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Resource Services by Libraries: Programmed Instructional Approach

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Abstract

This paper goes with the need of programmed instructional materials in the Library and Informatics Centres of Schools and Higher Education institutions through which the self -learning on a specific content could be enabled. It describes the characteristics of Programmed learning materials, types, Structure and difference between its types. By explaining this, the reader will understand the ground nature and need of the programmed learning or instructional materials to be prepared and placed in the Libraries and Information Centres of Academic institutions.

Key Words: *Programmed Learning, Programmed Instruction, Linear, Branching*

Introduction

The intellectual weightages of an individual is determined through the number of books read by him. In present days, the libraries are the temple for any knowledge reference visually or virtually through its different kinds like books, e-references, magazines, abstracts and Learning Softwares. Here we are going to discuss the use of library for the school academic consumers on specific topics. Even though the Learning softwares are available all through the market, the costs of these softwares are not affordable. The future libraries may think of availing the programmed instructional materials on specific domains for the benefit of the students' community.

Programmed Instruction

Programmed learning is a systematic, bit by bit, self-instructional programme aimed to guarantee the learning of stated behavior. Programmed learning is the prime application of laboratory technique utilized in the learning process to the practical struggles of education.

Characteristics

The following are the characteristics of the programmed learning

a) The content is broken into small step and each step is presented in several sentences, each step is called a *frame.*

b) The frames are arranged logically with the rationally of concept formation

c) Most of the frames have a need that the learner makes some kind of responses like answering a question, an activity to demonstrate the better understanding of the material.

d) The student is provided with instant confirmation of the right answers (i.e.) the learner is given immediate reinforcement.

e) If he is correct, his response is reinforced and in the case of wrong, he may correct himself by receiving the correct answer.

f) It is the interaction between the taught and learning material which is insisted in programmed learning. Here, the learner is active to learn and respond.

Principles

The following are the principles of the programmed instruction and learning materials

- ***Principle of Small steps:*** The subject matter is broken down down into a sequence of miniature step. A student is able to take a step at a time. He has to go through a small step by being active.
- ***Principle of Active responding:*** Programmed learning is based on the rule of active response. A student learns better, if he actively participates in the lesson and he learns best if he is actively responding during learning.
- ***Principle of Immediate confirmation:*** The student learns the best if this confirm his response immediately. The confirmation reinforces the learner.
- ***Principle of Self-pacing:*** In programmed learning each student proceeds at his own learning momentum. A few students naturally learn rapidly or a few may learn slowly than others. This is based on the principle of individual differences in learning.
- ***Principle of Student evaluation or Student testing:*** It helps the students to learn and understand the material given in each frame. The aim of this arrangement is not to test the student but to improve the quality of programmed materials through checking the number of errors at each step.

Types

- Linear Programming
- Branching Programming

Linear Programming/ Skinnerian Programming

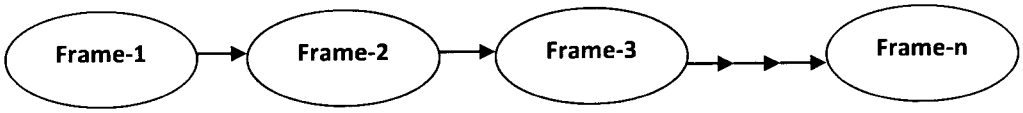
a) This was developed and used by B.F Skinner and his associates (1954).

b) In this type of programme, every learner begins from the initial frame and ends at the terminal frame going through the same sequence.

c) Every student must undergo each and every frame in a straight line fashion-hence it is called as a linear programme.

d) It is also called single track programme.

Structure of Linear Programme



Characteristics of Linear Programming

The following are the characteristics of Linear Programming

a) A linear programme is a single path programme.

b) In this programme, learning material is framed into a series of single step (frames).

c) Every learner follows the identical path in a linear programme.

d) In a linear programme, the learner is presented a small programme and a small quantity of information.

e) The sequence of steps remains unchanged.

f) The learner is expected to deliver his own answer to each question.

g) The learner is expected to act in response actively to each step.

h) The responses of the learner get immediate reinforcement.

i) Linear programme provides learning opportunity according to one's own speed.

j) It moves slowly but a steadily in leading a learner from entry to terminal behavior.

k) In a linear programme, the programmer manages the response of the learner.

l) In a linear programming, the linear learners by avoiding the error.

m) Immediate knowledge of results acts as a great motivator and release anxiety and tension.

Branching Programming

The following are the characteristics of Branching Programming

a) Branching programme was developed by Norman. A Crowder, hence it is also called as Crowderian Programme (1954).

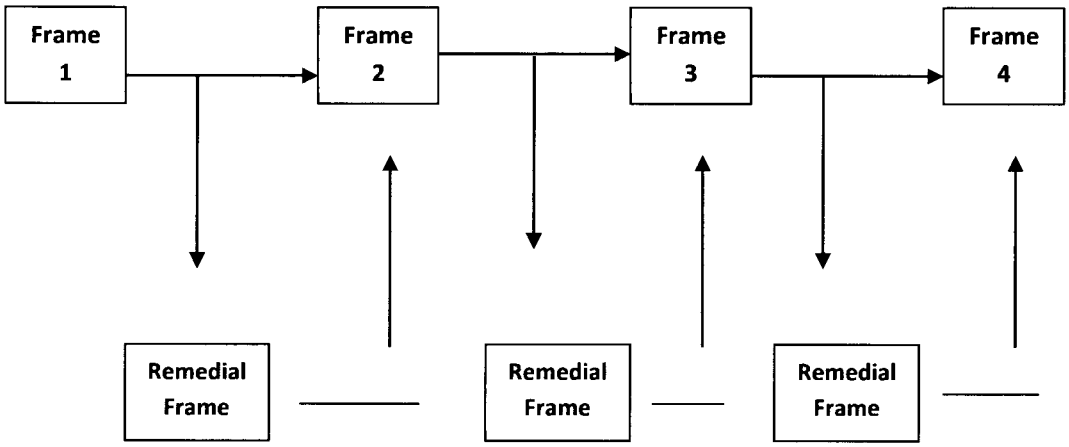
b) In comparison to linear programming the frame size and amount of information given is more and is followed by multiple choice type of question.

c) Out of the choices, only one answer is correct.

d) If the learner chooses the correct answer he is educated of the correctness of the answer and is motivated to proceed to the next frame along the main path of learning of the programming.

e) If the answer is wrong the learner is informed that the reason for wrong answer and he/she either can return to the main path or he/she is routed back to the original frame to re-attempt along a remedial frame till he selects the right answer.

f) In a branching programme, does not follow the same route. Rather the route depends on the response made but the learner. Thus learners branch acc. to their responses.



DIFFERENCE BETWEEN LINEAR AND BRANCHING PROGRAMME

The following table explains the difference between the linear and branching programming

Aspect	Linear Programme	Branching Programme
1.Propenet	B.F Skinner(1954)	Norman A. Crowder (1954)
2.Learning theory	Operant conditioning based on response centered approach	Configuration theories based on learning i.e. Stimulus centered approach
3.Principles	Five fundamental principles: Small steps, Active responding, Immediate confirmation, Self pacing & Student testing.	Three fundamental principles: Exposition, Diagnosis, Remediation.
4.Application	Modification of behavior	Remedial to the difficulties of the learner.
5.Frame size	Small steps-1 or 2 sentences	Large step-one or two paragraphs /one page.
6.Number of steps	Large	Small

7.Response	Constructed response-controlled by programmer (fill up the blanks type)	Multiple choice-choosing controlled by learner.
8.Purpose of response	Fixing of learning	Measurement/ Diagnosis of learning.
9.Reinforcement	Confirmation of correctness of response- wrong response is ignored.	Correct response is confirmed and approved and wrong response is remedied.
10. Utility and appropriateness	i) Lower classes. ii) Knowledge & understanding objectives. iii) Normal & less intelligent students.	i) Higher classes. ii) Higher order teaching objectives i.e. analysis, problem solving etc. iii) Talented & creative pupils.

Conclusion

The programmed instructional materials are topic specific learning domains for the benefit of the students which could be prepared by any teachers for self learning. Availing these materials and networking teachers to prepare these materials would help the learners to study the content independently without the barriers of time, space and cost.

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