
UNIT 7 ELABORATION THEORY (ET)

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7.1 INTRODUCTION

We know that the field of Instructional Science is concerned with understanding and improving the methods of instructional design so that the instructions can be more effective, efficient and appealing. In the previous Unit-6, component display theory we have discussed the presentation form or approach to the design of instruction. Here, in this unit, we will discuss the Elaboration Theory (ET) of instruction, which is given by Charles M. Reigeluth, whose major professional interest was to improve public education. He wanted an educational system that would place greater emphasis on well designed resources as the source of knowledge. This theory was designed to make scope and sequence decisions for relatively large chunks of instruction. It helps and guides an instructional designer to take decisions about when to sequence instructional events to make a difference, as well as when to use alternative methods for sequencing instruction.

7.2 LEARNING OUTCOMES

After going through this unit, you should be able to:

- discuss the concept of Elaboration Theory (ET);
- describe the different components which are utilized by elaboration theory;
- explain the characteristics of different components of the sequence;
- describe the elaboration sequence; and
- discuss the steps of developing an elaboration sequence.

7.3 ELABORATION THEORY (ET): AN OVERVIEW

The Elaboration Theory of instruction is designed to extend the Component Display Theory (CDT), which was introduced in Unit 6. We have already studied in previous unit about the Component Display Theory, and micro and macro-level strategies for organizing subject matter content. Hence, we know that the micro-level deals only with methods for teaching a single idea, and the macro-level deal only with methods that relates to several ideas, such as sequencing those ideas. The Elaboration Theory is exclusively for the macro-level which prescribes methods that deal with many related ideas and how to sequence these ideas. This theory makes no attempt to deal with either delivery or management strategies. Hence, it can be said that the Elaboration Theory deals only with organizational strategies at the macro level. The macro-level is made up mainly of four areas which are generally known as four S's. These are:

- Selection;
- Sequencing;
- Synthesizing; and
- Summarizing of subject matter content.

Thus, elaboration theory attempts to prescribe optimal methods in all four of these areas. The nature of elaboration theory of Instruction has an analogy with a zoom lens. According to C.M. Reigeluth, studying a subject matter through the elaboration theory model is similar in many respects to studying a picture through a zoom lens of a camera, where a person starts with a wide-angle view which allows him or her to see the major parts of the picture and the major relationships among those parts, but without any detail. When a person zooms in on a part of the picture, the zoom operates in steps or discrete levels. Zooming in on a given part of the picture allows the person to see more about each of the sub-parts of the picture. The person continues this pattern of zooming in to see the major sub-parts of a part and zooming out for context and review.

In a similar way, the elaboration theory of instruction starts the instruction with a special kind of overview of the simplest and most fundamental ideas within the subject matter. It adds a certain amount of complexity or detail to one part or aspect of the overview. It reviews the overview and shows the relationships between the most recent ideas and the ideas presented earlier. It continues this pattern of elaboration followed by summary and synthesis until the subject level of complexity has been reached on all desired parts or aspects of the subject matter.

Elaboration theory does not go through learning pre-requisites to teach the overview like Bruner's (1960) spiral curriculum because some un-mastered learning pre-requisites exist at the level of the overview. Let us discuss the origin of the elaboration theory before discussing different components of elaboration theory.

Elaboration theory creates a comprehensive set of macro-level models that integrate all of the above four areas in a way that greatly improves the ability to design good instruction.

Check your Progress 1

- Note:**
- i) Write your answers in the space given below
 - ii) Compare your answers with those given at the end of the unit.

1) What is Elaboration Theory?

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2) Why is Elaboration Theory compared with a zoom lens? Discuss.

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7.4 COMPONENTS OF ELABORATION THEORY

An instructional designer analyzes the content and conditions that support the instructional system. The first sequence is to simplify the components to be learned, second to formulate them into processes, which is done by identifying and clarifying the components. There are seven major strategy components which are utilized by Elaboration Theory.

7.4.1 An Elaboration Sequence

This sequence is a special type of simple to complex sequence, but there are many different ways to form a simple to complex sequence for a single course. The elaboration sequence has two characteristics these are: (i) the general ideas epitomize rather than summarize and (ii) the epitomization is done on the basis of a single type of content. These characteristics can be understood better by going through the given description.

- **Epitomizing Versus Summarizing** – Epitomizing differs from summarizing in two ways. Firstly, it is presenting a very small number of ideas that are to be taught in the course, and secondly, presenting them at a concrete, meaningful, applicable level. On the other hand, summarizing usually presents a considerably larger number of ideas at a more superficial, abstract and memorization level. Hence, to epitomize is not to lightly preview all of the important course content. Rather, it is to teach on an application level, complete with examples and practices, that enable the learner to relate it to previous knowledge and experience. Hence, only a few fundamental and representative ideas that convey the essence of the entire content would be able to use each of those principles to predict or explain novel cases.

For example, an epitome for teaching an introductory course on Economics would be to learn the most fundamental and simple principle of Economics. The Law of Supply and Demand can be presented at the application level rather than the important principles of Economics.

- **Single Type of Content** – We know that there are three types of content – (i) concepts (a set of objects, events or symbols that have certain courses characteristics); (ii) procedures (a set of actions intended to achieve an end); and (iii) principles (which indicate the relationship between a change in one thing, and a change in something else; and, may also be called a hypothesis, proposition, rule or law). In an elaboration sequence, under the process of epitomizing, just one of the mentioned three types of content is chosen. The elaboration sequence is characterized as having a conceptual organization, a procedural organization or a theoretical organization in which the respective type of content is epitomized at the beginning of the course and gradually elaborated on in the remainder of the course, in such a way that most units not only elaborate on a previous lesson but also epitomize several later units.

In essence, it can be said that epitomizing entails – (i) Selecting one type of content, and listing all of the organizing content to be taught in the course; (ii) selecting a few organizing content ideas that are the most basic, simple, and fundamental; and (iii) presenting those ideas at the application level, rather than the more superficial and abstract memorization level.

Another important characteristic of epitomizing is the identification of very general ideas, neither detailed nor very simple ideas, neither complex nor concrete ideas, or abstract ones. Hence, in a nutshell, it can be said that the elaboration theory's 'special kind of overview' epitomizes a single kind of content. Also other kinds of content are included that are highly related to those epitomized ideas.

The process of epitomizing provides a kind of an overview, but here it is not called an overview, it is an epitome. The content for epitome is selected by epitomizing content to a small chunk, involving the other types of content that are highly relevant, including learning pre-requisites. Fig. 7.1 shows the content for a conceptual epitome.

1) *Organizing content (concepts)*
Kinds of measures
 a) *Elevation (or central tendency)*
 b) *Spread*
 c) *Proportion*
 d) *Relationships*
Kinds of methods of measures
 a) *Description*
 b) *Estimation*
 c) *Hypothesis testing*

2) *Supporting content*
(Learning pre-requisites for the aforementioned concepts)
Practically all concepts in statistics can be viewed as elaboration on these concepts, through development of parts or kinds of conceptual structures.
Content for a Theoretical Epitome for an Introductory Course in Economics

1) *Organizing content (principles)*
The law of supply and demand
 a) *An increase in price causes an increase in the quantity supplied and a decrease in the quantity demanded.*
 b) *A decrease in price causes a decrease in the quantity supplied and an increase in the quantity demanded.*

2) *Supporting content*
The concepts of
 a) *Price*
 b) *Quantity supplied*
 c) *Quantity demanded*

Practically all principles of economics can be viewed as elaborations on the law of supply and demand, including those that relate to monopoly, regulation, price fixing, and planned economies.

Fig. 7.1: Content for a conceptual epitome for an introductory course in statistics

As we know, the elaboration theory is similar to zooming, where zooming in process operates in steps or levels, which is known as levels of elaboration. Each level provides more details about the previous levels. Hence, in an epitome, the first level of elaboration elaborates on the organizing content to be presented in the epitome. The second level elaborates on the organizing content presented in the first level, and so on. Fig. 7.2 shows a partial example of level-1 lesson earlier shown in Fig. 7.1.

1) *Organizing content (concepts)*
Kinds of measures
a.1 Mean a.2 Median a.3 Mode
b.1 Variance b.2 Standard deviation
c.1 Percent c.2 Decimal c.3 Fraction

2) *Supporting content*
(Learning pre-requisites for the aforementioned concepts)
Additional elaborations would define kinds of methods for each kind of measure (e.g., methods of hypothesis testing for spread).
Content for an Elaboration on the Theoretical Epitome

1) *Organizing content (principles)*
a) *Effects of changes in supply schedules at equilibrium price.*
b) *Effects of changes in demand schedules at equilibrium price.*
c) *The principle of why changes occur in supply schedules or demand schedules.*

2) *Supporting content*
a) *The concepts of supply, supply schedule, and supply curve.*
b) *The concepts of demand, demand schedule, and demand curve.*
c) *The concept of changes in supply schedules or demand schedules.*
d) *The concept of equilibrium price.*

Beyond this point, elaborations would split into those that elaborate on the supply side (i.e., production and costs) and those that elaborate on the demand side (i.e., consumption and utility).

Fig. 7.2: Content for an elaboration on the conceptual epitome

Source: Reigeluth and Stein (1983).

Finally, a simple to a complex sequence based on epitomizing (rather than on summarizing) is prescribed, because it is hypothesized to make learning more meaningful and less rote, by effecting acquisition at the application level rather than the memorization level.

Check Your Progress 2

- Note:** i) Write your answer in the space given below
ii) Compare your answer with the answer given at the end of the unit.

Enumerate different components of Elaboration Theory.

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7.4.2 Learning Pre-requisite Sequence

A learning pre-requisite sequence is based on a learning structure or learning hierarchy (Gagne, 1968). A learning structure is a structure that shows what facts or ideas should be learned before any given idea is learnt. Hence, it shows the learning pre-requisites for an idea. For example, one can not learn the principle that force equals mass times acceleration ($\text{Force} = \text{Mass} \times \text{Acceleration}$) until he or she has learned the individual concepts of mass, acceleration, and force.

Learning pre-requisites can be considered critical components of an idea. The critical components of the principle are (i) concepts and (ii) change relationships. The critical components of the concepts are (i) defining attitudes and (ii) their relationships (e.g., conjunctive and the disjunctive).

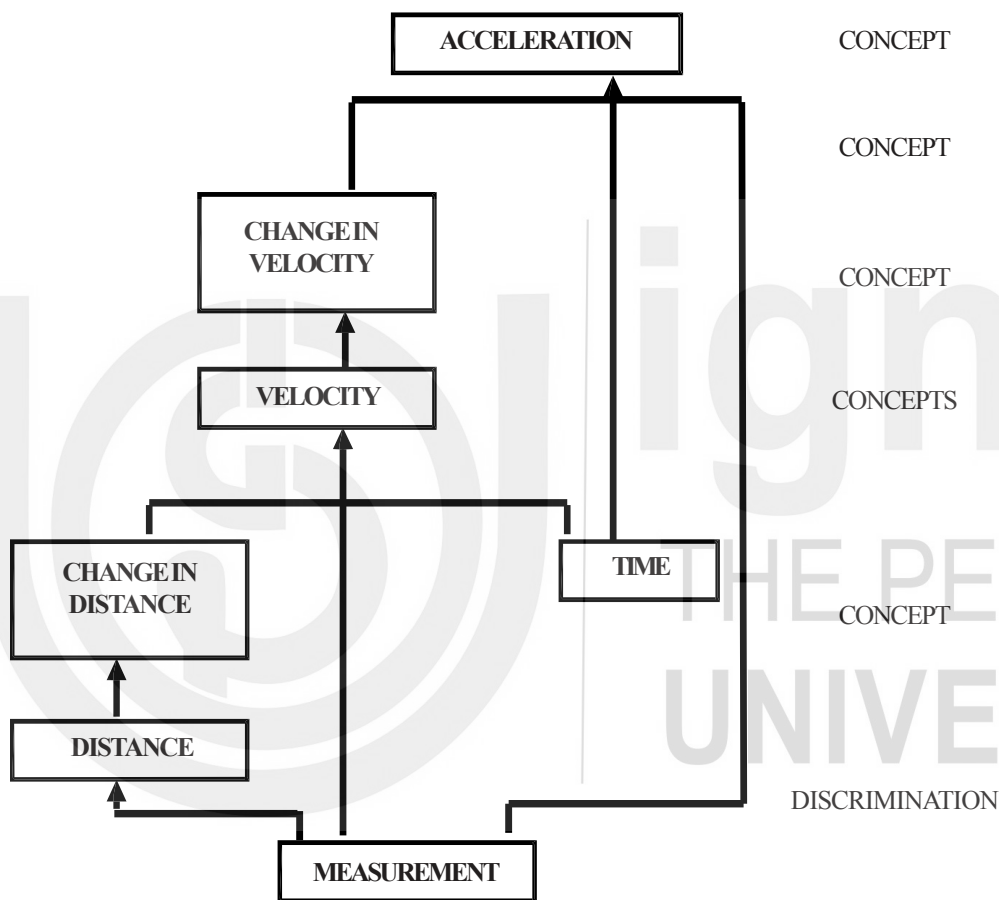


Fig. 7.3: An example of learning structure

Note: The arrow between two boxes on different levels means that the concepts in lower box must be learned before the concepts from higher box can be learned.

Source: Reigeluth and Stein, 1983.

A learning pre-requisite sequence is the presentation of content ideas in such an order, that an idea is not presented until after all of its learning pre-requisites have been presented.

7.4.3 Summarizer

We know that for minimizing the aspects of forgetting, a review is essential in instruction. Hence, in elaboration theory, a summarizer is a strategy component that reviews systematically the learned material to minimize forgetting.

- A reference example, i.e., a typical and easy to remember example for each idea.
- Some diagnostic, self-test practice items for each idea.

There are two types of summarizers. They are:

- 1) Internal Summarizer – This comes at the end of the lesson and summarizes only the ideas and facts taught in the lesson.
- 2) Within Summarizer – This summarizes all ideas and facts that have been taught so far in the sets of lessons on which the learner is recently working.

7.4.4 Synthesizer

In elaboration theory, a synthesizer is a strategy component for relating and integrating ideas. We know that, in instruction, it is important to periodically inter-relate and integrate the individual ideas that have been taught because it (i) provides students with a valuable kind of knowledge; (ii) facilitates a deeper understanding of the individual ideas through comparison and contrast; (iii) increases the meaningfulness and motivational effect of the new knowledge, by showing how it fits within a larger picture, and; (iv) increases retention (Asubel, 1964 Gagne, 1978). A single type of relationship is advocated for each synthesizer so that the learner will not be confused. Hence, the kinds of relationships should be presented in a different synthesizer. For example, we can use a diagram to show the relationship by any given line, but when we give different kinds of relations, we have to show a table or matrix to combine them in a clear way.

In this way, new ideas are placed within the context of the previous instruction, through the process of periodic synthesis. It helps the learner to be continuously aware of the structure of the idea in the course and the relevance of each individual piece of knowledge to selected pieces.

7.4.5 Cognitive Strategy Activator

Cognitive strategies include learning skills and thinking skills that can be used across a wide variety of content areas, such as creating mental images and identifying analogies. Sometimes these cognitive strategies are called generic skills. These strategies should be activated during instruction. The two means of accomplishing these strategies are:

- i) ***Embedded strategy activator:*** This includes the instructional use of pictures, diagrams, analogy, paraphrases, and other devices that force the learner to manipulate or interact with the content in certain specific ways.
- ii) ***Detached strategy activator:*** This directs the learner to employ a previously acquired cognitive strategy, which improves the learner's acquisition and retention of the new content. The inclusion of detached strategy activator, along with a brief instruction on the use of those cognitive strategies, takes very little instructional time. It also increases both the effectiveness of the instruction and the learner's capacity to manipulate and understand other similar kinds of learning tasks.

7.4.6 Learner Control

The concept of learner control refers to the freedom of the learner for selection and sequencing of:

- i) the content to be learned (content control);
- ii) the rate at which a learner will learn (pace-control);
- iii) the particular instructional strategy components she or he selects, and the order in which they are used (display control); and
- iv) the particular cognitive strategies that the learner employs when interacting with the instruction (conscious cognitive control).

Elaboration theory emphasizes only three controls, i.e., (1) content control, (2) display control and (3) conscious cognitive control, but not pace control, which is a only controllable at micro-level.

Check Your Progress 3

Note: i) Write your answers in the space given below.
ii) Check your answers with the answers given at the end of this Unit.

1) What is learner control in elaboration theory?

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2) Explain the difference between summarizer and synthesizer in elaboration theory.

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7.5 DEVELOPING AN ELABORATION SEQUENCE

Before knowing about the development of an elaboration sequence, it is necessary to know about the concept of sequencing.

As we know, in the industrial age paradigm, the need was to break the content or task down into little pieces and teach those pieces one at a time. But in the information age paradigm, most of the new approaches to instruction require a more holistic approach to sequencing that can simplify the content or task, by identifying simpler real world versions of the task or content domain. The Elaboration theory was developed to provide a holistic approach to sequencing that makes the learning process more meaningful and conducive to learning.

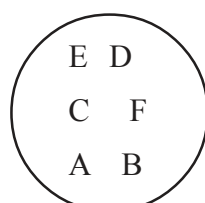
Sequencing means how to group and order the content. We can't sequence the content without grouping, hence different kinds of sequencing require different groupings. Therefore, a decision must be taken about, what content should be presented, and what should be the scope for each grouping.

Thus, scope and sequence decisions involve several types of decisions which are described below.

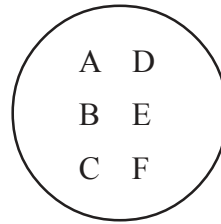
1) The size of each group of content



2) The components of each episode



3) The order of components within each episode as A, B, C, D, E, F or A, B C, D



4) The order of episodes

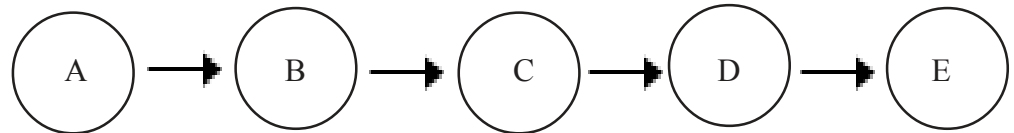


Fig. 7.5: Scope and sequence decisions: Types of decision

Source: Reigeluth, 1999

Scope is as important as sequencing because the content of the sequence should be as per the need of the learner/customer/trainee. Hence, the right content should be selected.

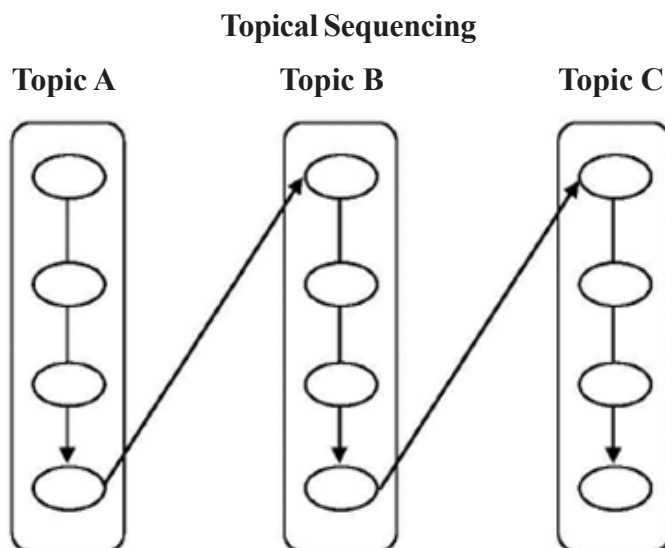
The impact of sequencing depends upon two major factors. These are:

- i) The strength of relationships among the topics, and
- ii) The size of the course of instruction.

When, there is a strong relationship between the topics of the course, only sequencing is important. Suppose, there are many topics and these are strongly related to each other, it is very easy to learn the content. The second thing is where the size of the course of instruction is big but the relationship among the topics is well related then it becomes easy to learn. But if there is a fragmented approach for sequencing and those fragments are not related, it may be difficult to learn the relationship of the content.

When a number of topics need to be presented, two basic patterns of sequencing can be used as shown in Fig. 7.6. These are:

- i) **Topical sequencing:** Here a topic is taught to whatever depth of understanding is required before moving to next.
- ii) **Spiral sequencing:** Here the learner learns the basics of one topic, then another, then another.



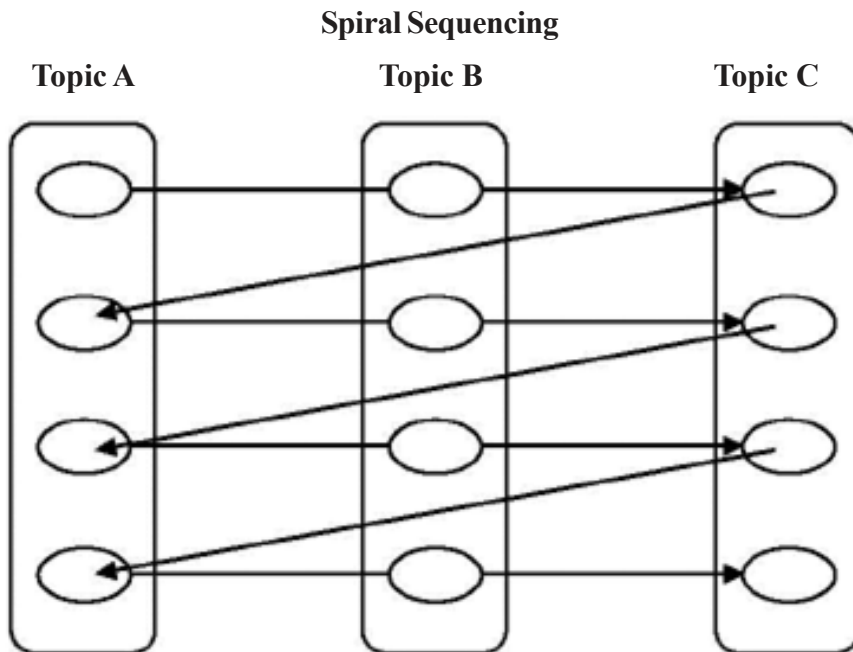


Fig. 7.6: Topical and spiral sequencing

Source: Reigeluth and Kim (1993)

Different sequencing strategies are based on different kinds of relationships with the content and different kinds of expertise, i.e., task expertise and the subject domain expertise. Task expertise helps the learner in becoming an expert in a specific task, such as managing a project, setting a product, or writing a manual. The domain expertise helps the learner in becoming an expert in a body of subject matter because it ranges from general to detail. But elaboration theory recognizes two major kinds of domain expertise, i.e., conceptual and theoretical expertise. In conceptual expertise, conceptual knowledge structures for understanding 'what' and in theoretical expertise, principles for understanding 'why' are included.

Conceptual elaboration sequences

Asubel (1986) explains that learners incorporate new information into their cognitive structure. It is the main factor influencing the learning and retention of new learning, which he referred to as *Cognitive Scaffolding*. This process of learning that proceeds from broader to narrower, more inclusive, and general concepts is called *progressive differentiation*. The conceptual elaboration sequence is designed, in either a topical or spiral manner. (Fig 7.6)

Theoretical elaboration sequence

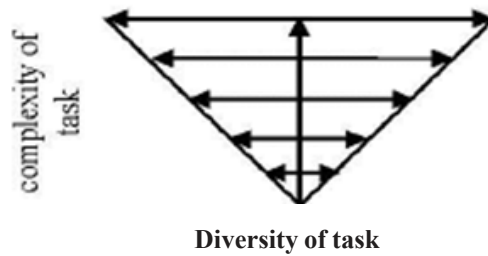
The theoretical Elaboration Sequence is intended for courses that focus on inter-related sets of principles. Hence, the sequencing strategy is based on certain principles. The principles exist on a continuum from broader, more general, and more inclusive ones to narrower, more specific, and less inclusive one. The theoretical elaboration sequence may also be done in either a topical or spiral manner.

The Simplifying Conditions Method (SCM)

For building task expertise, the simplifying conditions method is a new approach that offers guidance for analyzing, selecting, and sequencing the content ('what to learn'). In brief, it can be said that Simplified Conditions Method (SCM) is more holistic rather than fragmented and begins with the simplest version of task, and then it teaches progressively more complex versions of the task.

The SCM provides practical guidelines to make a very different kind of simple-to-complex sequence from the hierarchical sequence – one that is holistic rather than fragmented. A SCM sequence begins with the simplest version of the task, which is truly representative of the task and teaches progressively more complex versions of the task until the desired level of complexity is reached. Each version of the task is a class or group of complete real-world performances on the task. This process contrasts sharply with the hierarchical approach to sequencing, which teaches all the pre-requisites first and does not teach a complete, real-world task until the end of the sequence.

Task Analysis and Sequencing with SCM



Analysis and Sequencing with <i>SCM</i> →
Simple to complex (simple task to complex task)
Task analysis and sequencing can be done simultaneously. -the prototype can be developed rapidly.
From the very first lesson, it provides 1) The flavor of the whole task. 2) A simple but applicable skill, and 3) Enhanced motivation.

Fig. 7.7: SCM approach

Source: Reigluth and Kim (1993)

The SCM is composed of two parts: (i) Epitomizing and (ii) Elaborating. Epitomizing is the process of identifying the simplest version of the task which is a true representation of the whole task. Elaboration is the process of identifying a progressively more complex version of the task.

When we develop an elaboration sequence, we have to integrate task analysis with design and we have to ask a few questions: (i) what is the simplest version of the task that an expert has ever performed? (ii) what is the next version and so fourth. When each version is identified, its place in the sequence is simultaneously determined. In addition to this thumb rule, the relationship between the first and the second version should also be considered. Since designing the SCM sequence is more of a heuristic than a procedural process, the most important heuristics are being presented in the following headings.

7.5.1 Prepare for Analysis and Design

This is the first phase of developing a sequence. At this stage we prepare the layout of the ground work for analysis and design under the following steps:

- Step 1 Establish rapport with a subject matter expert
- Step 2 Identify the characteristics of the task in general
- Step 3 Identify the characteristics of the learner in general
- Step 4 Identify the delivery constraints of the instruction in general.

7.5.2 Identify the First Learning Episode

This is the second phase of developing a sequence. At this stage we identify the first learning episode, for which we have to consider the following steps:

- The first step is identification of simplest version of the task, which should be fairly representative of the task because it helps in identifying some other major version of task.
- The second step is organizing content. At this stage of organizing content refers to procedural task, the organizing content is done stepwise, whereas for a heuristic task the organizing content is based on principles. Hence, in the former (procedural) task a flow chart is drawn up, while in the later task (heuristic) guidelines and decision rules in a performance are explained. Sometimes, if a combination of both is needed, sub-steps, guidelines-decision or rules and explanations are identified.
- The third step is analysing the supporting content. At this stage the supporting content is analysed for the version and information, understandings, skills, meta-cognitive (higher) order thinking skills and affective qualities are identified and analyzed.
- The fourth step is to decide the size of the episode. At this stage the size of the episode should be decided. Hence, the delivery constraints, class work and homework time should be considered. Too big or too small size of an episode is not good. The age of the learners, the difficulty and abstractness of the content, the motivational value of the instruction and additional factors should be considered before deciding the size of the episode. The size of the episode can be adjusted to the target size.
- The fifth step is within the episode sequence. For this purpose pre-requisites should be taught before that content for which they are pre-requisites. The principles, causal model or process models should be taught prior to a related procedure. The coordinated concepts should be taught together.

7.5.3 Identify the Next learning Episode

This is the third phase of developing an elaboration sequence, which helps a subject matter expert (SME) in identifying the next simplest version of the task that is truly representative of the task as a whole. For identifying the next version of the task, the following steps should be followed:

- Identify all the simplifying conditions that distinguish the simplest version of the task from the more complex versions and then rank order all these versions. Different conditions of any version correspond to different sets of skills and knowledge that vary in complexity.
- The simplifying conditions are ranked and then ordering of the versions of the task from simple to complex should be done. These simplifying conditions are referred to as the 'primary simplifying conditions' (PSCs) because they are identified first, and the simplifying conditions discussed next are referred to as secondary simplifying conditions (SSCs)
- The second step of identifying the next learning episode is the identification of the next simplest and most representative version of the task or next elaboration, which is typically next rank – ordered simplifying condition. If the remaining

PSCs require more new content than can be taught in one episode, then SSCs that can be included to reduce the complexity of the new version of the task can be identified and PSC can be removed, but the SSCs must be rank ordered.

- The third step is the same as it was in phase two. At this stage, the organization of content, supporting content, size and within episode sequence is done.
- The fourth step is called ‘remaining versions’. At this stage, phase III of simplifying condition (primary, secondary, and tertiary) is repeated until instructional time continues.

Check Your Progress 4

Note: i) Write your answers in the space given below
ii) Compare your answers with those given at the end of the unit.

1) What is first Learning Episode?

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2) What is the difference between topical and spiral sequencing?

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7.6 IMPLICATIONS OF ELABORATION THEORY TO INSTRUCTIONAL DESIGN

The elaboration theory, which prescribes the simple to complex sequence, allows the learner to learn at the level of complexity, which is most appropriate and meaningful to him/her at any stage in the development of the learner’s knowledge.

A zoom-lens approach, in spite of its fundamental simplicity and intuitive rationale, is generally not used in instruction. The lens zoomed in to the level of complexity can be deemed appropriate for the intended population of the student because the level of complexity can pan across the entire subject matter.

Another positive point of elaboration theory is that it integrates the lost strategies of a wide variety of researches and theoretical perspectives. It prescribes the use of major strategy components, including pre-requisite sequencing, at various points during the instruction.

Elaboration theory can be helpful in educational and training contexts since instruction in both cases focuses on complex cognitive structures with a focus on understanding and cognitive tasks with a focus on skills.

Check Your Progress 5

- Note:** i) Write your answer in the space given below.
ii) Check your answer with the answer given at the end of this Unit.

Discuss the implications of elaboration theory.

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7.7 LET US SUM UP

In this unit, we learned about the concept of Elaboration Theory. This theory emphasizes how to select and sequence content in a way that will optimize the attainment of the learning goal. We also learned about different components which should be utilized in educational and training contexts. Different components of elaboration theory are; elaboration sequence, learning pre-requisite sequence, summariser synthesizer, cognitive strategy activities, and learner control. In this unit, we also discussed how an elaboration sequence can be developed and what are the different steps for developing an elaboration sequence.

7.8 CHECK YOUR PROGRESS: POSSIBLE ANSWERS**Check Your Progress 1**

- 1) Please see section 7.3. Elaboration theory as a macro-level theory prescribes methods that deal with many related ideas and how to sequence these ideas. The macro-level is made up of four areas such as selection; sequencing; synthesizing and memorizing of subject matter content.
- 2) Please see section 7.3. Explain studying a subject matter through the elaboration theory, it is similar to studying a picture through a zoom lens of a camera where the zoom lens allows a person to see the major parts of the picture and the major relationship among these parts. While zooming in allows one to see the major sub-parts of a part and zooming out gives a view of context and review.

Check Your Progress 2

See section 7.4. Different components of elaboration theory are:

- i) An elaboration sequence
- ii) Learning Pre-requisite sequence
- iii) Summarizer
- iv) Synthesizer
- v) Cognitive strategy Activator

Check Your Progress 3

- 1) Please see sub-section 7.4.6. The concept of learner control refers to the freedom of the learner for selection and sequencing of content explain the idea of (i) content control, (ii) display control and (iii) conscious cognitive control.
- 2) A summarizer is a strategy component that reviews systematically the learned material to minimize forgetting, while a synthesizer is a strategy component for relating and integrating ideas. .

Check Your Progress 4

- 1) Please see sub-section 7.5.2. Please write the steps of the first learning episode.
- 2)
 - i) Topical sequencing: Here a topic is taught to whatever depth of understanding is required before moving to next.
 - ii) Spiral sequencing: Here the learner learns the basics of one topic, then another, then another.

Check Your Progress 5

Please see section 7.6 Please write about the relationship between the ideas of elaboration theory with instructional design. For example how the simple to complex sequence allows the learner to learn at the level of complexity, the zoom lens can help in better understanding of complex subjects, pre-requisite sequencing and its effect on better understanding of subjects by learners.

