What is this Hindi Used in Textbooks?

Uma Sudhir

Introduction

I would like to share some of my experiences of working with both students and teachers; trying to convey some basic concepts in Science. And this write-up is mainly about the kind of language we use to teach Science. I am sure the same problems will crop up when it comes to teaching Maths and Social Science too, but I cannot speak about them from first-hand experience. And specifically, this write-up is about the use of Hindi because my work has been in Hindi-speaking areas. Probably similar problems are being discussed across India, but once again, what I have to share concerns the use or misuse of Hindi.

Popular Writing in Hindi vs. Textbooks

Let me start by telling you about how I started reading articles in Hindi. Being a South-Indian, and having studied in English medium schools, my exposure to technical terminology in any other language was nil till I joined Eklavya. The transition to Hindi was facilitated to a great extent by Eklavya's publications because the language they use is user-friendly. And then came textbooks – eek! Not only did they use technical terms even where familiar and simpler words were available, the style of writing was also very stilted and formal. I still remember stumbling over the word 'kvathnank' [which is ccvccvcc (?) – not that consonant clusters don't occur all the time in all languages, but this word has not just formidable, but rare combinations of consonants which makes it difficult for a tongue to get around it] for boiling point. The multiple consonant clusters defeated me each time, and I wondered – why can't one use 'ubalne ka taapman' in classes VI and VII and introduce the exact term somewhere down the line?

The Language Used in Textbooks

As mentioned earlier, it is not just the technical words that are difficult, the sentences in general use words which are not commonly used. And this makes it difficult for the students to read the text and make sense of it.

Some examples from the Chhattisgarh Class VI textbook (2013):

1st Chapter:	1.urja ki punah prapti hetu aapko bhojan ki aavashyakta hoti hai. (*You need food to once again get energy.*) 2. jeevan ke liye jal anivaarya hai. (*Water is essential for life.*)

4th Chapter:	1.hast chalit apkendrak machine (caption for figure) (*Manual centrifuge*) 2. filter mein ceramic ke bane ek sarandra patra (candle) se jal ko pravahit karte hain. (*Water is passed through a porous vessel (candle) made of ceramic in the filter.*)
5th Chapter:	bhautik parivartano mein ushma ka ya toh avshoshan hota hai ya utsarjan. (*Heat is either absorbed or released in physical changes.*)
6th Chapter:	sarvpratham cylinder ke sabse chote bhag dwara darshaye jane wale ayatan ko gyat kijiye. (*Firstly find out the volume indicated by the smallest division of the cylinder.*)
10th Chapter:	aap payenge ki sthir avastha mein vastuon ki sthiti mein samay ke saath koi parivartan nahi hota. (*You will find that a body at rest shows no change in position with time.*)
13th Chapter:	swasthya kuch antarik tatha bahya karakon se prabhavit hota hai. (*Health is affected by some internal and external factors.*)

How will the Students ever Manage to Learn anything?

One wonders at this because policy documents have always stressed the use of the mother tongue: language which is familiar. NCF 2005 in the section on language says (page 36):

> Languages also provide a bank of memories and symbols inherited from one's fellow speakers and created in one's own lifetime. They are also the medium through which most knowledge is constructed, and hence they are closely tied to the thoughts and identity of the individual. In fact, they are so closely bound with identity that to deny or wipe out a child's mother tongue(s) is to interfere with the sense of self.

Imagine the kind of violence being done to these students! More so given that most students are speakers of Chhattisgarhi, and many other languages like Halbi, Baighani, Bhulia, Kalanga, Surgujia, etc., not 'manak Hindi'.

Even the attempt to get the students used to technical terminology in Hindi by introducing it in middle school does not seem to have succeeded since I have had college teachers tell me that their students write the answers in Hindi but use the English technical terms. For example, they will not use the term 'prakash sansleshan' but photosynthesis.

Discrimination amongst Dialects with Manak Hindi Coming Out on Top

As my exposure to Hindi increased, I began to understand the difference, the textbooks

abhor the use of anything other than what is deemed to be pure Hindi, what I have come to call 'shuddh shakahari Hindi'. So go to any Hindi-speaking state and read the newspapers, you will find words like 'koshish', but will you find it in their textbooks? No chance! because 'koshish' is deemed to be 'Urdu' not 'Hindi'. So the vocabulary that comes naturally to the people in the given area is not acceptable to the people who pass textbooks and hence determine how they get written.

Language does Decide our Thoughts!

How this alienates people and makes them think that things discussed in textbooks are removed from daily life comes through in one of my favourite anecdotes of how words have the power to fashion what we think. Let us take water. Anywhere you go, people ask you (with different degrees of respect imbibed into the sentence) – 'pani piyoge?' But the word that is consistently used in textbooks (once again, I would like to reiterate that I am talking only about Science textbooks, I do not know if the situation is the same or different in other subjects) is 'jal'. We were in this workshop for teachers where we were talking about pure substances and mixtures (an important distinction for us chemists) and we wanted to discuss whether water is a pure substance. The teachers came to a general consensus that water usually has oxygen and other gases dissolved in it along with sundry salts and (horrors!) micro-organisms. So we asked 'lekin kya pani shuddh roop mein mil sakta hai?' This led to intense discussion on how salts, oxygen, etc. could be removed. But all this died out suddenly when one teacher got up and declared – 'agar woh shuddh hai toh woh pani nahi hai, woh jal hai'!!!! So 'jal' has the same 'sanctitiy' as the formula 'H_2O' for water!

Technical Jargon is Always Problematic

I was quite amused to learn that native speakers of English face a similar problem. I once hosted a Portugese post-doctoral student who had gone to England for her PhD after doing her masters in Portugal. She told me that she did not have problems with the scientific terms in English since they are mainly derived from Greek and Latin roots (like scientific terms in Hindi are derived from Sanskrit roots) which was close to her mother-tongue. And she said that the English students found these same technical terms strange and unweildy. For me, all English words are 'foreign' words and had to be learned, and the fact that Science used words derived from Latin and Greek was only interesting to the extent that they gave clues to their pronunciation (for example, 'chiral' is from Greek, so the initial sound is the 'hard' k, not ch!).

Keeping it (Language) Simple Essential for Learning

We are trying to teach difficult and counter-intuitive concepts to children when we teach Science, then why do we insist on making it even more difficult for children

by using words they never ever use outside of the classroom? I studied all of this in English and I had to only struggle with the concepts because I read extensively, so the language did not cause any problems. But I can figure out that even the English versions of the textbooks would be difficult. This is for a rather strange reason. With NCF 2005 and all the work that went into it, there were strange gaps in communication. Not just between subjects, but also between people working on the same subject for different classes (that is another story). But the fact that different subject people were working in different ivory towers meant that the people deciding the standards for languages were not talking to the people working on Maths, Science and Social Science. So take the textbooks for any class, the language in the English and Hindi textbooks requires a totally different level of competence from that used (and expected of) in the Maths, Science and Social Science textbooks.

Of course, one does not become competent in a language only by studying the prescribed language textbooks. As the NCF 2005 goes on to state on page 38: 'Language education is not confined to the language classroom. A Science, Social Science or Mathematics class is *ipso facto* a language class. Learning the subject means learning the terminology, understanding the concepts, and being able to discuss and write about them critically.'

But one has to construct any concept in one's own mind first, associating the 'right' word with it can come later. And this construction of knowledge can only be hindered if the students are not even able to comprehend what is going on.

Conclusion

I firmly believe that the more variety of topics you read up on, the more words you are exposed to, and learn to use. So obviously, you learn new words and how to use them in the Science class too. But if the textbook is incomprehensible, then you will not learn either, neither words, nor concepts. We should strive for the kind of writing that popular Science-writing goes in for, explaining in words an average citizen can follow. Maybe then all our children will excel in Science and other subjects too.

References

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Uma Sudhir is part of the Eklavya Science team which is working on curriculum and material development.

uma.eklavya@gmail.com