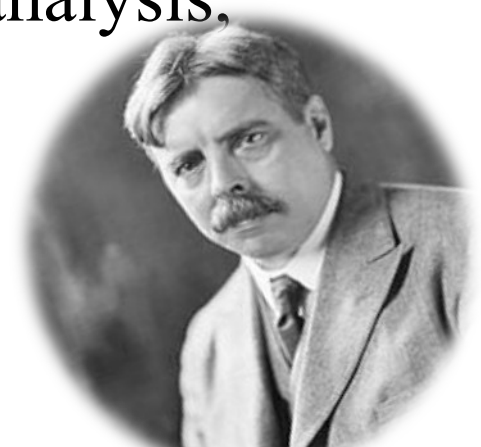# ANALYTICO-SYNTHETIC METHOD OF TEACHING MATHEMATICS

WHAT IS ANALYTIC METHOD?

ANALYTIC METHOD

- The term "**Analytic**" is derived from word 'Analysis' which means **to break or resolve a thing** into its constituent elements.

- It is a method of unfolding of the statement in question or conducting its different operations to explain the different aspects minutely which are required for the presentation of pre-discovered facts

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- This method includes **breaking up the unknown problem into simpler parts** which can be recombined to find solutions.

- The procedure adopted is to go '**from unknown to known**' and find out desired results.

- The great psychologist, **Thorndike,** supported this method. He believed that through analysis, the highest intellectual performance of the mind is possible

1) Example:

In $\mathcal{ALGEBRA}$,

If $a/b = c/d$, Prove that

$ac+2b^2/bc \quad = \quad c^2 + 2bd/ cd$

Proof:

Identify

$ac+2b^2/bc \qquad = \quad c^2 + 2bd/ cd$

$(ac+2b^2)\, cd \;=\; bc\,(c^2 + 2bd)$

$acd+ 2b^2d \qquad = \; bc^2+ 2b^2d$

$acd \qquad = \; bc^2$

$a/b \qquad = \; c/d$

But,

$a/b \; = \; c/d \,(given)$

Thus identified $\;ac+2b^2/bc = c^2 + 2bd/ cd$

MERITS OF ANALYTIC METHOD

➢This method is **a *Logical method*** and there is no room for doubts in the mind of learners.

➢***Thinking and reasoning power*** of children is developed by this method.

➢***The Self confidence of learners develop***.

➢ It encourages *Scientific originality* and *creativity* among learners

➢ *Logical approach to prove proposition and statements .*

➢ *Active participation* in teaching/ learning process.

➢ The *learner gets clear understanding* of the topic and helps him to go through the whole process himself.

➢ Child proceeds **from unknown to known**

DEMERITS OF ANALYTIC METHOD

➢ This method is a *lengthy method.*

➢ It is *not possible* to learn *all topics* through this method.

➢ This method *is not suitable to all age groups* students.

➢ The method is **not useful at lower stage** of mathematics learning which involve objective thinking and exploratory approach.

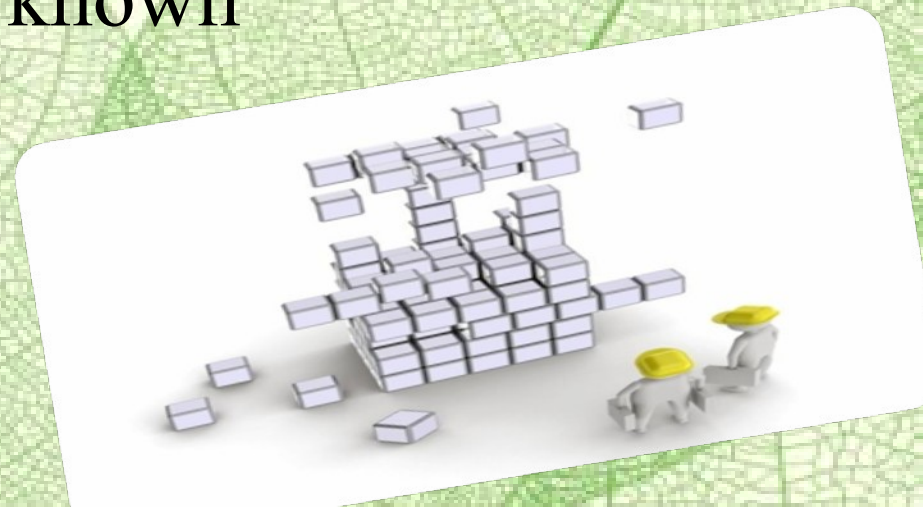➢ The method has *slow speed, Time* **taken for reasoning and thinking is long.**

WHAT IS SYNTHETIC METHOD?

SYNTHETIC METHOD

❖ This method is *opposite of analytic* method as synthesis is compliment of analysis.

❖ The term '*synthetic*' is derived from word "**SYNTHESIS**" which means to *combine together*.

❖ Child proceeds *from known to unknown*

❖ Facts already known are applied to new situations so that the combination of known

   facts help us to find new

   facts.

Example:

In **ALGEBRA**,

If $a/b = c/d$, Prove that

$ac+2b^2/bc = c^2 + 2bd/cd$

Proof: **Given**

$a/b = c/d$
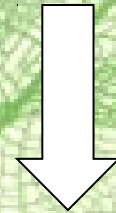
Add 2b/c to both sides-

$a/b+2b/c = c/d+2b/c$

$ac+2b^2/bc = c^2 + 2bd/cd$

Hence proved.

$a/b = c/d,$

$ac+2b^2/bc = c^2 + 2bd/cd$

| 1 | 2 | 3 |

MERITS OF SYNTHETIC METHOD

- IT **Saves time** and labour as the method is a short method.
- Majority of *learners benefitted* by this method .
- Most of **the** *topics in mathematics* are *covered* by this method.
- There is *systematic presentation* of facts which makes the method a neat one.
- The memory of the learner is *glorified.*
- *Accuracy* is developed by the method.
- Child proceeds **from known to unknown**.

DEMERITS OF SYNTHETIC METHOD

➤ There is *possibility of forgetting* in this method.

➤ learners become *passive listeners* and they resort to cramming.

➤ Teacher is *unable to carry all in the class* with him.

➤ Learners have *least confidence*.

➤ It *increases the elements of doubt* among learners.

➤ *Thinking and evolving* a sense of discovery among learners.

CONCLUSION

   In teaching of mathematics, both analytic and synthetic method should go together. If a teacher uses synthetic method, students reach the goal but they are blind folded guys. Thus Synthesis require help of analysis.

   Analysis leads to synthesis and synthesis makes purpose of analysis clear. To understand mathematics use analytical approach and to retain knowledge and get work done fast, use synthetic approach.

Therefore ANALYTICO SYNTHETIC METHOD.

Both are interdependent. Analysis forms beginning and synthesis is for follow up. Student should be made to discover demonstration by analysis.

"*Analysis is a method of discovery, synthesis is a method of concurred elegant presentation*".

Thank you!