

- a. INNOVATIVE PROMOTION OF SCIENCE – FEYNMAN TECHNIQUE**
- b. Enhancement of Understanding of Concepts In Science**
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Abstract

Feynman Technique, named after the great Physicist Richard Feynman, aims at pinpointing a particular problem area and explanation of it in as simple language. Afterwards, the difficult parts are identified and reinforced with the help of study material.

A chapter of science of standard 7 was taken as sample. The sample chapter was divided in as many sub topics or concepts as possible. These topics were distributed to students. Students wrote their first impression on a paper about the paper. After a given time, they explained the given topic to the class. They referred to the text book regarding the difficult areas of the given concept during this given time.

The level of understanding of the students in the given chapter was much above than the chapters explained through the regular lecture method. The time taken to comprehend the whole chapter after integration of the explained subtopics was considerably less. The learners become able to relate real life issues with the concept they are currently learning.

Introduction

Innovative Promotion of Science – Feynman Technique

Innovation is a part of science. The term innovation encompasses within its territory various other aspects than making a landmark finding and creating devices useful for mankind.

Innovation can bring about landmark changes in the field of teaching – learning as well. An innovative technique can boost up the understanding and provide great depth in the knowledge of the learners, be it any subject of study.

Feynman Technique was named after the great Physicist Richard Feynman, who was known for his excellent explanation capacity of complex topics as well. Feynman Technique is one such innovative technique which makes understanding and learning simple and enables the learner to present any complicated/lengthy topic in his/her own language easily. This technique helps the learners to identify the problem areas inside a particular topic and rewrite the technical terms in simpler language. The learners explain the topic to a peer assuming the peer has no previous knowledge of the concept. That helps them to make their explanation more lucid and boost own understanding further. A connection with real life problems is established through this method.

Objective-

- To encourage and support the learners to identify all the secondary concepts under a main concept.
- To enable the learners to express their first hand impression on the concept.
- To encourage the learners to explain technical terms in simpler language.
- To help the learners to pinpoint the problem area.
- To help the learners to explain the concept to peers in easier language.
- To boost up confidence of the learners.
- To enable the learners to create real life link with the concept.

Methodology – Identification of the topic into subtopics, writing on paper, pinpointing the problem area, reference to text book, peer presentation.

Conclusion – Better identification of the problem area and simpler language to explain it results in better and quick understanding results in the learners.

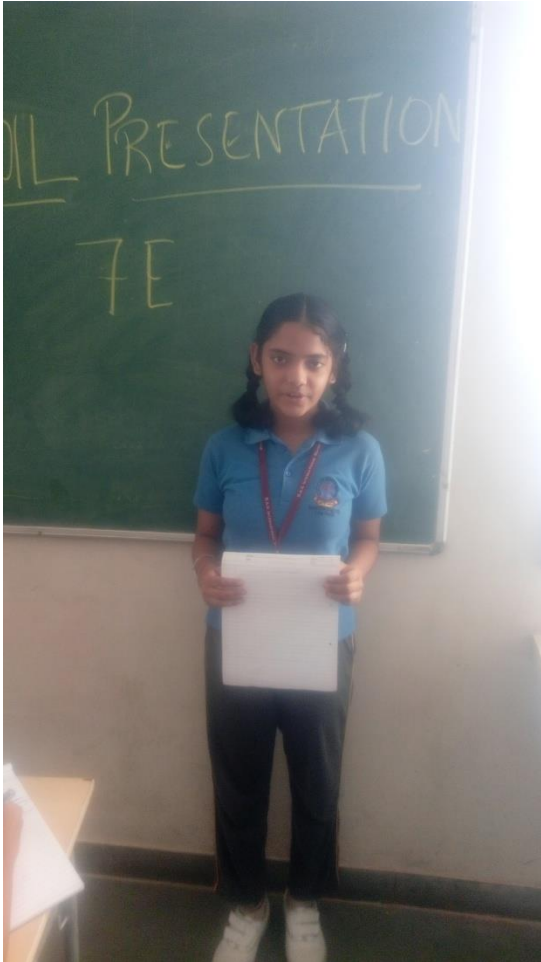
Case Presentation

- a. **Identification of the problem/challenging situation/issue to be resolved -**
Making understanding of the lengthy and complicated concepts of science easy and quick to understand. This would help the students learn the chapter faster besides providing them in depth knowledge of the concept. Here, the Chapter named “Soil” was taken as a sample. The targeted population was the students of class 7.
- b. **Analysis of the problem** – By breaking a concept into a set of pieces of sub topics, learning can be made easy and fast. By allotting a single subtopic to a student reduces the burden and enhances deep understanding. This technique emphasizes on another important aspect of learning – Peer explanation as well.
- c. **Objectives** – To meet the challenges faced by the learners while grasping a concept depicted in a chapter (“Soil” – Class 7) as a whole by breaking it into smaller sections, by explanation in simpler words and peer explanation.
- d. **Planning done** –
 - The chapter Soil was divided into 43 sub sections.
 - Each section was allotted to one student of class 7.
 - Each student immediately wrote down what they thought about the sub topic they got on a piece of paper.
 - Then they identified and pinpointed the problem areas in that sub topics that were difficult to understand.
 - Their source material that is the text book was referred afterwards to get idea about the pinpointed problem areas.
 - The topic was again written on the piece of paper using simpler language, avoiding any technical terms.
 - At the end, the subtopics were explained to the peers through class representation.
 - After all the sub topics were explained the students got an integrated comprehensive understanding of the larger concept.
- e. **Success criteria and possible alternatives decided** – Students feedback made it clear that this technique has worked better than any other technique used for teaching and understanding of concepts of science. Oral tests were taken to judge whether the understanding was really in depth.

To enhance the learning further, exchange of subtopics can be introduced while carrying on this technique.

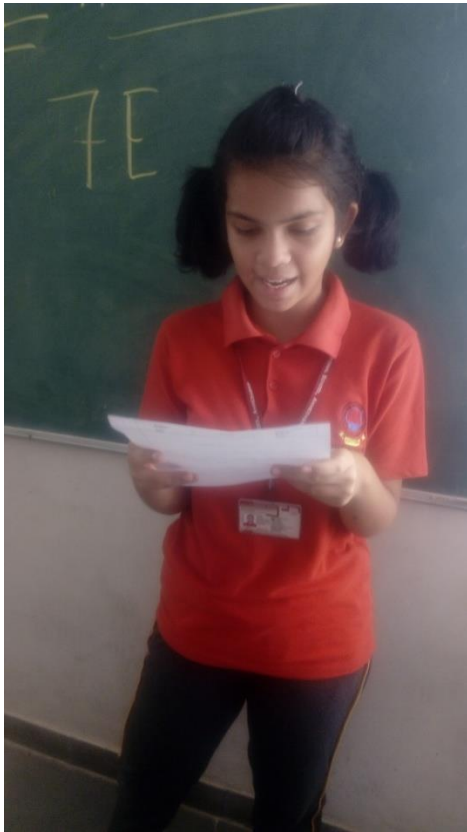
- f. **Implementation** – This technique can be implemented for any chapter where the underlying concept is either complicated or lengthy. This technique reduces the chances of students getting bored.
- g. **Challenges faced in implementation** – The greatest challenges faced was making the students ready to write the first hand impression on listening the subtopic as they do not feel confident enough to write anything before the formal explanation by the teacher. Breaking the habit of being passive learners in the class was another challenge. Apart from it, reluctance on the part of students to accept the explanation given by peers is also a great challenge.
- h. **Resource involved** – The main resources were internet and the text book of science of class 7.

Class 7 Student Akansha giving presentation on soil



Class 7 Student Arpita giving presentation on soil





Class 7 Student Misha giving presentation on soil



Class 7 Student Aishwarya giving presentation on soil

Class 7 Student Arya giving presentation on soil



Beneficiary Satisfaction

Application of Feynman Technique can be very useful in understanding complicated and lengthy concepts in science. This technique provides better grip on the various sections of a particular chapter as it gives chance of pin pointing the problem area. The explanation of the problem area in front of the class benefits the students by boosting their confidence. It also benefits the peers by providing them insight in several other areas apart from their own targeted problem areas.

Concluding Remarks

In this study, The Feynman Technique has been used to enhance the understanding in the field of science. But it can prove useful to many other streams or subjects also, like Mathematics, where the understanding of a particular concept acts as the pillar of understanding the whole chapter. With this technique any targeted area of any subject can get better insight and in depth perception.

Glossary

1. **Innovative** – Featuring new methods, advanced and original
2. **Feynman Technique** – An innovative technique named after Richard Feynman that involved breaking of a concept into number of subtopics and writing in simpler forms.
3. **Peer** – A person with same abilities as other persons in a group
4. **Perception** – The way in which something is regarded, understood or interpreted
5. **Problem area** – Points difficult to understand
6. **Pinpointed** – Identify with great precision or accuracy
7. **Lucid** – Easy to understand
8. **Population** – The total individuals making up a whole group
9. **Targeted** – Select as an object for a particular operation.