

# Discovery learning

By

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## Concept of Discovery Learning

- ❖ Discovery learning is a learning Model introduced in 1960 by one of the founders and constructivist theory Jerome Bruner. But closely related to works of Jean Piaget Vygotsky John Dewey and Seymour Papertmma and later further developed by other researchers. Bruner theory is considered to be fully constructivist in nature.
- ❖ Discovery learning according to him is an inquiry based instructional and self-exploration approach in which the learner builds new knowledge from prior knowledge **and** active experience. Learners are given the opportunity to conduct research, build skills, and look at the problem from every angle, which allows them to reflect on the topic and assign meaning to core concepts and ideas.
- ❖ **Meaning of Discovery learning**
- ❖ In contrast to classical teaching methods in which the learner is usually passive and expected to assimilate the knowledge presented by the teacher, Discovery learning offers a *learner- centered approach* in which the learner discovers new knowledge through *active, hands on experience* and constructs new concepts based on his existing knowledge. This kind of learning is oriented on the *process of learning*, rather than on **its content and information**
- ❖ **According to Bruner** practice in discovery for oneself teaches one to acquire information in a way that makes that information more **readily viable/FEASIBLE** in problem solving.

- ❖ Another important aspect of Discovery learning is the failure which is viewed as an important element of learning to the extent that the learner hasn't really learned anything if he hasn't failed during the learning process.

**The main characteristic/ attributes of Discovery learning as described by Backmell-Holmer and Hoffman are;**

- ❖ **Exploring and problem solving:** which stimulates learners to actively approach *creation, acquisition and generalization of new knowledge*, instead of **passively** being exposed to **lecturing and practice**.
- ❖ Taking responsibility for their learning in terms of the ability of the learner to choose their **own learning** and **building new knowledge from the existing knowledge**.
- ❖ **Discovery learning differs from classical learning** where in learners are active rather than passive learners, learning is process oriented rather than content oriented, value is important, feedback is necessary and understanding is deeper.
- ❖ Finally Discovery learning **satisfies natural human curiosity** and **promotes individual interest**.

### **The 5 Principles of Discovery Learning Model**

The Discovery Learning Model integrates the following 5 principles:

- ❖ **Principle 1: Problem Solving.**

Instructors should guide and motivate learners to seek solutions by combining existing and newly acquired information and simplifying knowledge. This way, learners are the driving force behind learning, take an active role and establish broader applications for skills through activities that encourage risks, problem-solving and probing.

- ❖ **Principle 2: Learner Management.**

Instructors should allow participants to work either alone or with others, and learn at their own pace. This flexibility makes learning the exact opposite of a static sequencing of lessons and activities, relieves learners from unnecessary stress, and makes them feel they own learning.

- **Principle 3: Integrating and Connecting.**

Instructors should teach learners how to combine prior knowledge with new, and encourage them to connect to the real world. Familiar scenarios become the basis of new information, encouraging learners to extend what they know and invent something new.

- **Principle 4: Information Analysis and Interpretation.**

Discovery learning is process-oriented and not content-oriented, and is based on the assumption that learning is not a mere set of facts. Learners in fact learn to analyze and interpret the acquired information, rather than memorize the correct answer.

- **Principle 5: Failure and Feedback.**

Learning doesn't only occur when we find the right answers. It also occurs through failure. Discovery learning does not focus on finding the right end result, but the new things we discover in the process. And it's the instructor's responsibility to provide feedback, since without it learning is incomplete.

### **What are students doing during Discovery Learning?**

Students may be:

- researching information
- manipulating objects
- performing experiments
- having discussions and/or debates
- looking at other viewpoint
- asking deeper questions
- discussing ideas of knowledge gained or misconceptions with the teacher

## **What are considered to be the advantages of Discovery Learning?**

There are many advantages to Discovery Learning. These may include:

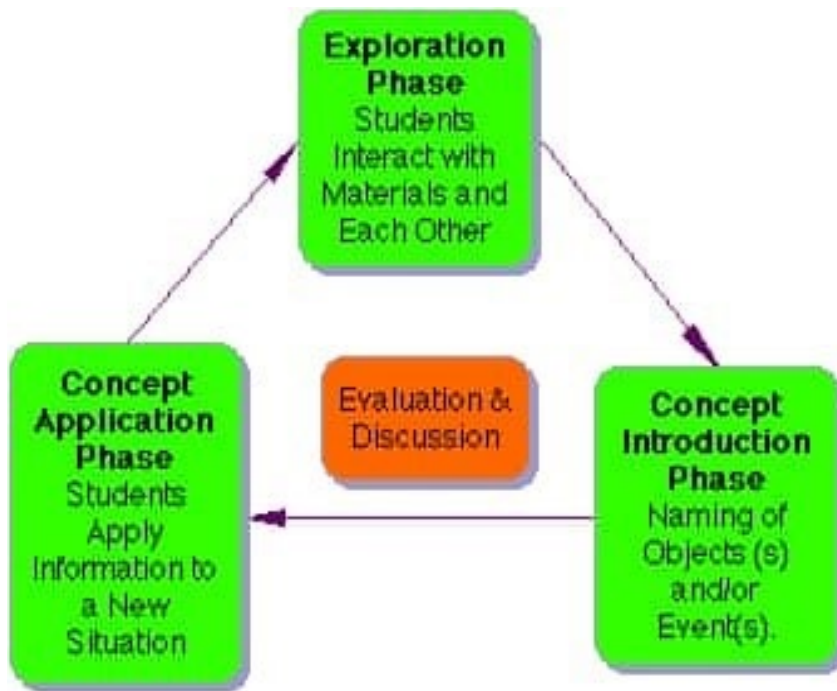
- students are more actively engaged
- students are developing their problem solving skills
- students are taking responsibility for their learning
- students are developing their creativity
- students are more motivated to learn information
- students are independent
- Students may have to work with others to discuss, analyze, and argue knowledge and or problems with understanding.
- Learning experiences and content can be geared more towards the students' abilities.

### **Learning cycle for Discovery learning:**

- The learning cycle is a sequential process for both learning and instruction.
- It places focus on a series of steps that arises a more thorough understanding and deeper application of content.
- It also pushes students towards enquiry and discovery in their learning.
- The original learning cycle was created based on ideas by Jean Piaget.
- The main goal was to match content mastery with students' cognitive development process.

This cycle consists of three basic steps such as:

- Exploration
- Concept development(Sometimes called invention) and
- Concept application.



- **Exploration:** In the first phase students' work on their own in small groups to explore scientific phenomena, manipulate materials and attempt to solve problems. The teacher acts as a facilitator posing questions and providing assistance as needed. Students have the opportunity to develop their own hypothesis and to test them through hands-on experience (Experiment) or observation.
- **Concept development:** In the second phase of the learning cycle the teacher leads the students through the introduction and development of the scientific concepts which are central to the lesson. The students may begin to learn by sharing their observations and ideas from the exploration phase. The teacher may then use written or audiovisual materials to develop the concept and introduce relevant vocabulary.
- **Concept application:** The teacher now poses new situations that are a problem for the students to solve based on their initial exploration and on the concepts there are refined in the second phase. As in the first phase the students work individually or in small groups while the teacher acts as a facilitator. The learning cycle may then begin again as these hands-on activities become the starting point for the exploration and development of related concepts.
- **DISCOVERY LEARNING- CLASSROOM INSTRUCTION STRATEGIES**

- **CREATING THE RIGHT CLASSROOM CLIMATE:** Jerome Bruner introduced Discovery Learning in the 1960's, which is an inquiry-based approach that encourages learners to seek out information on their own. Instead of simply being handed the solution to a problem, a learner must use their preexisting knowledge and available resources to arrive at their own conclusion. This is to ensure that students feel, Secure, safe and are engaged with their own learning. The classroom environment increases student's participation and involves self-Discovery. Learning decreases when students feel threatened or an unchallenging environment.
- **Classroom plan:** According to Bruner, instructors serve as facilitators who create lessons and training materials that provide the necessary structure and basic information. For this reason, Discovery Learning, instructional strategies is considered to fall into the area of constructivism, as the learner takes an active role in the learning process and interprets the concepts and ideas autonomously. Therefore, the classroom displays and arrangements must be functional and inviting.
- **Organizing classroom:** Create classroom arrangements that allow for activities that require movements, stations or centers can be created for long-term learning and involvement. Use computers and access other technologies that would help with their learning.
- **Developing routines and procedures:** Create a limited number of rules that are clear, specific and stated in a positive manner. Always involve students in the process of developing, understanding and maintaining the routines and procedures and also need to practice and reinforce these routines and procedures throughout the school year.
- **Assigning and managing work assignment:** As a facilitator you need to provide meaningful and relevant assignments. Involve students in real world scenarios that have a purpose. It will be amazed students' abilities when they have an assignment that involves real world purpose.
- **Preparing for instruction:** When students are actively involved in their learning discipline problem will be decreased. Keep students involved in the planning and preparation of the units of studies and make them a part of planning, implementation and evaluation of units of study. Students can compose a real proposal that could be submitted to the Corporation, City Council or organization that needs fresh ideas.

- **Discussing the behavior in the classroom:** Always communicate and reinforce class routines and procedures. Have students and force these and have classroom discussion on procedures that need to be added. The teacher will be surprised how well his classroom will function when the students' have voices.
- **To keep classroom running smoothly throughout the school year:** Always reflect and evaluate each day or week during the school year. Do not settle for less than students' best efforts. Always celebrate success.

**ACTION PLAN OF IMPLEMENTING DISCOVERY LEARNING IN B.Ed CLASSROOM**

SL.NO	TOPIC	ACTIVITY PLANNED	PROCEDURE
1	Understanding the Concept of Discovery Learning	<b>Games-</b> <b>1. MAD-Ads</b> <b>Topic: Advertisement of local products in unique and humorous ways</b>	<b>MAD-Ads</b> <b>-The class gets divided into groups consisting of 6-7 members. - Appropriate instructions regarding both the games to be given to all the groups</b> <b>- Time to be given is 15 mins for the game to planned. And each group should present in the form of acting or any innovations.</b>

		<b>2. Dumb Charred Act- Group activity</b>	<b>Two groups should be made . The game strategy was , From each group one member shows actions of a sentence or a riddle. The opponent team should identify the gestures, body language and hand movements and frame sentence or the riddle.</b>
<b>2.</b>	<b>Discovery learning cycle</b>	<b>Activity of thinking novelty for the given topics like Cooking, Uniform designing, Modern cycle, Poetry, How to manage finances and reduce expenditures etc in sequence Exploration, Concept Development and Concept implementation</b>	<b>For this activity the students would pick any topic of their choice , explore information, develop own material and present using unique ways of the topic chosen</b>
<b>3.</b>	<b>Concept , meaning, Learning Cycle, Principles of Discovery learning</b>	<b>Peer tutoring</b>	<b>Group of three students to be formed for both English and kannada medium, in which one has understood the</b>



			<p><b>topics and who could explain his team wherever required has to be selected. Questions regarding the topics should be framed for which the team has to discuss and write the answers.</b></p>
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