

## Learning – from Struggle to Excitement

Narendra Kothiyal



*This article is an account of student's experience in class and my experience with teaching-learning methods. It is an effort to share how teaching can be made more interesting and creative and studies can be made an enjoyable process.*

It gives me immense pleasure to share some of my experiences as a teacher that gave me a wonderful opportunity to learn new things which made me a better teacher. But before I do that, I would like to share my learning experiences from the past without which it may be difficult to perceive the changes that took place in my teaching style.

Let me take you back in time - about 20-25 years back when we were studying in school. As students, while trying to understand any topic, we felt that we needed additional information to grasp the concept fully. It might have been a small piece of information that was required, but it was critical to the process of understanding that particular concept in the absence of which the unsolved queries would remain in our minds and we would end up mugging without understanding.

There were the two factors that were preventing us from asking questions and clarifying our doubts in the class: one was fear and the other shyness. We were scared that if we asked questions then the teacher might pose counter-questions and we were shy because we felt that if we could not answer those questions then we might be ridiculed in the class. As per the rule, 35% to 90% of the students passed, but most of them would be deprived of the knowledge needed for the next class. Due to shyness and fear the children would resort to rote learning and their problem would multiply and eventually it would be impossible to solve the cumulative loss. This type of situation created a dislike for the subject and there was a continuous struggle in the process of learning.

Unfortunately the biggest problem is that there is no reverse gear in the vehicle of time, that is, once we cross a stage in life, we cannot go back and correct our mistakes. In this case, it meant that we were on such a threshold of time from where we could neither go back nor go ahead on the basis of

acquired capabilities and then we would keep on compromising with life and ambitions.

When I started working as a teacher, I began to take care of things that had made me unhappy or troubled me. I discussed the topic with students, made an effort to know their experiences and understand their problems. These things did help students to understand the principles of science to some extent but they were not able to understand them fully. So we decided to relate the principles given by the scientists with the students' experiences and allow them to experiment and see for themselves whether it actually happens that way or not and thus make the learning process their own journey. To illustrate, we did the following experiment in grade eight for a topic in science. All the materials required for the experiment were brought and the students were very eager to see and do the experiment. The topic was the force of buoyancy.

A beaker was filled with water. A stone was tied to a piece of foil and attached to a spring balance. The students had to measure the weight of the stone both in air and water and observe whether there was any difference in the weight. Almost all of them found that the weight of the stone was less in water than in air, but there was a difference of one or two grams in their reading. They were discussing the difference and taking the reading again and again to convince themselves. Then they began to question among themselves why the weight of stone was less in water. Though they were sure of the fact that the weight of stone had reduced in water but there was a mixed response on why it was so. They were not able to agree on one answer.

So one more experiment was done to give them a clue. One student was asked to pick up a bag full of books and notebooks and asked whether he could feel the weight of the bag. The student answered in the affirmative. Now another student was asked to apply force on the bag from below or push it upwards. Again the first student was asked whether he was feeling the weight to be same as before. This time he felt that the weight was less than



before. At this point, the students were asked to give the reason for it. They replied saying that this is because the second student is applying force on the bag from below. The next question was: if the weight of the stone was more in the air, then why was it less in water? Were they able to relate this activity to their experience? Some students stood up with excitement and one of them answered that water must be applying force upwards. All the students were divided into groups and were asked to give a thought to whether water was applying force upwards or not. All of them started thinking intensively. There was reflection, enthusiasm and happiness on their faces because they had understood the facts completely. After a while, all of them agreed and came to the conclusion that water did apply upward force.

Once they inferred the result from their own observation they were asked to read the chapter, again in groups so that agreement and uniformity could be established between their actual experience and the principles given in the textbook. The students found each line of the lesson meaningful now. In the end as they read that the force applied by water is called buoyant force, there was no unusual reaction on anybody's

face nor was there any confusion. Because they already knew it! 'Buoyant force' was not just a new term for them - it was something they understood quite well. Finally, when the students were asked to write out the activity as homework, they did not find it burdensome at all. Rather, all of them felt that all they needed to do is simply write what they experienced and describe their own discovery.

I was excited by this experiment. I discovered that when you engage the students with the content, they get involved in the process completely and accept the challenges willingly. They discuss and reflect on every possible way to understand the subject matter. On the other hand, if we simply describe the lesson then they do not relate to the content, are unable to imbibe all the information necessary to understand the concept and find it difficult to describe the process orally or in written form. Another important thing that I could see during the experiment was that the students were full of enthusiasm and confidence and were eager to learn more. It was also remarkable that they were now keen to go through such experiences more profoundly, intensely and at a continually increasing rate. Perhaps the learning process was now moving from struggle to excitement.

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**Narendra** has been working in Azim Premji School, Matli, Uttarkashi since April 2013. Prior to joining Azim Premji School, he was teaching at various schools in Dehradun. He is born and educated in Dehradun. His hobbies include reading story books. He may be contacted at [narender.kothiyal@azimpremjifoundation.org](mailto:narender.kothiyal@azimpremjifoundation.org)