Effective Teaching Learning Material (TLM)

By Deepak Dixit | Nov 1, 2013

The author shares, in his article, his experiences with Teaching Learning Material...

The term Teaching Learning Material (TLM) is used often and usually refers to some very specific, sophisticated equipment. There is a tendency to believe that it is quite important that a teacher uses TLM in the classroom. If it's not so, it may be understood that one is not using a child-centered and interactive pedagogy. So ultimately, what happens is that every lesson ends up being a demonstration even though that approach might not be appropriate for that particular lesson.

When we say teachers should use TLM, it's understood by default that it should also be prepared by teachers. This may not be the right thing to state or understand though I have seen teachers preparing and using their own TLMs. A couple of years ago, I was not any different. At the time, I believed that the job of the teacher was to ensure that all the TLMs were prepared by the teacher. This was based on the belief that since the teacher is an authority on the topic, he/she can prepare the best TLM. The teacher also kept the TLM safe so that he/she was able to use it again and again. This was the belief that I had started with. An incident in the classroom changed my perspective regarding teaching learning practices and the use of TLM.

While dealing with magnetism as a topic I used to work with the real permanent magnet to enable students to understand the basic magnetic properties of a magnet. Next, came the temporary magnet and here we had a very beautiful model of an electromagnet, which I liked to use a lot. It was the first time I had ever seen such a wonderful electrically adjustable electromagnet. It was made in Germany and was a beautiful piece and I enjoyed using it. A year went by this way and it was only I who was excited to use it. In my second year when I took it to the class I realized that that the students were passive.

So the use of the TLM was not as effective as I'd expected it to be. I was unable to understand why such an interesting device could not attract and hold the attention of the students. Why was the response of the class not as I expected? Why did the possible questions not come up? I was unable to pinpoint the issue and the thought disturbed me a lot.

What must be done? What should I do? Then I thought of revisiting the PRC (pedagogy resource center). My idea was to find out some other TLM which could be used. The pedagogy resource center is like a warehouse where all the TLMs (hand-made or bought) are stored. I asked the PRC head about the most effective TLM for the topic but he was clueless. I asked him if he could lend me his ledger to find out what was being used by the other physics teacher. As I was going through the ledger I was surprised that the particular electromagnet that I was using was never used by anyone and it was I who was using it for the first time. I re-checked it, but the data remained the same. Now that was unexpected. Why was such a device never used? I checked the date of its purchase & saw it had been lying there for the past four years. Yet no one had used it. Why? One night I was just thinking about it and I figured I would revisit the topic and see what other alternative I could find.

So one day I said to the class, "I feel the topic that we had done earlier was not understood properly and so I have a general feeling that we should take it up again. Shall we do that?" They were all passive. There was just silence. So I started the topic again with the basic characteristics of the magnet, asking questions to check the level of understanding of the class. They knew the basics of a permanent magnet and now it was time to ask them about a temporary magnet.

It then struck me to ask them - the students - to make their own electromagnet. May be through that I could get an insight about their level of understanding. So I asked the class to make an electromagnet and I also told them that they would have to do it on their own as I was not going to help them. So the class went to the library to find out and collect the things that were needed. Now everyone was engaged. I was just monitoring the class. If they came and asked me something I asked them to ask the other group for help. It took two days, but after that they all came back to me with four different electromagnets. None of them were attractive to look at. These hand-made electromagnets, just a nail wrapped in copper wire connected to a dry cell, and barely able to attract any iron filling proved very powerful in attracting the attention of the students.

The students now knew every detail of the electromagnet and were able to compare its properties with the permanent magnet.
The students had now learned, through trial and error, that the power of the temporary magnet could be increased or
decreased depending on the power. This idea could not have been communicated unless they were allowed to play and
use the electromagnet to their satisfaction. They also discovered that the polarity of the magnet changed if we switched the
terminals of the battery. Their finding excited them because it supported what they had proposed and hadn't been simply a
means of proving the textbook right. This experience was an eye opener for me. It was my first experience with involving
learners in the process of making of TLM.

Earlier, I used either ready-made TLMs or used to construct the TLM on my own. Until now, I hadn't realized that the process
was hampering the learner’s capability to analyze the things and was in face a great obstacle in the construction of their own
knowledge as the students did not find the space to discover. I realized that when the learners were engaged in the process
discovered and understood many things on their own. This is what I would like to call the "creation of knowledge".
Although all of their findings were written in the books which they could have referred to in the library, the feeling of creating
and discovering something was far more fulfilling to them.

A truly great incident happened in 2005, two years after I had implemented this pedagogy in all my classes. One day, I was
just sitting & watching the students as they all played with the electromagnet using magnetic compass, iron fillings and other
such things. One of the students came to me and said in a low voice, "Sir, I think the law of magnetism is not correct." I was
surprised to hear this from a student who usually never participates in the class. I just asked, "Why do you feel that?" She
replied, "It's not just what I feel, I have evidence to prove it too." To be honest, I had no clue about what made her say that
because she was working with the rest of the group for the past two days and was simply playing with the TLM. I asked her
to show me her findings because I also wanted to see what it was that made her conclude such a thing. Let me state the law
here. The law of magnetism states that "Similar poles of the magnet repel each other and opposite poles attract each other"
but according to the student that was not true. She came in front of the other students and shared her findings...She used a
permanent magnet (strong) and an electromagnet (weak) and showed that under all the conditions (change of poles) they
always attracted each other. They never repelled each other! It was a wonderful experience that I had. It forced me to think
that age and exposure couldn’t be a barrier to creative thinking. I explained to the class the reason why this happens. I regret
doing this...I should have just provided them with the clues and maybe they would have figured it out on their own. Who
knows? They might have discovered something far better than what I had informed them of. I still have the feeling that I
missed the opportunity to give them that space that day and learn from it myself.

So, getting back to the effectiveness of TLM... I understood what TLM truly is only after having these experiences. There are
many aspects to TLM. TLM are not just to be used for demonstration in the classroom and are not to be created and used by
the teacher only. Unless TLM is "By the learners, for the learners & of the learners" it does become just a decorative piece,
nothing more. Until we involve the learners in the process of making the TLM, that sense of ownership of the process and
that level of understanding will not develop. If a facilitator is creative and has a certain level of understanding, he/she may
suggest to the students to use the things available from their surroundings. There is no need to rush to the store to buy
material. It’s up to the facilitator to guide the learners and encourage them to create and use their own TLM.

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