

THE WAYS OF USING FEYNMAN'S TECHNIQUE IN A CLASSROOM

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Richard Feynman was an American physicist who contributed to science with his works regarding quantum mechanics, the theory of quantum electrodynamics, the physics of the superfluidity of supercooled liquid helium, and particle physics. He was awarded the Nobel Prize in 1965. Since school times, he used to teach himself hard school subjects like advanced algebra, trigonometry, analytic geometry, differential and integral calculus, and infinite series. Young Feynman learned how to understand the harsh mass of theory by the simplest symbols; he tried to use clear-cut words instead of difficult, brain-challenging terms. After high school, he entered Massachusetts Institute of Technology, and majored in math and engineering, but soon changed it to physics. After MIT, he applied to Princeton University. Studying at Princeton, he ultimately shifted to using a more understandable explanation of things when he was studying physics. He even had a "NOTEBOOK OF THINGS he DOES NOT KNOW ABOUT". One of his main techniques in his learning process, and later in explaining his theories to people, was a technique that was named after him.

Feynman's technique is a method in learning when a person studies a new topic, then tries to retell it with the most uncomplicated words. In teaching, this method can be used too. We are committed to the following way by taking a careful attention to particular moments:

- * Students are given new material for learning it on their own. After learning the new material, students are asked to explain to each other what they have understood.
- * While explaining the new material to each other, students should use the most simple words, the most ordinary examples, and the most obvious and understandable comparisons and analogies.

There is a phrase, "If you cannot explain something to a child, it means you yourself do not understand that thing." Feynman's idea was to help all people, even children, understand the granite of science. In fact, sometimes when someone tries to deliver to the audience something using special terms and phrases, which an audience is not familiar with, there is very little and simple thing is the object of the topic. Feynman's easy-flowing techniques surprised people who used to spend much time explaining everything in a hard way.

Now we have the main question: In what ways can teachers use the technique? How can teachers profit from this technique? And how can students make their process of learning easier with the ideas of Feynman?

Feynman's technique can be utilized through making presentations: one student gives a presentation to the whole group;

Students can work in pairs and one by one explain topics to each other.

The technique of Feynman has its main 4 steps in usage by a student:

1. A student writes down the title of the topic
2. Uses the simplest language in writing the précis that a student is going to explain later

3. Point out the weak spots where a student is bad at understanding

4. the student makes the text easier to understand (a student looks where he/she is using special terms and he/she finds plain words to replace that term)

This technique is effective because students get an opportunity to cope with challenging topics by themselves; it builds creativity in students, no matter do they study math, biology, or literature, they can use their critical thinking and analyzing skills; this technique teaches students to work with an audience and improve their speaking skills; this technique helps to keep in mind more information and for longer time.

Bibliography:

1. Bazanov, Sergei. 2018. "Metod obuchenia feynmana." Bazanovblog. <https://medium.com/bazanov-org/%D0%BC%D0%B5%D1%82%D0%BE%D0%B4-%D0%BE%D0%B1%D1%83%D1%87%D0%B5%D0%BD%D0%B8%D1%8F-%D1%84%D0%B5%D0%B9%D0%BD%D0%BC%D0%B0%D0%BD%D0%B0-6abe6915ef8a>.

2. Gleick, James (1992). Genius: The Life and Science of Richard Feynman. Pantheon Books. ISBN 0-679-40836-3.

3. Schweber, Silvan S. (1994). QED and the Men Who Made It: Dyson, Feynman, Schwinger, and Tomonaga. Princeton University Press. ISBN 0-691-03327-7.