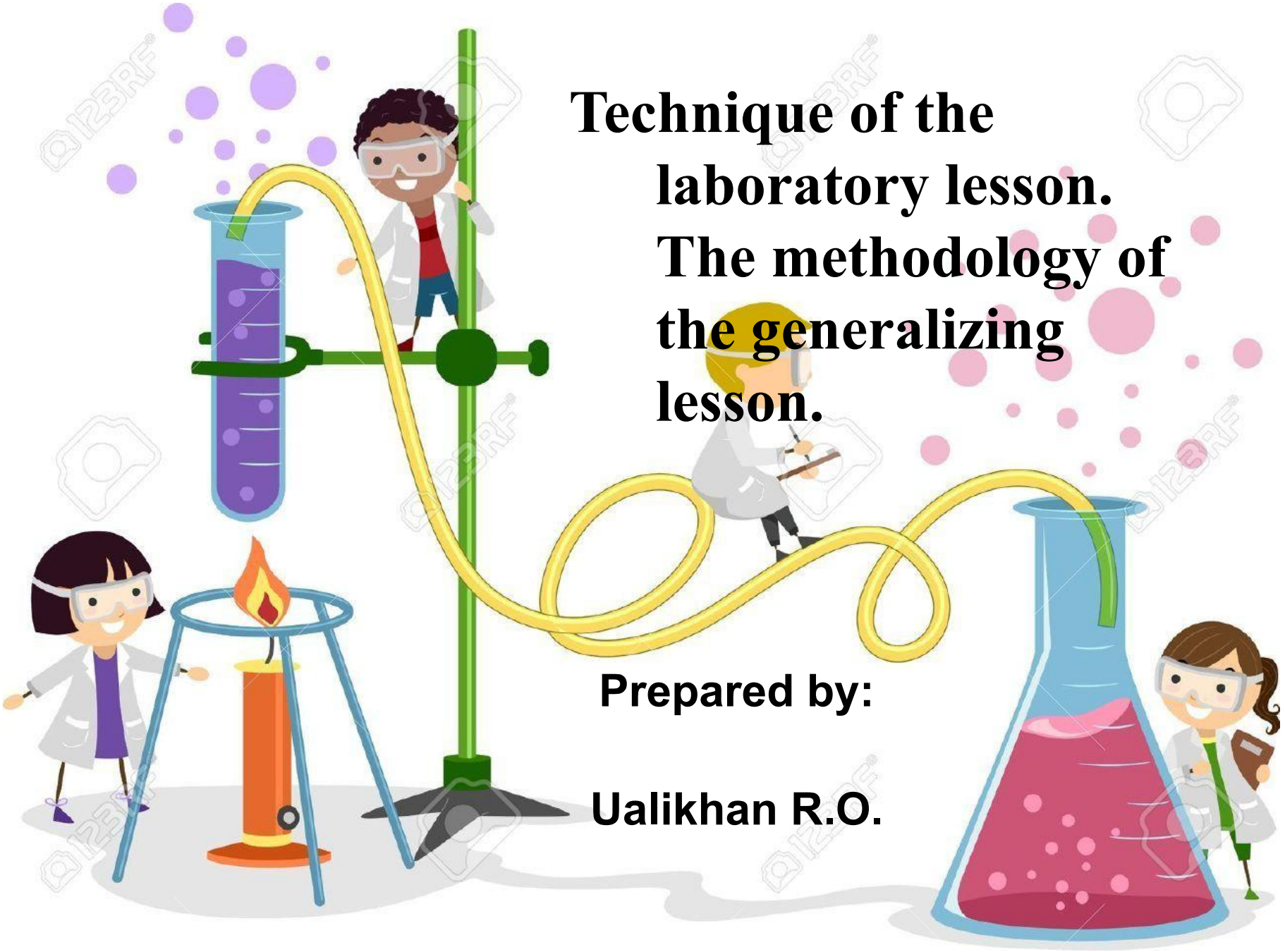


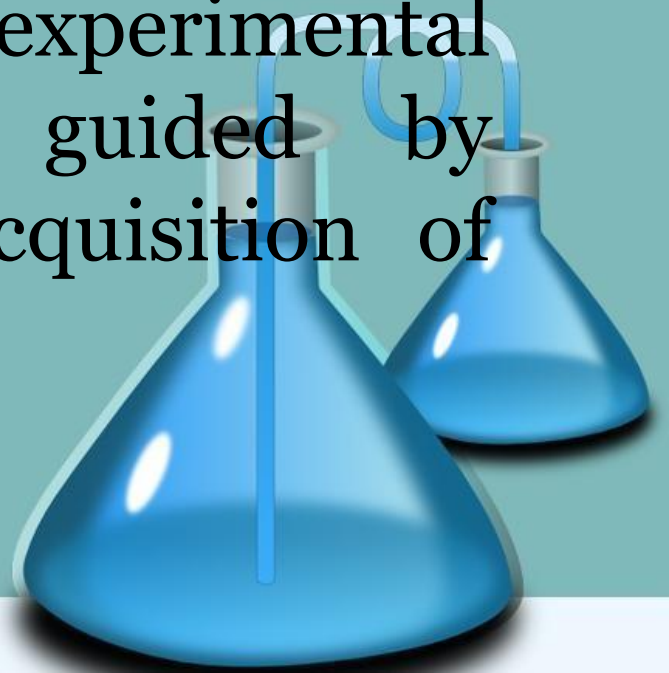
Technique of the laboratory lesson. The methodology of the generalizing lesson.

Prepared by:

Ualikhan R.O.

Features/Characteristics:

- Utilizes raw data or material things to promote better understanding of the subject matter or lesson.
- To promote information acquisition through observation, experimental solutions to problems guided by reflective thinking and acquisition of skill in manipulation.
- Learning by doing.



Features/Characteristics:

- Provides students opportunities to conduct or participate in original research.
- Develops skill in using laboratory equipment and instruments.
- Enhances higher order thinking skills. (HOTS)

Major Goals of Laboratory Works:

- Teaching Manuals and Observational skills relevant to the subject.
- Improving understanding of methods of scientific inquiry.
- Developing problem solving and doing by self skills.

Steps In Laboratory Method:

1. **Preparation / Introductory Step**

In this step which provides for motivation and orientation, the following factors should be taken into account.

a. Review of past lesson relevant to the present for apperception and motivation.
b. Raising and defining the work to be done.
c. Expected learning outcomes.
d. Planning.

2. Actual Work Period

a. Students work under the supervision of the teacher.

b. Students may work individually or collectively on a particular problem or on different problems and directions must be very specific.

Guidelines in Using:

1. Make use of the power of observation and reasoning.
2. Manipulate learning equipments.
3. Make use of reality to make learning easier and more permanent.

Guidelines in Using:

4. Make use of the scientific attitudes.

5. Use the laboratory method or procedure.

Types of Laboratory Method:

1. **Experimental**

– aims to train students in problem solving with incidental acquisition of information and motor skills, emphasis is on discovery, original procedure, and solution of problems.

Types of Laboratory Method:

2. Demonstration

– is a process of presenting or establishing facts or principles. It is a procedure of doing or performing something in the presence of others or either as a means of showing them how to do it or illustrating a principle.

Types of Laboratory Method:

3. Culminating Activities

When the members of a class have completed their laboratory work, the class should meet for discussion and organization of findings or for presentation of the results of individual work.

The following types of activities may be used:

1. Students re-state the problem that the group has been working on and explain its nature and importance.
2. Review of the plan for solving the problem and organization of plan for recording the data gathered.
3. Presentation of illustrative material or special contributions by students working on special problems.
4. Where students are working on individual projects, special reports may be given before the group, together with an exhibition of their work.
5. Note-books and written reports may be completed for final record of work.

Advantages

Advantages:

1. Students learn by doing and come in contact with raw data or materials object in teaching learning process.
2. Develops the power of observation and reasoning.
3. Develops the scientific attitudes.

Advantages:

4. Gives an understanding of what research is and how to apply the scientific method of research.
5. Gives training in organizing data gathered from real materials object and how these objects are manipulated to attain the objectives.
6. Since students come in contact with real life situations, it can be a preparation for solving real life problems.

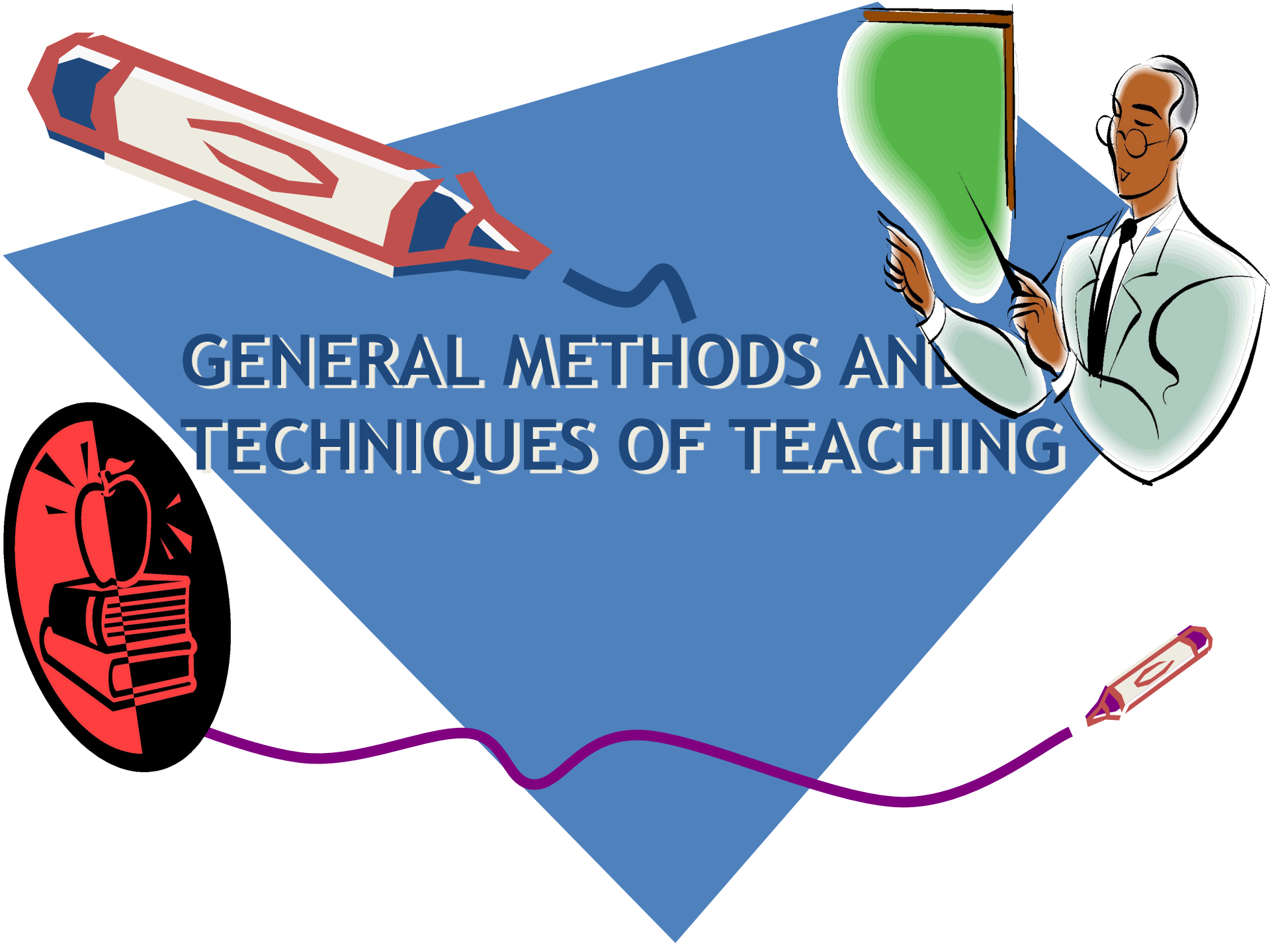
Disadvantages

Disadvantages:

1. Uneconomical way of learning in time and material.

2. Does give much training in verbal expression and when the time equipment is used, most of the time, its use becomes mechanical.

   Ex. Used without much thinking anymore.


GENERAL METHODS AND
TECHNIQUES OF TEACHING

Basic Concepts:

Approach - one's viewpoint toward teaching
Method - a series of related and progressive acts performed by a teacher and students to achieve the objective of the lesson.
Technique – the personal art and style of the teacher in carrying out the procedure of teaching.
Strategy – set of decisions to achieve an objective that results in plan.

METHODS OF TEACHING

Two Types of Teaching Methods

Direct Approach

EXPERIENTIAL APPROACH

Direct Methodologies : Expository

When to use

Direct Instruction Expository Strategies

Types of Subject Matter

Content-Oriented

Desired Outcomes

Factual Information

Learning Environments

Similar

Constraints

Information directly available- no effort to look for it

Guided Instruction Exploratory Strategies

Types of Subject Matter

Experience –Oriented

Desired Outcomes

Deveopment/Formulation of Concept, Principles, Skills, Attitude and Values

Learning Environments

Different

Constraints

Information not available- needs to be discovered yet

Characteristics

Expository Strategy	Exploratory Strategy
• Less delivery time • Utilizes expositive strategies such as: Direct teaching, Deductive Process, Teacher controlled method • Less student involvement	• More delivery time • Utilizes discovery strategies such as: Inquiry teaching, Inductive process, Teacher facilitated method • High student involvement • Active-----interactive

1.1 ***Deductive Teaching*** **: process of teaching that starts with a rule or general statement that is applied to specific cases/examples**

1.2 ***Expository or Deductive Method*** **: a telling method where facts, concepts, principles and generalizations, are stated presented, defined, interpreted by the teacher and followed by the application of testing of three concepts, principles, generalizations in new examples generated by the student.**

1.3 Demonstration : **telling and showing method perform usually by a teacher or a trained student while the rest of the class become observer.**

2. Experiential Methodologies; Exploratory

2.1 *Inductive* **: an exploratory method of logic where one arrives at a fact, principle, truth or generalization.**

: Formulating conclusion, a definition, a rule, a principle or a formula based on knowledge of examples and details

Studying: observing, comparing many instances or cases in several instances to discover the common element and form generalization.

2.2 *Discovery* : a method in which thoughts are synthesized to perceive something that the individual has not known before.

: the learner gets directly involved in learning

: learning is a result of the learners own internalized, insights, reflection and experiences

2.3 ***Problem Solving Method*** **: any purposeful activity that will remove a recognized difficulty or perplexity in situation through the process of reasoning.**

2.4 ***Project Method*** **: a significant practical units of an activity of a problematic nature carried on by students in a lifelike manner and in natural setting. It maybe a construction, an enjoyment, a problem or a learning project.**

2.5 *Laboratory Method* : a set of first hand learning activities wherein the individual investigates a problem, conducts experiments, observes, process or applies theories and principles in simulated setting.

2.6 *Inquiry Teaching* : Learners are confronted with a puzzling situation and are to enter into investigative work to solve a problem

2.7 *Reflective Teaching* : an on-going process that enables individuals to continually learn from their own experiences by considering alternative interpretations of situations, generating and evaluating goals and examining experiences in the light of alternative goals and hypothesis.

-A teaching approach that brings the individual to continually learn from their experiences through analysis of their own experiences, actions, decisions, beliefs in the light of alternative goals and hypothesis.

- The act of teaching that focuses thought on certain phenomenon through inspection and analysis.

2.8 Metacognitive Teaching : a teaching approach
where learners are trained to become aware of and exert control over their own learning by using metacognitive processes.

2.8.1 Cooperative Learning Strategy : a type of group work in which two or more students interact with the common goal of mastering specific academic materials, sample approaches.

SAMPLE APPROACHES

1. STAD - Student Teams Achievement Approach (Slavin)

Academic information are presented each week through verbal text.

Students are divided into learning teams of four members (heterogeneous)

Team members help one another to master the academic materials using worksheets, tutoring quizzing, one another, and team discussion.

Quizzes are administered weekly/biweekly and scored and each student is given improvement score.

Improvement score is recorded, based on the degree to which the scores exceed the student's past averages.

Individual improvement scores are added to give a team score.
Team success is acknowledged through short newsletter containing the learning outcomes.

2. JIGSAW I (Dronson, etc.)

Student is assigned to heterogeneous study home teams.
Academic materials divided into clearly defined sections presented to the students in text form.
Within each team, one student is responsible for mastering each section.

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THANK YOU. YOU'RE AWESOME.