



Programmed Learning or Programmed Instruction

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K.K. Chauhan



Introduction

- In 1920, **Sydney L. Presse** (Psychologist in Ohio State University, America) developed a **teaching machine** by which a series of **questions is presented in front of students and they got the information whether their answer is right or wrong immediately** after answering the question.
- By getting the knowledge of their **progress, students doubles their effort** to reach their fixed goals by getting inspired with the **effective manner**.
- **After** 1950, **B.F. Skinner** researched their learning and developed a **self-teaching material**. This material is named as **Programmed Learning or Programmed Instruction**.
- Its main focus is to bring desirable change in the **cognitive domain** of the learner's behavior.

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- Programmed instruction can be delivered through **various media, including printed textbooks, audio recordings, and computer programs.**
 - Historically, programmed instruction was often presented in the **form of printed materials with blank spaces or multiple-choice questions** for learners to fill in or choose from.
 - With advancements in technology, **computer-based programs and software have become common platforms** for delivering programmed instruction.



First Screen

Bobby _____ up the flute and began to _____ into it to make _____.

ran

look

music

picked

jump

picture

tossed

blow

play

Second Screen

Bobby picked up the flute and began to blow into it to make play.

ran

look

music

picked

jump

picture

tossed

blow

play

Third Screen

Bobby picked up the flute and began to blow into it to make play.

music

picture

play



DEFINITIONS

- “Programmed learning refers to the arrangement of instructional material in progressive sequences” -**Harold W. Bernard.**
- “Programmed learning is a systematic, step by step, self-instructional programme aimed to ensure the learning of stated behavior” -**Edger Dale.**
- “Programmed learning is the first application of laboratory technique utilized in the study of the learning process to the practical problems of education” -**Skinner.**

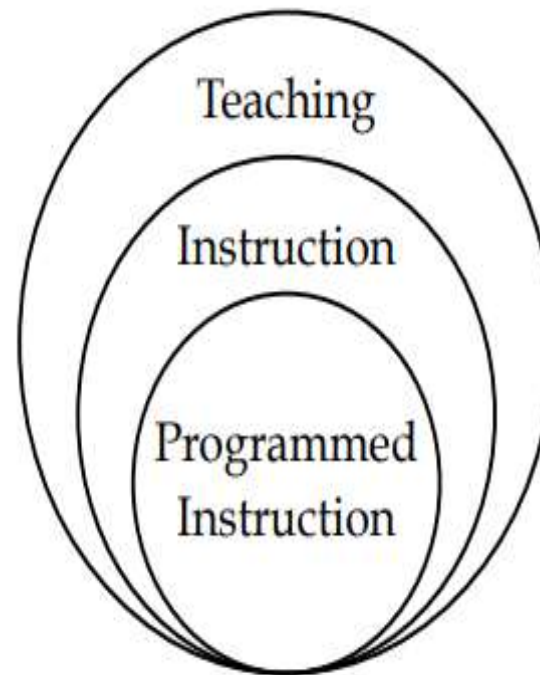
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- **Smith and Moore (1962):** Programmed instruction is the process of arranging the material to be learned into a series of sequential steps, usually it **moves the students from a familiar background into a complex** and new set of concepts, principles and understanding.
 - **Leith (1966):** Programmed is a sequence of **small steps of instructional material (called frames)**, most of which require a response to be made by completing a blank space in a sentence. To ensure that expected responses are given, a system of queuing is applied and each response is verified by the provision of immediate knowledge of result.
 - **Susan Markle (1969):** It is a method of designing a reproducible sequence of instrumental events to produce a measurable and consistent effect on the behaviour of each and every acceptable student.
 - **Espich and Williams (1967):** Programmed instruction is a planned sequence of experiences, leading to proficiency in terms of stimulus responses relationship, that have proven to be effective.



Goal of Programmed Instruction

- The underlying goal of programmed instruction is to facilitate **active engagement, self-pacing, and individualized learning**.
- It allows learners to progress at their **own pace, receive immediate feedback, and reinforce their understanding** of the material.
- Programmed instruction can be particularly effective for **teaching factual knowledge, procedural skills, and step-by-step processes**.

Teaching, Instruction and Programmed Instruction



→ Teaching, Instruction and Programmed Instruction



Programmed Learning and Programmed Instruction

- ✓ Programmed Instruction and Programmed learning are considered as same of each other in education sector.
- ✓ **British teachers** like to use the **Programmed Learning** Phase while **American teachers** like to use the **Programmed Instruction** phase.

Programmed Instruction and Educational Technology

- ✓ **Educational technology** both the **hardware approach** and **software approach** are learned in this approach.
- ✓ **Programmed Instruction** is a **soft approach** which tries to bring desired changes in the students behaviour, so it **only a part of educational technology**.



Principles of Programmed Learning

- ✓ 1. Principle of Behaviour analysis
- ✓ 2. Principle of Small fractions
- ✓ 3. Principle of active participation
- ✓ 4. Principle of immediate feedback
- ✓ 5. Principle of Self pacing
- ✓ 6. Principle of legality of the content
- ✓ 7. Principle of knowledge and progress of students tested
- ✓ 8. Principle of student responses



Characteristics of Programmed Learning Material

- Programmed Instruction is **individual** and **only person learns at a time**.
- The learning material is divided into **small units**.
- Then small units are **sequenced**.
- Programmed material, every phase is **connected logical manner**.
- Learner has to make **active responses**.
- Information is immediately provided to students that is **right or wrong**.
Thus they receive the **feedback**.
- Students get the opportunity to learn at their **own pace**.
- Programmed material fully **verified and liable**.

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- Specification of student's **entering behaviour** are done in it.
 - In these behaviour, **level of language understanding** and **simplification**, **level of achievement**, **feedback** and **mental level** are taken into account.
 - **Stimulus, Responses and Reinforcement** – these element remain **active** in it.
 - It has **comparatively low error rate and fault rate**.
 - As **feedback is provided immediately**, so true responses are enforced to students which helps in effective teaching.
 - Every response of student provides him a **new knowledge**.
 - While learning instructional material, **students have more readiness and curiosity** due to which they understand very rapidly.
 - Instruction material is **evaluated through the responses** of students and it is improved and modified according to that.
 - Programmed Instruction also organizes that **aiding instruction to removing the weakness and difficulties of students**.
 - Programmed Instruction system is based on the **principles Psychological learning**.



Application of Programmed Instruction in Education

It is used not only in education but also in other fields. In the field of education, it is used in the following areas-

- ✓ For the education of special types of children.
- ✓ In the field of distance and adult education.
- ✓ In the field of mass education and self-education.
- ✓ In the field of teaching-training.
- ✓ In the field of guidance and remedial training.
- ✓ In the field of correspondence education.
- ✓ In preparing radio industrial lessons.
- ✓ In the field of non-formal and continuing education.



Steps in Programming:

1. Topic Selection:

The programmes should select the **most familiar topic**; otherwise he has to take the **help of a subject expert**.

2. Content Outline:

After topic selection, its **outline may be prepared which cover all the materials**, one plans, to teach. For this programme one has to refer to examine relevant books and materials.

3. Instructional Objectives:

Instructional **Objectives must be formulated** which involve both task description and task analysis. The former is the **description of terminal behaviours** which the learner is **expected to achieve** and the latter is the series of component behaviours that he is required to acquire in the process of achieving terminal behaviour.

4. Entry Skill/Behavior:

The learner should have some **pre-requisite ability and skill** to understand properly the new programme. This background experience is called the entry skill and a **suitable programme cannot be prepared without proper assessment** of the entry skill.



5. Presentation of the Material:

Suitable format is to be decided for **presenting the material from the educational point of view**. Then the programmed material should be presented in a sequence of frames arranged as steps **towards terminal behaviour**.

6. Student Participation:

On analysis of the terminal behaviour one will find the **critical responses of the students**.

Using Prompts • Prompts are provided in the programme frame to guide the student to the correct response. Prompts are supplementary stimuli; they are added to a frame to make the frame easier but are not sufficient in themselves to produce the responses.

7. Terminal Behaviour Test:

The effect of programme can be ascertained by administering the terminal behaviour test. It is also known as **performance assessment**. This provides **feedback to the programme and shows the effectiveness of the instructional materials**.

8. Revision:

Lastly the **programme may be revised** on the basis of feedback. The instructional materials **may be edited and modified** according to the needs and requirements of the target audience.

Programmed Instruction and Traditional Method of Teaching

Programmed Instruction	Traditional Method of Teaching
1. This instruction is individual. 2. In this method, material is presented one by one (in a logical manner). 3. Immediate feedback is provided to students. 4. Objectives are defined clearly. In other words educational objectives are written in behavioural dictionary. 5. Teacher prepares instructional material with complete attention, purity and precautions. 6. Students have active collaboration in learning. 7. Efforts are made to improve programmed instruction on the basis of the evaluation of students responses. 8. Psychological learning and teaching principles are used. 9. It is student-centred. 10. Special attention is given to individual diversity.	1. Generally it is a group technology. 2. In this, complete material is presented in a collective manner. 3. Immediate feedback is not provided to students. 4. Since education objective have wide format so neither they are clearly defined nor can be used properly in communication. 5. Very less preparation occurs. 6. Mostly, students remain inactive. 7. It is difficult to improve or change traditional teaching method on the basis of students responses. 8. It is not possible to use teaching principles completely. 9. It can be student-centred or subject-centred. 10. It is not possible to give attention to individual diversity.

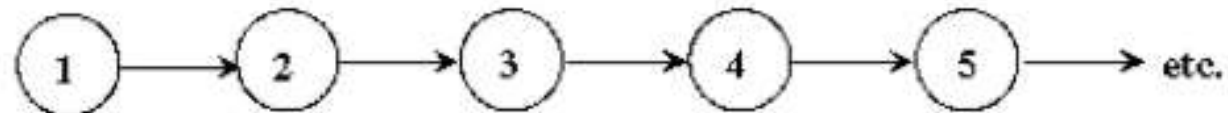


Types of Programmed Instruction:

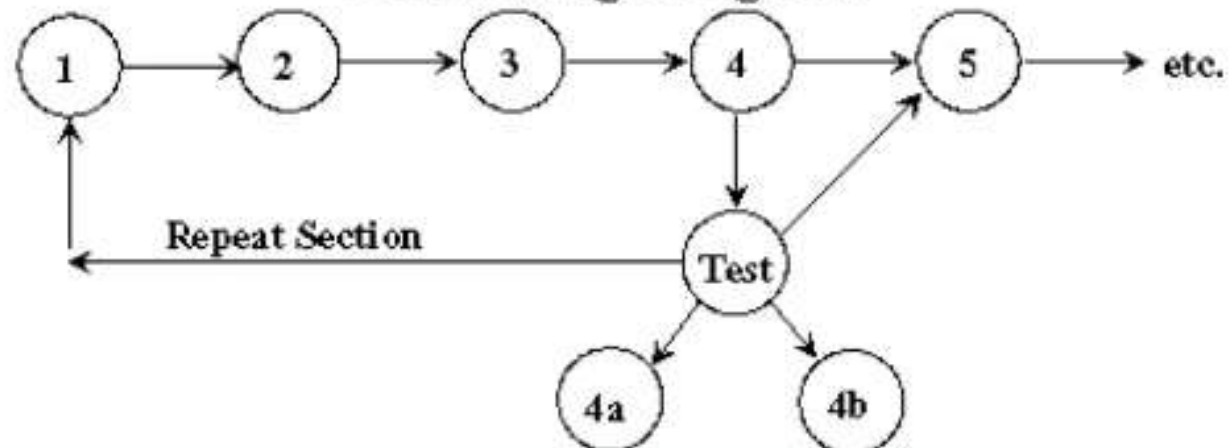
- **Linear Programming.** It is being used for teaching all subjects. In programmed teaching strategy progressive **chain elements are presented. Last step is at the mastery level.** It is based on five fundamental principles.
 - I. Small steps
 - II. Active responding
 - III. Immediate confirmation/feedback
 - IV. Self-pace
 - V. Student testing
- **Branching Programming.** It is generally used in mechanical fields.
- **Mathetics.** Retrogressive chain of elements is presented. **First step is the master level while the last step is the simplest element.**

TYPES OF PI

Linear Program



Branching Program



Programmed Instruction: Linear Programing





Introduction

- It is given by Professor **B.F. Skinner**((Burrhus Frederic Skinner) in **1954/1955**.
- The base of this programming is **psychological** and the main aim of this is to give instruction.
- It is a **highly individualized instructional strategy** for the modification of behavior.
- It is used. for instructional purposes but it can **also be employed as a mechanism of feedback device** for improving teaching efficiency.
- The **theoretical knowledge of programmed instruction** is essential to use as a feedback device for the modification of teacher behavior.
- Linear programming is also called the **Extrinsic/external programming**.

- 
- The verbal meaning of the linear program is '**Work of Straight line**'. In which students learn **entering behavior to terminal behavior** in a straight line.
 - In this, the content is present in **small steps in a systematic way**. The student reacts to each step, which is related to terminal behavior.

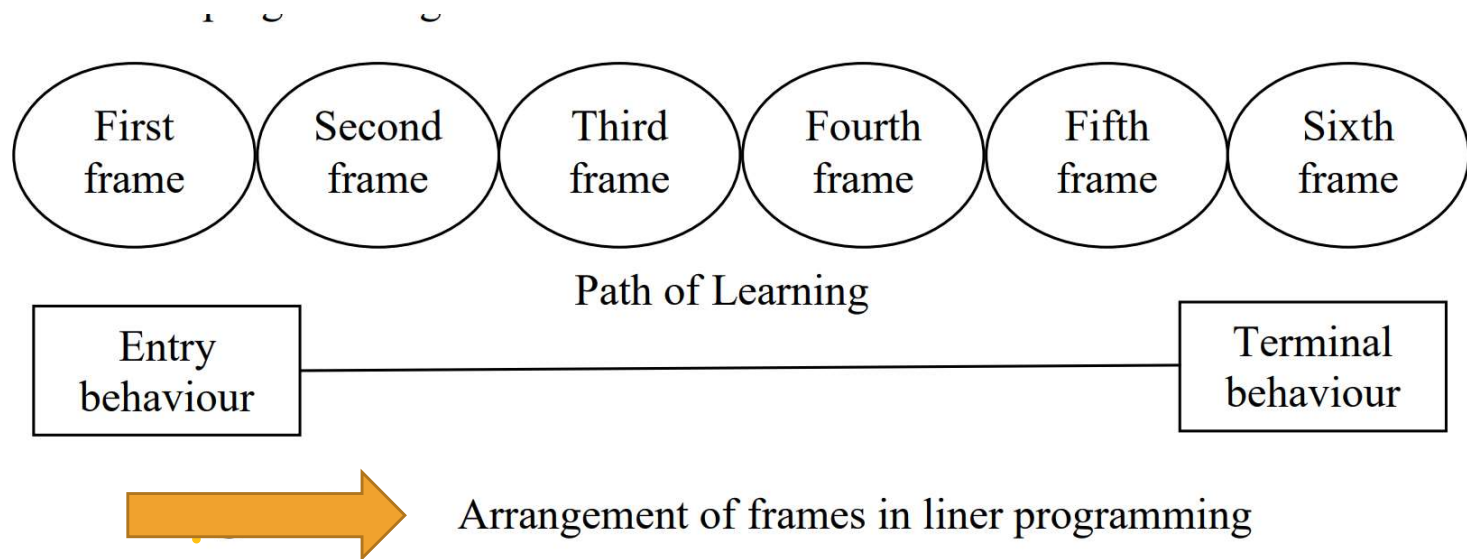
Step (1) → (2) → (3) → (4) + (5) + (6) + (7) → (End)

Entering Behaviour

Terminal Behaviour

- Each student **read frames or steps one by one** and gain knowledge. **Each response gives feedback** to the student.

Frames Arrangement in Linear Programming





Assumptions of Linear Programme

1. In this student is motivated by the correct response.
2. In this students are active in learning by doing.
3. In this no role in the remedial teaching.
4. The sequence of the content is according to teaching maxims, by which students learn more.
5. In this, the presentation of the content is in an easy and simple way or in small steps. which are helpful to more effective teaching.



Principles of Linear Programming

- **Principles of small steps:** In this subject-matter is first analysed comprehensively and then it is divided into many meaningful bits. Only one piece of information which is known as frame, is presented before the students at a time.
- **Principles of immediate confirmation:** When the student, answers the question after reading the frame, his answer is soon confirmed with the help of the key. This gives immediate feedback to the learner and get reinforcement. If the learner's answer is wrong, he is corrected by the key. This makes the learner more cautious in future and he will read the frame more carefully next time.

- 
- **Principle of active responding:** In linear programmed instruction, one frame is linked with the next frame, so that the learner is forced to answer the question of the frame and go ahead. He remains engaged in learning process.
 - **Principle of self-pacing:** In this every learner learns according to his own speed and ability. There is not any restriction in the learning process.
 - **Student testing:** Success of this programme depends on the progress and achievement of student. Teacher constantly observes and assesses the students, when they are engaged with the programmed materials. The weakness or strength of the programme can be find out through this process. For example, if there is such a frame which is difficult for all students, it will be removed from the programme.



Characteristics of Linear Programming

- In linear programming, the subject-matter is **broken into small frames**. Each frame contains **small piece of knowledge**, which is easy for learner.
- In this, one frame is connected to the next **frame in ascending difficulty order**. The answers and their **sequence are definite and predetermined**. The **behavior of students are fully controlled** along with the control of the content.
- Each student is **bound to answer every frame** for the purpose of learning. He **can not skip any frame**. When learner responds, he **immediately gets feedback** whether his response is right or wrong.
- Linear programming instructional material can be prepared and applied to any class of students. This programme is **beneficial for both weak and talented** students.
- In linear programming, **knowledge is presented in logical sequence**, thus it is more permanent in nature.
- In this learners are **reinforced here at every correct response**. Thus this programme play a special role in **shaping the behavior** of learners.



Limitations of Linear Programming

- In this order is the same for all students. Students' **individual needs are not taken into account.**
- **Creative and higher objectives are not possible.**
- This learning occurs in **controlled conditions**, so students do not have the freedom to responses.
- It's **not easy to do**. Many times after training it is **difficult to make good programming.**
- It is not possible **remedial teaching.**
- **Talented students take little interest in it.**

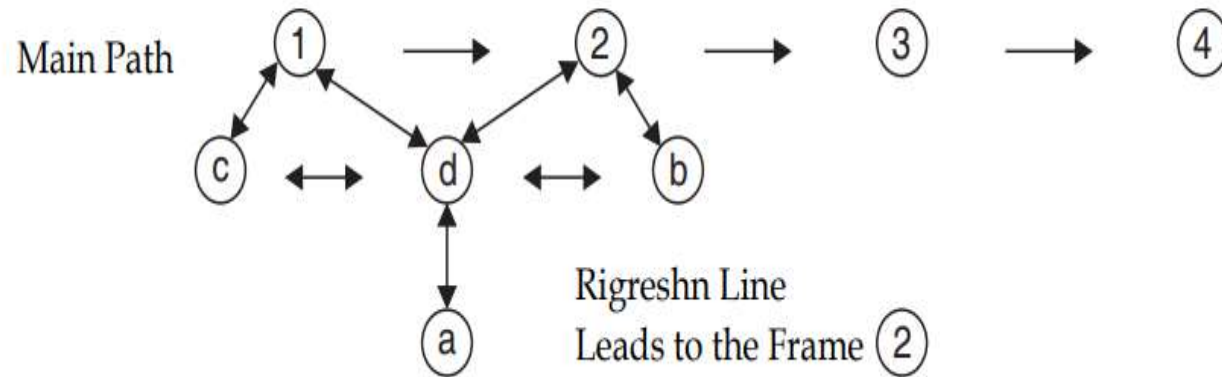
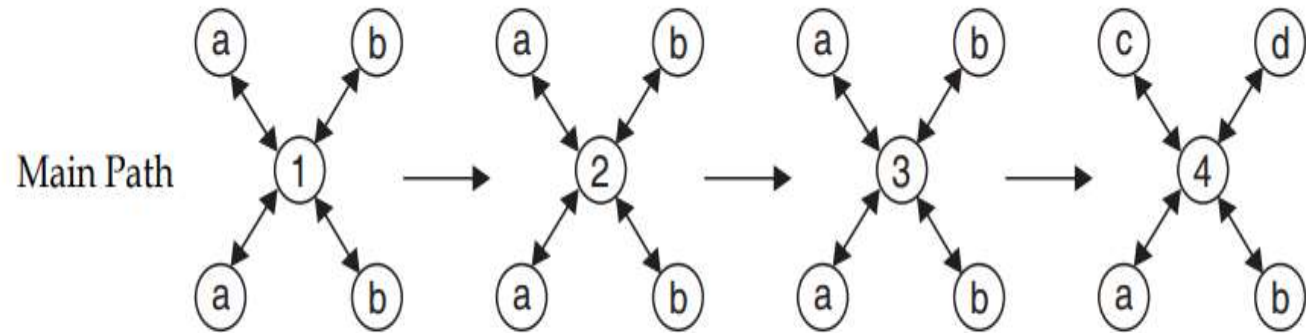
Programmed Instruction: Branching Programming



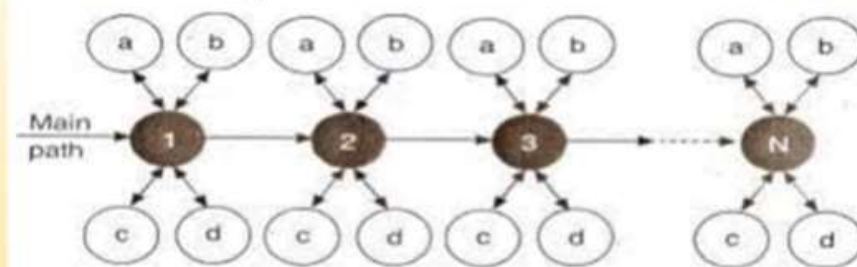


Introduction

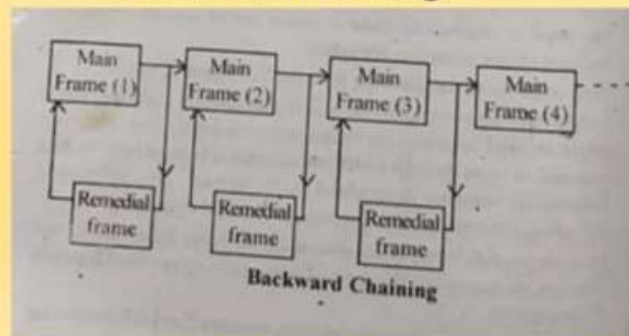
- It was developed by **Norman A. Crowder**.
- While developing this programme, he kept in mind the **individual needs, interests and attitudes** of the learners.
- **In a frame, more than one information** is given so that learners can take a decision internally **which information is as per their needs**.
- Questions which are asked on the **frame are multidimensional and of multiple choice**.
- The students answer these questions only after **free thinking and divergent deliberation**. Each **frame is divided into a number of branches**.
- In this the teacher is guided through sub-steps in order to respond the frame.
- **If the response is incorrect, he is directed to a frame to explain why** his answer is wrong.
- Thus, before he is allowed to next main frame, he is allowed to follow a different route of sub-sequences.
- All scheduled activities are controlled by the student so it is also called **Intrinsic/internal programming**.



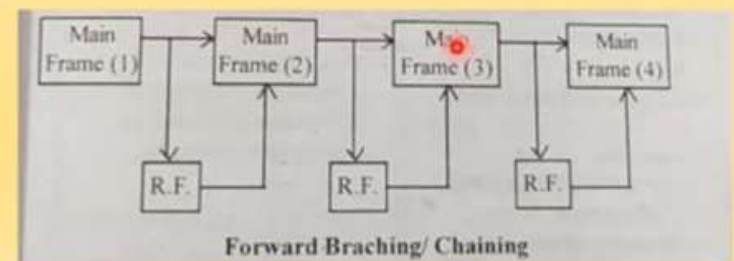
2. Branching programming / Intrinsic programming



Backward Chaining



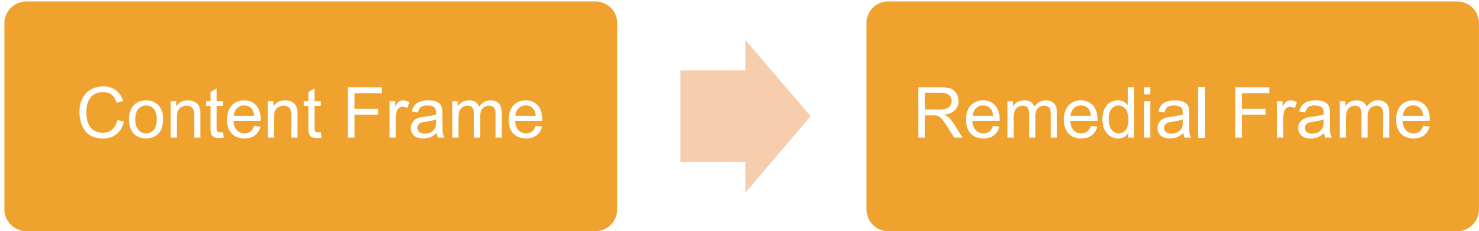
Forward Chaining





Branching programs are of two types:

- ✓ In the content frame student repeat response, positive confirmation, new information, etc. are included and
- ✓ Negative confirmation, cause of a negative thing, and repeated responses are included in the remedial frame.



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graph LR; A[Content Frame] --> B[Remedial Frame]
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Content Frame

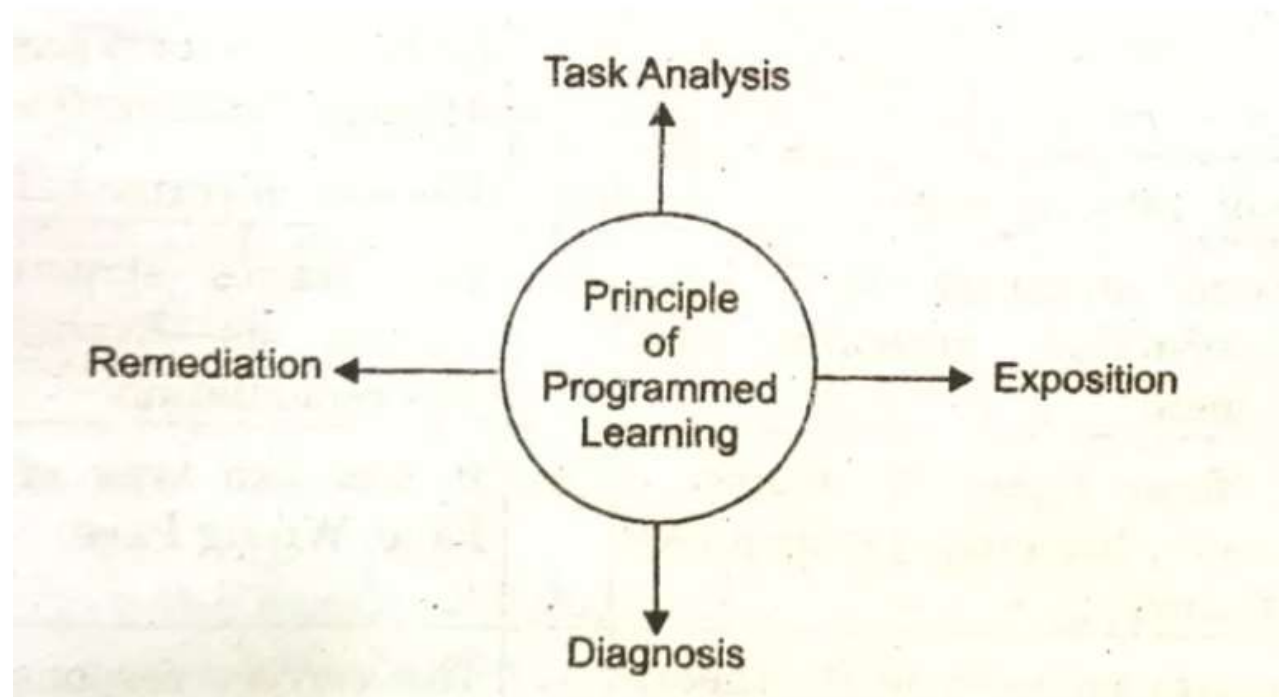
Remedial Frame



Assumptions of Branching Programme

1. Presentation of content in a big firm, not a small form. Because a student learns better if he is exposed to the whole concept.
2. The wrong responses do not necessarily hinder learning but they help in diagnosis and providing remediation for their weakness.
3. A student learns better if remediation is provided simultaneously for his weakness. The teaching and remediation should go side for effective learning
4. This is essentially based on the psychology of individual differences. This provides an opportunity to choose the learning path according to his need and requirement. Thus it is highly individualized instruction.
5. This present the steps in a form of a Page. On this page are of two types- (i)Home page, (ii) Wrong Page

Principles of Branching Programming





Principles of Branching Programming

1. **Task Analysis:** In this principle, the work is divided according to its elements. These elements are arranged in a sequence, which are helpful for learning.
2. **Expectation:** In this principle, the learner is exposed to the whole concept with the help of suitable illustrations and chosen words. The learner reads the frame to have mastery over the concept.
3. **Diagnosis:** This principle identifies the weakness of the learner. When the learner attempts the wrong option, his weakness comes from knowledge. This weakness is diagnosed with the help of multiple-choice questions.
4. **Remediation:** After diagnosing the weakness of the learner, he is provided with a fresh frame to come to the right response, called remediation.



Characteristics of Branching Programming

- Branching programming than linear programming compared to **each text frame comes more teaching materials.**
- Needs of students at various positions have the **freedom to reach the final position.**
- Programming it is **controlled by the students.**
- It serves to give **home nutrition instantly.**
- The share of students in programming **multi-choice questions are given.**
- This programming **based on student's potential errors that emphasizes teaching materials.**
- Incorrect response, the student is **given the opportunity to correct it.** He then reaches to **the next step until he could not answer his first major post.**
- Each frame has to make it **very clear and big.**



Limitations of Branching Programming

- An annual or **amendments** require certain intervals.
- It is **more useful for higher classes**.
- The **whole subject matter is difficult to contain**.
- It is relatively **expensive** initiatives.
- The initiative for the creation of skilled and **trained and qualified teachers are required**.
- This multi-choice questions several times to the student **without the subject matter or read without understanding**, estimated on the basis of the answers they give.

Difference Between Linear and Branching Programming

Linear Programming		Branching Programming	
1	B.F. Skinner gives in 1954	1	Norman A. Crowder developed this programme in 1954
2	It is based on operant conditioning learning theory. It is a responses-centered approach of learning.	2	It is based on configuration theory of learning. It is stimulus centred approach of learning.
3	It is originated from psychological lab experiment of pigeons	3	It is originated from semi-industrial situation with emphasis on efficient instruction to improve job performance or it has originated from 'Human Training Techniques'
4	The size of frame is small.	4	The size of frame is large
5	The frame structure has three aspects-stimulus, response and reinforcement.	5	The frame structure has three aspects as Exposition, diagnosis and remediation
6	It has four types of frame introductory, teaching, practice and testing frames	6	It has two type of frames:- Home Page, Wrong Page.
7	This strategy is based on the theory of reinforcement	7	The correct responses is confirmed and approved to provide the reinforcement

Programmed Instruction: Mathetics Programming





Introduction

- **Thomas. F. Gilbert** is credited with developing mathetics programming.
- Mathetics of the **Greek** word ‘**Mathyn**’ derives from the word meaning—**learn**.
- According to him “**Mathetics is the systematic application of reinforcement theory to the analysis and construction of complex behaviour repertoires usually known as subject matter mastery, knowledge and skills**”
- Although it is **a bit complicated nature programming skills difficult to achieve, bring about the desired behavior** and the subject matter is considered viable in the absolute right to earn.
- Mathetics programming unit of the **initiatives ‘post’ and not ‘practice’ is**. The text-as a link object is placed in the **last position is presented as the first post**.
- **Retrogressive Chaining/ Backwards Chaining**



Assumption Mathetics programming

- **Retrogressive Chaining/ Backwards Chaining** of responses helps in **to reach up to mastery level**.
- Reverse chaining of stimuli helps in learning, i.e. **from whole to part, from complex to simple**.
- **Completion of task provides motivation** to students.



Conditions of Mathetics

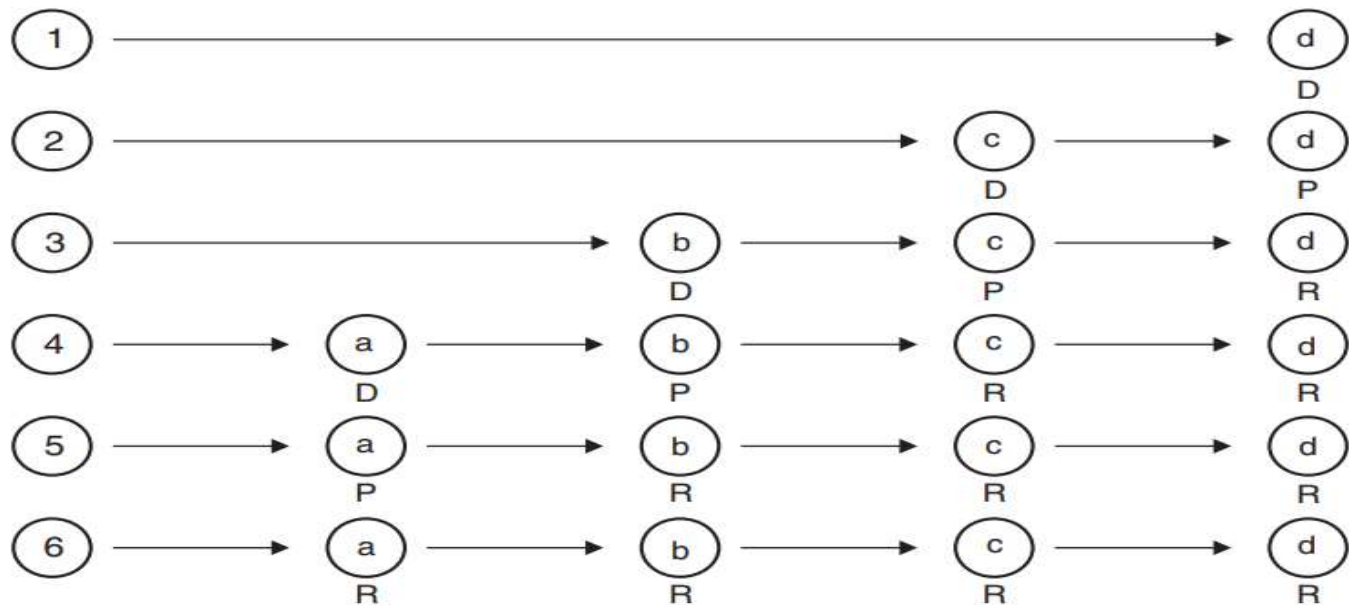
- Mathetics was **initially used in mathematics** but also in other disciplines can be used. This initiative has three positions
 - ✓ 1. **Demonstration**
 - ✓ 2. **Prompting**
 - ✓ 3. **Release**
- Learning performance of students-behavior is **displayed**.
- **Prompt the state to generate learning behavior are provided.**
- Immunity learning curve behavior, which are designed for learning, **their practice opportunities are provided.**



Unique feature of Mathetics

1. Task Analysis is the important feature of Mathetics.
2. The success of Task analysis depends to a great extent on the adequacy and reliability of data, The term task analysis suggests the breaking down of the task into its constituent parts and involves detailed listing of component behaviooural elements of a job or task.
3. Task Analysis is of 3 types
 - I. Analysis of Topic
 - II. Analysis of the Job
 - III. Analysis of the Skills

- Keep the student response. At the end of the first term response is required.
- Thus gradually master is walking on the wrong side. It can be displayed as follows:



Here-D = Performed and display by students, P = Prompter, R = Immunity for response.



Characteristics of Mathetics and Related Work-System

- Like other instructional format Mathetics programming teaching-learning is derived from a detailed **analysis of the material**.
- The unit frame **rather than the practice or learning difficulties**.
- In Mathetics, **an EXERCISE/ PRACTICE** or to find a solution to this problem provides students **Reinforcement**.
- No restriction is put on the size of an exercise.
- The **descending chain theory/ retrogressive or backward chaining** is used.
- Learning process involves 3 principles
 - i. Principle of **Discrimination**
 - ii. Principle of **Chaining**
 - iii. Principle of **Generalisation**



Limitations of Mathetics Programming

- It is very technical in nature and as such **demands a lot of skill, training and labour** on the part of the programmer.
- It is **not suitable for learning the material of all subjects**. Only concrete material and subject material involving psycho-motor skills can gainfully programmed by means of mathetics.
- This programme makes **inadequate provision for individual differences**. Because all learners have to learn the same way.
- The learner **encounters difficulty in constructing the last response or mastery response** in the beginning.
- Mathetics **cannot be used for higher cognitive and affective learning objectives**.
- Mathetics **does not provide any remedial help** for the weaknesses and difficulties of learners.

A Comparison of Different Types of Programming

Material	Linear	Branching	Mathetics
1. Exponent	B.F. Skinner 1954	Normen A. Kroder 1954	Thomas F. Gilbert 1962
2. The original source of	Psychological laboratory analysis or use in pigeons.	Semi-industrial position work instructions to improve performance. It is caused by human training.	This field is generated from Mathetics. Complex math problems are solved through retrogressive series.
3. Learning theory	Oprent conditioning is based on the theory of learning. (R. S.)	The configuration is based on the principle of learning. This is a problem-solving approach. The motivation of the learner-centered approach.	It is based on the principle of learning conectionnist. This chaining-changing approach.
4. Theory	It is based on five basic principles: 1. Small-steps theory. 2. Active-response theory. 3. Immediately-confirmation of theories. 4. Self-**pacing** principle. 5. Students test theories. In addition, optional or mandatory theory may be, too. Three essential principles: 1. Purpose specification principle. 2. Empirical theory. 3. Self-**pacing** principle.	It is based on three basic principles: 1. The principle of the exhibition. 2. The principle of diagnosis. 3. Remidiasn principle.	It is based on three basic principles: 1. Chaining principle. 2. The principle of discrimination. 3. The principle of normalization.



5. Forecast	1. Students can learn better if the material is presented in small units. 2. If the response is immediately improved learning outcomes for students are good. 3. Errors hinder student learning. 4. In Laisej ferric environment students learn better.	1. All conditions/ material to be exposed to the students could learn better. 2. Students help diagnose errors. 3. Students learn better if Remidiasn is provided together. 4. Students learn better in a democratic environment.	1. Changing chaining, helps to learn how to reach mastery. 2. As part of the reverse chaining of stimuli for example, the simple complicated. 3. Provides motivation to students upon completion of work.
6. Frame Size	1. Small steps. 2. Element contains only one subject at a time. Each step is complete in itself. It can be taught independently and can be measured.	1. Large frame or steps. 2. Paragraph or page to be in the frame.	1. Small steps but in reverse chaining, complex materials, for example, small, simple units to achieve mastery level.
7. Frame structure	Stimulus-response reinforcement.	Remidiasen exhibition diagnosis.	Performance issues quickly.
8. Types of frame	Three types of frames: 1. Introductory frame 2. Teaching frame or full frame soon. 3. Test frame or enclosed/ unprompted frame.	Two types of frame: 1. Home for teaching and diagnosis. 2. Remidiasn the wrong page.	Two types of frame: 1. Display frame. 2. Fixed frame



9. Reaction	1. Recall or recognition of structured feedback.. 2. These reactions are controlled by the programmer and not by learners.	1. Response is not rigidly structured. 2. Responses are selected by learners, not by programmers.	1. Structured responses. 2. Responses determined by the programmer.
10. Strengthening	1. Strengthening and provides immediate confirmation of correct responses. 2. Incorrect responses are ignored.	1. Strengthening responses confirm the offer. 2. Incorrect responses that help learners in the diagnosis of osteoporosis. 3. Diagnosis is based on the measure of weakness.	1. Strengthening of completion of work provides. 2. Incorrect responses are ignored.
11. Mistakes	Hinder in learning.	Learning helps in the diagnosis of osteoporosis.	No discrimination but also helps in learning.
12. Error rate	Less than ten percent of the benchmark program is acceptable, but it is not far.	More than twenty percent error rate can be accepted.	Low error rate is acceptable.
13. Individual Differences	Only to work at their own pace. For example, the time factor for individual differences.	Choose their own path according to their needs and expectations.	Learners to work at their own pace, but not requirements.



	differences.		
14. As Programme	1. Traditional manual. 2. Contains instructions regarding the use of the programme. 3. Introduction of the subject material. 4. Presentation of smaller material units.	1. Skremveld manual. 2. Initially insert instructions. 3. Back Content was submitted or pages. 4. This is not a back sequence.	1. Traditional manual. 2. Is inserted at the beginning. 3. Material is presented in small units. 4. The units are arranged in series linear retrogressive.
15. Teaching Machine	Machine Teaching Model is very simple and cheap.	Teaching is hard to use the machine. Requires a complex model of the machine.	Linear model of teaching machine.
16. Purpose	1. Modification of the behavior of learners. 2. To encourage self-learning requires a teacher. 3. Students in the program flow induced continuous encouragement.	1. Out the weak points of learners. 2. Provide measures to correct weaknesses.	1. Development of content. Main focus on math and grammar.
17. Use	1. Are used for secondary level students. 2. Learning objectives to achieve lower recall and recognition exclusively for use. 3. Average and below average intelligence useful for students. 4. Remote-can be used in education programs.	1. As useful for secondary and higher classes. 2. Higher objectives can be achieved in various discrimination. 3. Useful for students with average and high intelligence. 4. The remote-can be used in education programs.	1. Useful for higher classes. 2. Useful for complex and difficult task. 3. Useful for the development of math and grammar concepts. 4. The remote-can be used in education



18. Limitations	1. There is no freedom for the student to respond. 2. Which is based on the principle of learning by experiments conducted on animals have been prepared. Animal is more intelligent than humans. Animals than he found an intelligent brain..	1. The learning process does not consider whether or not to place learning. The main weaknesses of learners to diagnose and remedy focuses on providing. 2. There is no indexing pages. Student finds it difficult to follow the steps. 3. Each learner follows the same path, so students-to deceive each other.	1. The main emphasis on content rather than changes in the behavior of the learner. 2. Main emphasis on learning rather than mastery of material changes in behavior. 3. Retrogressive development of learning packages is very difficult to upgrade. She finds it exciting or motivating, so he does not want to go through these pages. 4. Remediasn rather more emphasis on teaching. So it is only a tutorial approach.
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Thank you...