



Information Technology : A Model Approach

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ABSTRACT

This paper highlights the concept of information technology and models of teaching. The first operational digital computer was put into use in 1944. Numbers of computers do not indicate the growth and development of the computers. Development of computers over last three decades are more spectacular. The drastic changes are taking place in the field of education and research. Effective instructional process is required for effective teaching learning process. This paper also highlights various models of teaching given by Bruce Joyce and Marsha Weil. They classified models of teaching into four families such as information processing family, behavioural models family, social models family, and personal family of models of teaching. Each and every model has some steps consisting of syntax, social system, principles of reactions, support system, instructional and nurturant effects and application. Some of the important models of teachings are advance organizer model, concept attainment model, inquiry training model, non-directive model, non-directive teaching model, classroom meeting models, contingency management model, group investigation model etc.

Keywords : Information, Model, Effective, Tehnology, Education

Information Technology : A Model Approach

A technology by which we manage and provide information to the beings (whether human beings or animal beings) is termed as information technology. The Progress of the integrated circuit which is used in computers has so profoundly affected the means by which information is stored, retrieved and manipulated. Information retrieval refers to the searching of information systems to locate items that satisfy some form of information need. These needs fall fairly clearly into three main types:

- Information to aid in the solution of a particular problem or to facilitate the making of a particular decision, background information on a subject for educational or other purposes,
- Information on new developments in a particular field of specialization.

The last is usually referred to as a "current awareness need"

In 1944 the first operational digital computer, was put into use at Harvard University In 1950 there were only twelve computers in the United States but by 1960 there were 6000, today there are more than one lakh general purpose computers in the united States.

Numbers of computers alone do not tell the entire story of the growth in computing. An individual integrated circuit on a chips, perhaps a quarters of an inch square, now can embrace more electronic elements than the most complete piece of electronic equipment that could be built in 1950 (Noyee, 1977). As a result today's computers are thousands of times faster more reliable and more cost-effective than those built earlier.

Developments in computing over the last three decades are perhaps more spectacular because of the relatively short time span within which they have occurred. The major hardware developments of the computer have focused largely on speed and memory capacity.

We can easily classified technology in two categories hardware technology and software technology. Instructions to the computer is termed as software technology. This could also

be classified into two types like "system software" (software that extends and augments the general capabilities of the hardware) and "applications software" (software that performs functions that are meaningful in the minds of the people who want to use the computer system for purposes specific to their field of work)

These changes are developing our capabilities in educational research. Computer based drill and practice, computer assisted instruction, computer managed instruction, computer assisted reasoning and problem solving business games, computer based testing, stand-alone teaching machines, stand alone electronic games and others-are possible only through the development of applications software programs. Instruction process is a broad terms that may encompass most of the activities taking place in the classroom and the school as well as many activities taking place in the home. In this process, the specific behaviour of teacher and student are included. Patterns of behaviours described in activity sequence is termed as teaching strategy.

To make the strong software technology in teaching learning process Joyce and Weil (198G) classified, different models of teaching into four families, like: Information processing Family, Personal Family, Behavioural Family and Social Family A model is a pattern of something to be made or reproduced and means of transferring a relationship or process from its actual setting to one in which it can be more conveniently studied. In the point of view of teaching, a model of teaching is a plan or pattern that can be used to shape curricula, to design instructional materials and to guide instruction in the classroom and other settings. The most important aim of models of teaching is to improve the instructional effectiveness in an interactive atmosphere and to improve or shape the curriculum.

Information Processing Family:

The models of teaching of this family are concerned with the organization, presentation verbal and non-verbal symbols in the formation of concept and solution of problem and development of social relationship and integrated personality. Thus these models are concerned with the productive thinking and development of general intellectual ability. The important models of this family are as follows:

- I. Inductive Thinking Model of Hilda Taba.
It proposes to process the information through inductive process.
- II. Scientific inquiry Model of J. Schwab
It is designed to teach the method employed by the subject for solving scientific and social problems.
- III. Concept Attainment Model of J. Bruner
It proposes to develop concept inductive reasoning i.e., developing a concept after presenting its examples and non-examples.
- IV. Advance Organizer Model of David Ausubel
It proposes to increase the capacity of learner to absorb and relate bodies of knowledge.
- V. Cognitive Growth Model of Jean Piaget
It has been designed to increase general intellectual ability specially logical reasoning.
- VI. Memory Model of Henry Lorayne
It is designed to increase the capacity to memorise concepts, facts etc.

B. Personal Family of Models of Teaching

The models of this family are intended to develop the unique personality of the learner. These models pay more attention to the emotional life of the person and also focus on helping individual to develop a productive relationship with their environment. Some of the important models of this family are as follows:

- (i) Non-Directive Teaching Model of Karl Rogers
It aims at the development of the personal self in self awareness, autonomy and self-concept.
- (ii) Synectics Model of William Gordon
It is designed to develop creativity and creative problem solving in the learner.
- (iii) Classroom Meeting Model of William Glasser

It aims at the development of a sense of responsibility and self-confidence in one's social group

C. Social Family of Models of Teaching

The models of this family are concerned with the social relationship of the individual with others in the society. These models aim at the development of social relationship, democratic processes and work productivity in the society. This is not to say however that these models restrict themselves to the development of social relationship. They are also concerned with the development of mind and the learning of academic subjects. Some of the important models of this family are as follows :

- i) Group Investigation Model of Herbert Thelen and Jon Dewey-
It aims at the development of skills for participation in democratic social processes through interaction skills and inquiry skills.
- ii) Role Playing Model of Shaftel and Shaftel
It aims at motivating students to inquire into different personal and social values.
- iii) Social Simulation Model of Seren Boocock and Harold Guitzkow
It is designed to help student to experience various social processes and to examine their own reaction to them and also acquire concepts and decision making skills.

D. Behaviour Family of Models of Teaching

The main thrust of these models is modification of the visible or overt behaviour of the learner rather than the underlying psychological structure and unobservable behaviour. The main psychological bases of these models are stimulus control and reinforcement as put forward in B.F. Skinner's theory of operant conditioning and Bandura's theory of social learning. The common characteristics of these models are that they break down the learning task into series of small sequences of behaviour. Each behaviour is so designed that success is ensured; the learner actively responds to the situation to the problematic situation and gets reinforcement and feedback.

Some of the important models of this family are as follows :

- i) Contingency Management Model of B.F. Skinner
It proposes to teach facts, concepts, and skills.
- ii) Self Control Model of B.F. Skinner
It is designed to develop social behaviour and social skills.
- iii) Stress Reduction Model of Rimm and Masters
It aims at reduction of stress and anxiety in social situation and their substitution by relaxation.
- iv) Desensitization Model of Wolpe-

It is designed to reduce anxiety through pairing deep muscles relaxation with imaginative scenes that the student had said cause him or her to feel tense.

The above mentioned models under different families of models of teaching aim at the development of different aspects of human personality that the social, personal, informational and behavioural. Since education is meant for all round development of child's personality, no single model can be selected for his or her development. All of them will have to be employed according to the requirements of the situation, that is, if some information is to be given, models of the first family would be required; if creativity is to be developed in the child, synectic model would be needed; if objective is to eliminate anxiety and stress, Desensitization model of Wolpe would be needed, and if the objective is the development of the social skill then model like Group Investigation Model of Herbert Thelen would be required.

The Selection of model also can be dependent on curriculum requirement, for example a biology teacher may need the Inductive Model of Hilda Taba and concept Attainment Model of Bruner and social studies teacher who proposes to teach about values would need Role Playing Model of Fannie Shaftel and George Shaftel, which motivates to inquire into personal and social values. Some situation would require an application of a combination of model, that in social studies class, the teacher may have Inductive Thinking Model to help children master-map-skills and Group Investigation Model for criticizing social issues.

Components of Models of Teaching:

The Model of teaching consists of the following components;

- i) Syntax
It describes the phases of the model. Each model has different strategies.
- ii) Social system
It describes the students and teachers roles and relationships and the kind of norms that are encouraged.
- iii) Principles of Reaction
It explains the procedure in which the teacher deals with the reactions of the students.
- iv) Support System
It deals with the use of other teaching aids, human skills and capacities and technical facilities.
- v) Instructional and Nurturant Effect
It describes the direct and implicit results of instructions.
- vi) Application

It deals with the further applicability of the model for different curriculum and classes.

In India some of the Universities, have introduced 'Models of Teaching' as one of the subject in teacher education course like Devi Ahilya Vishwa Vidhyalaya Indore and Jamia Millia Islamia New Delhi and in Aligarh Muslim University as a part of the Subject. But it is an urgent need to make this area as a compulsory subject in teacher education course throughout the world to make the classroom teaching learning process more effective and applicable and behavioural objectives could be achieved easily in terms of cognitive, affective and psychomotor Domains at different level of schooling.

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