

- Though the initial investment for installing a computer is high but it substantially reduces the cost of each of its transaction.

Disadvantages of a computer

No I.Q

- A computer is a machine and has no intelligence of its own to perform any task.
- Each and every instruction has to be given to computer.
- A computer cannot take any decision on its own.

Dependency

- It can perform function as instructed by user. So it is fully dependent on human being.

Environment

- The operating environment of computer should be dust free and suitable to it.

No Feeling

- Computer has no feeling or emotions.
- It cannot make Judgment based on feeling, taste, experience and knowledge unlike a human being.

References

[Teachers' Guide](#)

[Computing Essentials -2017](#)