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Inductive Thinking Model of Teaching: Increase Capacity to Handle Information

*Dr. Mujibul Hasan Siddiqui

* Assistant Professor, Department of Education, Aligarh Muslim University, Aligarh Uttar Pradesh

ABSTRACT

Hilda Taba made induction thinking model of teaching. This model of teaching is based on the work of Hilda Taba – "Teaching Strategy" in the Contra Costa School District. Hilda Taba provided three postulates about thinking. These are such as thinking can be taught, thinking is an active transaction between the individual and data, processes of thought evolve by a sequence that is "lawful." Hilda Taba in her analysis of thinking concluded that: "While the processes of thought are psychological and hence to subject to psychological analysis, the product and content of thought must be assessed by logical criteria and evaluated by the rules of logic." She said that thinking skills should be taught using specific teaching strategies designed for those thinking skills. Model of teaching has some steps such as syntax, social system, principles of reaction, support system, application, instructional and nurturant effect. The sequence of different activities make syntax of the teaching strategies. Each and every strategy has its three phases as under: Strategy I: Concept Formation Phase One: Enumerate and list Phase Two: Group Phase Three: Label, Categorize Strategy II: Interpretation of Date Phase Four: Identify dimensions and relationships Phase Five: Explain dimensions and relationships Phase Six: Make inferences Strategy III: Application of Principles Phase Seven: Hypothesize, predict, consequences Phase Eight: Explain and/or support the predictions and hypotheses Phase Nine: Very the prediction

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Hilda Taba made induction thinking model of teaching. This model of teaching is based on the work of Hilda Taba – "Teaching Strategy" in the Contra Costa School District.

Postulates of Thinking:
Hilda Taba provided three postulates about thinking. These are as under:
1. Thinking can be taught.
2. Thinking is an active transaction between the individual and data.
3. Processes of thought evolve by a sequence that is "lawful."

Hilda Taba in her analysis of thinking concluded that:
"While the processes of thought are psychological and hence to subject to psychological analysis, the product and content of thought must be assessed by logical criteria and evaluated by the rules of logic."

She said that thinking skills should be taught using specific teaching strategies designed for those thinking skills.

Models of Teaching:
Model of teaching has some steps such as syntax, social system, principles of reaction, support system, application, instructional and nurturant effect.

Syntax:
The sequence of different activities make syntax of the teaching strategies. Each and every strategy has its three phases as under:

Strategy I: Concept Formation
Phase One: Enumerate and list
Phase Two: Group
Phase Three: Label, Categorize

Strategy II: Interpretation of Date
Phase Four: Identify dimensions and relationships

Phase Five: Explain dimensions and relationships
Phase Six: Make inferences

Strategy III: Application of Principles
Phase Seven: Hypothesize, predict, consequences
Phase Eight: Explain and/or support the predictions and hypotheses
Phase Nine: Very the prediction

Concept Formation:
Concept formation includes identifying and enumerating the data that are relevant to a problem, grouping those items according to some basis of similarity and developing categories and labels for the groups. The teacher tries to encourage the students to find out, enumerate and make the list of significant information related to a problem. ON the basis of similarity, the students make the various groups of information. The students further try categories and label for the groups. For sake of engaging students in each of these activities.

Hilda Taba invented eliciting questions matching to a specific type of activity. The questions are as under:
1. What did you see? Inducing learners to enumerate a list.
2. What belongs together? Grouping of information
3. What would we call these groups? Developing labels or categories.

The objective of this strategy is to encourage the learners to increase the conceptual system of information processed by them. In the first phase the learners are expected to make the group of data and perform activity of enhancing their capacity to handle information at the best possible level for the sake of increasing their thinking power.

The following table shows about the strategy of concept formation:

	Overt Activity	Covert Mental	Eliciting Questions
1.	Enumeration and listing	Differentiation (identifying separate items)	What did you see? Hear? Note?

2.	Grouping	Identifying common properties, abstracting	What belong together? On what criterion?
3.	Labeling categorizing	Order of items super and sub-ordination	How would you call these groups? What belongs to what?

Interpretation Data:
The next teaching of strategy is interpretation of data. This teaching strategy depends on the whole mental operation consisting the process of interpreting, inferring and generalizing. The teacher may use the questions to elicit the activities for identifying ponts.

After reading about the economic system of America, India, Iran, and Saudi Arab, the teacher asks the question such as under:

Question:
"What are important aspects of the economic system of these four countries?"

The teacher includes the other students to explain different items of identified information relating to point to each other. The teacher asks the questions based on causes and effects. The teacher may ask the question such as under:

Question:
"Do you think the economic systems of the four countries are very similar or different? Why?"

Or
"Describe a product and show the ways in which they might handle the product, similarly and differently."

"Are the economic systems of the four countries based on the value of the same metal? If so, how does this make them similar to and different from each other?

In the next phase, making inferences, the teacher asks the question such as under:

Question:
"What effect does the economic system have on the relative position of a country."?

or
"If the currency of all four countries is based on the value of gold what does this mean for the relative position of the countries?"

The whole strategy interpretation of data is show in the following table.

Table No. 2
Interpretation of Data

Overt Activity	Court Mental Operations	Eliciting Questions
1. Identifying points	Differentiating	What did you notice? See? find?
2. Explaining items of identified information	Relating points to each other. Determining cause and effect relationships	What did this happen.
3. Making inference	Going beyond what is given, finding implications, extrapolating	What does this mean? What picture does it create in your mind? What would you conclude?

Application of Principles:
The third teaching strategy given by Hilda Taba is application of principle. At this stage, the teacher induce the students to explain new phenomena. The first two teaching strategies are followed by the third teaching strategy application of principles. The students start from concept-formation activities to

interpretation of data then to activities desiring application of principles. At each and every phase, students would be expected to enhance their ability to handle information.

The following table shows the whole stage of application of principle.

Social System:
In the social system of this model of teaching, an environment of the classroom is very cooperative on the basis of the mutual and high feeling of emotional activities. In most of the cases the teacher begins with the activities of the phases. The teacher prepares all activities in sequence hand. The teacher starts in a controlling and cooperative position. The students try to learn the strategies. Therefore, they are treated as greater control.

Principles of Reaction:
The most important tasks of the teacher are as under:
1. To provide clear guidelines for activities of reacting and responding within each phase.
2. To make the cognitive task at the optimum level.
3. To complete the enumeration and listing activities before hand.
4. To monitor the students to handle information properly.
5. To construct suitable eliciting questions.
6. To make the students ready for new experience and cognitive activities.

Support System:
These three teaching strategies could be used in any subject, curricular area or learning activities having huge amount of information need to be organized. Here, the task of the teacher is to support the students to make the whole process of data in increasingly complex ways. The teacher of the same moment further help the students enhance the general ability of their system for processing data.

Application:
The use of model of teaching is as under:
1. To increase the capacity of thinking.
2. To make the process of huge amount of information.
3. To apply in any curricular area.
4. To enhance productive and creative thinking.
5. To use information for problem solving.
6. Concept formation strategy is useful for young students.
7. To help the students understanding the nature of concept.
8. Useful for active learning desiring manipulable materials.
9. Useful for higher learning students who learn and make the whole process of large information.
10. To make larger conceptual schemes on the basis of pulling discrete items together.

Instructional and Nurturant Effects:
This model of teaching is designed to instruct students in concept formation activities and teach various concepts on the basis of large amounts of raw data. The nurturant effects of this model of teaching is to develop attention on logic language, meaning of words and the nature of knowledge. Instructions and nurturant effect of this model of teaching is shown in figure as under:

_____ Instructional
------------- Nurturant
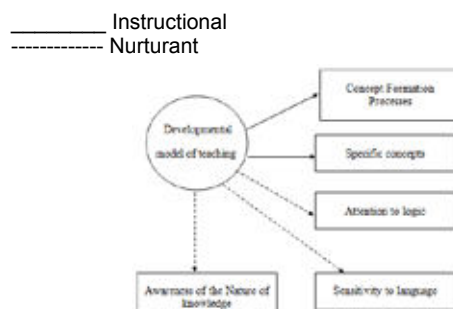
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