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Significance and application of Hindi technical terms in the teaching of Botany

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Abstract

The soul of India resides in the villages. Hindi is the medium of instruction in the rural schools and colleges of the Hindi-speaking states of the country. After getting primary and secondary education from villages in Hindi belt areas, students leave for higher education in cities where the world of English welcomes them. When the students of science class listen to the lectures of learned teachers in the classes, then probably within a few days they start getting disillusioned with the classes. Since most of the students come from Hindi medium education, when technical words are explained by the teachers in English, then the students become uncomfortable because they have not read the English words and they do not understand the Sanskrit-based words of Hindi. Then they search the meaning of English words through internet on mobile phone but they get disappointed. Through this research, it was concluded that if the technical words of Hindi are used by the teacher in the simplest possible form, then they are useful not only for Hindi speaking students but also for English medium students to understand the nuances of the subject. Proves to be helpful.

Keywords: Technical terms of Botany, Botanical terms in Hindi, Teaching of Botany

Introduction

In the present environment, apart from getting knowledge from books and teachers, students are also getting information from the internet. Smart mobile phones can be compared to the ancient Aladdin's lamp, in which rubbing the lamp on the ground produced a genie who fulfilled our wishes, similarly just touching the smartphone with the thumb would satiate your curiosity. Today students are using smart mobile phones along with lectures of teachers to understand their course subjects or prepare notes. But Hindi-speaking students today are very upset and confused because even this genie is not able to solve their curiosity. The reason is that most of the material related to botany is available on the internet only in English language. Even if there is some information in Hindi, its language is very difficult in which scientific or technical words are generally Sanskrit-based and not in simple Hindi. On the other hand, very complex scientific terminology is used in books written in Hindi. Now such students see the only ray of hope in their teacher, but the irony is that most of the teachers also do their duty by convincing the students that if they write in Hindi, they will not get good marks in the examination.

Most of the students of North India come from rural environment, whose primary education was done in the primary school of their village. Along with other science subjects, these students also study Botany through Hindi medium only. Botany is a very important subject, because even today most of the population of the country gets its livelihood from plants *i.e.* agriculture. When these students take admission in colleges for higher education from Hindi medium schools, they have to face many difficulties while studying not only botany but also other subjects of science. Continuous dialogue was held with such students and finally their following difficulties came to the fore-

1. Lack of high-quality books in Hindi on science subjects.
2. The words used in the books of Botany written in Hindi language are Sanskrit based.
2. Maximum use of English words by the teachers while teaching Botany in the classes.
3. Use of almost all technical and scientific words by teachers in English.
4. Underestimation of Hindi speaking students by teachers relative to English speaking students.
5. Being ridiculed by other students of the class for using a word in pure Hindi by a Hindi speaking student.

Objective

At the time of teaching of Botany, selection and use of Hindi words which make teaching interesting and easy as well as easy to remember.

- Use of scientific and technical words of Hindi by the teacher himself at the time of teaching.
- Identification of such scientific words which can be more meaningful if modified.
- -Presenting difficult Sanskrit words in a simple Hindustani form.

Research Methodology

Continuous dialogue was held with the Hindi speaking students and the difficulties faced in understanding the subject by them were acknowledged. Suggestions for simple presentation of the subject were also invited from the students. In this research, some special scientific words were presented in the class only in Hindi and the reactions of the students were also obtained.

Observations

Botany is an interesting subject. If we look at the technical words of this subject, then some words are more interesting and meaningful in Hindi than in English. When some such words were used continuously while teaching, the students also started feeling comfortable while using these words and the technical Hindi words which were not used, the students also did not use those words due to hesitation. The special thing came to the fore that English speaking students also found these Hindi words easier than English words. There are many technical words which when used only in Hindi, the subject became more interesting and clearer and it was also confirmed by the students. Few of such words are as follows-

1. पादप- पैरों से पानी पीने वाला *i.e.* one who drinks water from feet (In English, the word 'plant' is highly confusing which has different meanings like plant, machine, factory, plantation etc.)
2. कोशा- कोष्ठ *i.e.* chamber (There are many meanings of the word cell in English which create confusion)
3. भ्रूणपोष- भ्रूण को पोषण प्रदान करने वाला *i.e.* providing nutrition to the embryo (The word endosperm is used in English which means 'inner seed' and it does not clarify the meaning)
4. सहजीवन- साथ साथ जीवन बिताना *i.e.* living together (English symbiosis is comparatively obscure)
5. परजीवी- किसी दूसरे जीव पर आश्रित रहना *i.e.* dependent on another organism (English parasite is not clear)
6. मृतोपजीवी- मृत अथवा अजीवित पदार्थ पर जीवन व्यतीत करना *i.e.* living life on dead or non-living matter (English saprophyte is comparatively difficult)
7. पूर्ण परजीवी- जो जीवन पर्यंत किसी दूसरे जीव पर आश्रित रहता है *i.e.* which remains dependent on another organism for life (English obligate parasite is comparatively difficult)
8. आंशिक मृतोपजीवी- परजीवी किन्तु मृत पदार्थ पर भी जीवन बिताने में सक्षम *i.e.* Parasite but capable of living on dead matter as well (English facultative saprophyte is difficult as well as confusing).
9. मूलाभास (इसे जड़ाभास कहना चाहिए)- जो जड़ न हो किन्तु जड़ का आभास कराता हो *i.e.* Which is not a root but gives the

impression of a root (The meaning of rhizoid in English is not clear).

10. वाष्पोत्सर्जन- वाष्प के रूप में उत्सर्जन *i.e.* excretion in form of vapours (Does not clarify the meaning of transpiration in English).
11. गुणसूत्र- वे धागे जिन पर गुण उत्पन्न करने वाले कारक उपस्थित हों *i.e.* those threads on which the factors that produce properties are present. (The word chromosome in English means coloured body).

On the other hand, there are some words which seem difficult due to not being in general practice, but when their synonyms which are in practice were used, these become easy for the students to understand, such as-

1. क्षुप - This word is not in common practice. This is the translation of English shrub; hence the word झाड़ी was used in place of क्षुप.
2. मृदूतक - This is the translation of English parenchyma. मृ means soft, but the use of मृ is not common, so the word कोमलूतक या कोमल ऊतक was used in its place.
3. The term लघु is used in abundance such as लघु बीजाणु पर्ण (microsporophyll). Here, when छोटे बीजाणु वाली पत्ती (small sporangia leaves) were said instead of लघु बीजाणु पर्ण, it became simple and clear because in Hindi, the word छोटे is used instead of लघु in common parlance. Similarly, the word पत्ती should be used in place of पर्ण.
4. The use of the word 'बड़े' in place of the word 'दीर्घ' also proved to be meaningful.
5. In place of the word 'तंतु', the word 'रेशे' was used. The word 'रेशे' is used in general practice and makes the meaning more clear.
6. The word 'कवक' is not popular among Hindi speaking students. Instead, the word 'फफूंदी' was used.
7. In place of 'अग्रस्थ वर्धी प्रदेश', 'शीर्षस्थ वृद्धि क्षेत्र' was found to be more suitable.

Some words were also found which are either very difficult or the students are not comfortable using them. A need was felt to use simple synonyms for such words. For example-दारु (Xylem), एधा (cambium), बल्कुट (cortex), अंड (egg), निषिक्तांड (fertilized egg) etc.

Hindi meanings of some English words were asked by the students, but their Hindi meanings are either not there or are not used, like Slide, Watch Glass, Petri Dish, Cover Slip, Wash Bottle, Dropping Bottle, Staining Rack etc.

Conclusion

It has been concluded that in the teaching of Botany, if technical and scientific words are used in Hindustani instead of pure Hindi or Sanskrit based words, not only the subject becomes interesting, but it becomes easier for Hindi speaking students to understand the nuances of the subject. It was also found in this research that English medium students are also benefited by the use of technical words in Hindustani. It is also necessary to clarify here that until the teacher himself did not use technical words in Hindustani, the students hesitated to use these words. Therefore, it is necessary that the teachers themselves should come forward

and present not only the lectures in Hindustani, but scientific and technical words should also be used in Hindustani only. The words which are of foreign language should be standardized in that language instead of being translated into Hindi.

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