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Subject / Course:

*Techniques, Methods and
Approaches of Pedagogy.*

Assignment / Seminar on

Discovery Method.

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Introduction

Discovery learning is an educational approach where students actively explore concepts. It encourages critical thinking, problem solving skills, and self directed learning. Teacher act as facilitators, guiding and supporting students as they make their own discoveries.

The main principle of discovery based learning include problem solving, learner management, integrating and connecting and failure with feedback. These principles will help you to encourage students and guide them toward desirable results.

There are some discovery learning techniques you can implement for better outcomes. And these techniques are reflections, case studies, experiments and role playing. Each of these points is followed in the discovery learning educational approach. One of the most common theories in the e-learning field is based on discovery based learning.

Meaning of Discovery learning.

Discovery learning is a method of Inquiry based instruction that was introduced by Jerome Bruner. It is based on the fact that students acquire new knowledge by experiencing things themselves through discovery. In the case of discovery based learning, students actively take part in the lesson process rather than just being passive listeners.

This popular theory motivates students to build on past experience and knowledge. Due to this method they make use of their intuition, imagination and creativity to find facts, correlations and new truths. In such an environment, learners actively seek answers and the solutions. Meanwhile, the teacher acts as an instructor or guide. As we can see, this approach is similar to the silent way method.

Principles of Discovery learning model.

Every teaching method has principles to follow to achieve the best possible outcome. Here are the most common principles of the discovery based learning model.

1. Problem Solving:-

Discovery learning implies that the instructors encourage the learners to look for solutions themselves. In this process, the students should consider their existing and newly acquired information. In this way students become the driving forces behind the learning process. They take an active role, thus developing skills such as problem solving and investigating.

2. Learner Management.

The following characteristic typical to discovery learning is much easier learner management. Participants get the opportunity to work with groupmates or learn at their own pace. Such freedom and flexibility relieve the learners from unnecessary stress and make them feel their own learning.

3. Integrating and connecting

Trainers help their learners to combine prior knowledge with newly acquired one. At the same time, they motivate the learners to connect to the real world.

4. Information Analysis and Interpretation.

Discovery based learning is not content-oriented but process oriented. It is based on the assumption that learning is not an absolute set of facts. Students learn to analyze and interpret the acquired information.

5. Failure and feedback

Not only does learning occur when we find the correct answer, but it also does occur through failure. Failure is a great way to learn what works and what doesn't.

Discovery learning emphasizes the new things we discover. It doesn't focus on finding the right answer. As a result, it is the trainer's responsibility to provide feedback. Otherwise learning will be incomplete.

Discovery Learning Techniques & Examples

The discovery learning educational sessions should be well-designed, highly experiential and interactive.

As an instructor, we should use various format of educational content. It may include stories, games, visual aids, and similar attention-grabbing techniques. Such techniques will build curiosity and interest in learning. They may guide the learners in new way of thinking, acting, as well as reflecting. All the techniques and methodologies utilized in discovery-based learning may differ, but the final goal always stays the same.

1. Reflections.

Reflection is an efficient way to gain insight into what students ~~manage~~ to learn. You can have your students write reflections about a completed task. Another option is holding a group discussion. This way learners are able to analyze their experience and identify the key points of what they have learned. This increases the insightful learning.

2. Case studies

Using case studies has become an extremely popular technique recently. For this technique the large group is divided into small working groups. By this learner can analyze the real-life situation and find other possible solutions.

3. Experiments

Experiments are one of the most common techniques you can use for discovery learning. Especially if we are working with older students we can have them carry out their own experiments.

4. Role playing

We are most likely familiar with role playing techniques. It can be easily applied to discovery based learning. Role playing is another way for the student to know real-life situations.

* All the above techniques encourage collaboration, communication and emotional skill development.

Learners remember new concepts when they:

- Explore and manipulate situations.
- Struggle with questions.
- Perform experiments.

DISCOVERY APPROACH.

The children are being encouraged to be the discoverers of the nature of things. Children need to be engaged in 'real experimentation' and discovering things by themselves. Active participation of children in science lessons is possible through the use of inquiry and discovery strategy in teaching.

Discovery emphasises learning through experiences. Inquiry generally means to find information, to question and to investigate a phenomenon that occurs in the environment.

Discovery is the main characteristic of inquiry. Learning through discovery occurs when the main concepts and principles of science are investigated and discovered by students themselves. Through activities such as experiments, students investigate a phenomenon and draw conclusion by themselves. Teachers then lead students to understand the science concepts through the result of the inquiry.

Thinking skills and scientific skills are thus developed further during the inquiry/discovery process.

Discovery approach is recognized as constructivist. Constructivist approach puts emphasis on the constructivist of knowledge through interaction with the environment where learners negotiate meaning with others. Discovery approach provides a learning context where knowledge construction processes occur during processes where learners have hands on experiences to construct meanings. Discovery learning stresses that learners construct knowledge on the basis of new information as collected by them in an explorative learning environment.

This approach pertains basically to cognitive aspect of learning the development and organization of concept, ideas and insights, and the use of reference and other logical processes to control a situation.

Characteristic

1. It is inductive proceeding from the specific to general ones.
2. Freedom is necessary in the discovery approach.
3. The teacher helps the learners acquire knowledge, which is uniquely his own because he discovers it for himself.
4. The end of teaching, using this approach, is the acquisition of knowledge.
5. The students and not the teacher should be actively involved in the process of discovery.
6. The students look at the knowledge that they have discovered as something new to them.

Centering on a series of problem solving situations, the discovery approach, therefore calls for active student involvement. It is student-centered as well as self-directed learning.

Role of the teacher.

1. Patience is needed in this approach. It does not pressure his students but he gives them enough time to formulate the expected generalization.

2. The teacher should not answer for the students; he can give clues and hints instead. He does not generalize for them.

Advantages of Discovery approach.

- * The increase in intellectual potency
- * The shift from extrinsic to intrinsic motivation
- * The learning of the heuristics of discovery.
- * The aid to conserving memory
- * Supports active engagement of the learner in the learning process.
- * Fosters curiosity.
- * Enables the development of life long learning skill.
- * Personalizes the learning experience
- * Highly motivating as it allows individuals the opportunity to experiment and discover something for themselves.
- * Builds on learner's prior knowledge and understanding.
- * Develops a sense of independence and autonomy
- * Make them responsible for their own mistake and results.

- * Learning as most adults learn on the job and real life situations
- * A reason to record their procedure and discoveries such as not repeating mistake, a way to analyze what happened and a way to record a victorious discovery.
- * Develops problem solving and creative skills
- * Finds new and interesting avenues of information and learning - such as gravy made with too much cornstarch can become a molding medium

These sorts of arguments can be regrouped in two broad categories.

- Development of meta cognitive skills (including some higher level cognitive strategies) useful in life long learning.
- Motivation.

Disadvantages of Discovery approach.

- * Teachers are not trained properly to guide students learning through discovery.
- * Text books do not provide sufficient scope for discovery learning.
- * It is time consuming.
- * No syllabus is constructed on the basis of discovery approach.
- * Cognitive overload, potential to confuse the learner if no initial framework is available.
- * Measurable performance is worse for most learning situation.
- * Creations of misconceptions.
- * Weak students have a tendency to "fly under the radar" and teacher's ~~fail~~ to detect situation needing strong remediation or scaffolding.
- * Some studies admit that strong students can benefit from weak treatments and others conclude that there is no difference, but more importantly they also conclude that weak students benefit strongly from strong treatments.

Conclusion.

Discovery learning is an inquiry based learning method that takes a constructivist approach to education, where students are encouraged to construct their own knowledge through a self-directed learning process.

Discovery learning promotes student exploration and collaboration with teachers and peers to solve problems.

Discovery based learning has a number of benefits which help develop students. It encourages active engagement from students, promotes motivation, promotes autonomy, responsibility, independence, develops creativity and the problem solving skills and provided a tailored learning experience for that student. In this process the teacher is a facilitator rather than an instructor, and it is their role to organize a rich or appropriately resourced learning environment and to encourage the learner's self directed curiosity and skills.

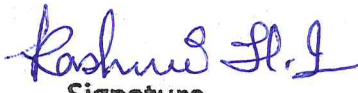
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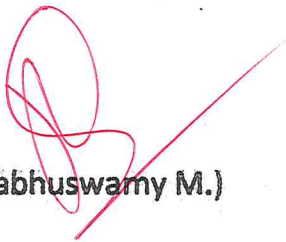
* Dr. Malini . L. (2016) "Techniques, methods and approaches of pedagogy .


* <https://inventionlandeducation.com/discovery-learning-method> .

Criteria in assessing assignment / seminar

Components	Max. Marks	Marks obtained
First draft	2	2
Quality of Information	2	2
Organization	2	2
Presentation	2	2
Discussion	2	1
Total	10	9


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