© May 2026 | IJIRT | Volume 12 Issue 12 | ISSN: 2349-6002

# Writing Modern Sciences in Sanskrit: Challenges and Solutions

Srijon Sadhukhan[1], Raviteja M S[2], Kurudi Srihari Purushothaman[3]
[1,3]*Sarasvata Samsthanam*
[2] *Central Sanskrit University, Sringeri*

*Abstract*—**Scientific writing though Bharatiya Languages, Sanskrit in particular, has a long history dating back to ancient period. However, due to the downfall of the Gurukula Tradition, Sanskrit has been largely out of use within the scientific academia. To revive the scientific discourse and analyze it through both modern and ancient perspectives, we need to initiate composing essays of scientific nature in Sanskrit. However, Sanskrit being very grammatically sophisticated has its own unique style to express certain thoughts and expressions in spoken languages sometimes can't be replicated in the very same way though Sanskrit. So, a thorough language planning is required to first define the concepts and then to represent them, first in writing and subsequently through communicating orally, which will redefine writing and speaking science in Bharatiya languages.**

## I. INTRODUCTION

Modern Scientific Writing in Sanskrit is a continuation of a pre-existing literary tradition of Sanskrit. We find examples of such compositions, with verse involved, in works such as Pratyakṣaśārīram and Siddhānta-Nidānam by Gaṇanātha Sena Śarmā, Bṛhacchārīram and Aṣṭāṅgaśārīram by Vaidyaratnam P. Sankunni Varier, and Rēkhāgaṇitam by Samrāḍ Jagannātha. This is the way of transmitting modern knowledge in traditional manner, and especially suited for oral transmission wherever verse is employed in a culture where knowledge was usually transmitted orally through generations.

However, as much as oral expression is important, so is a well-defined and standardized written format. Starting from punctuation symbols, India has inherited such norms mostly under colonial rule. Scientific discourse is a very advanced subject and thus a sophisticated manner is expected to express the matters of discussion.

## II. BACKGROUND

However, Modern Scientific Compositions have some defining characteristics like dominant use of symbolism and representation of abstract concepts. Thus, Sanskrit has to be adapted to such a usage, but also without compromising the grammatical principles standardized by Panini.

Translation of certain concepts of Sanskrit may follow two approaches. First, certain names of concepts like units of measurement, names of some quantity, or systematic names of chemical substances and living species are to be retained from English as what Commission for Scientific and Technical Terminology (CSTT) terms as 'International Terms'. This is what is usually practiced, especially in school textbooks. One example of such an approach is a Sanskrit textbook on Physics written by Chaudhary Shrinarayan Singh published by Shri Rashtrabhasha Pratishthan, Varanasi, where names of units like centimeter and names of elements are retained from English as they are. This leads to a situation where there doesn't remain much scope for scientific discourse such as producing papers and lab reports through vernacular media. Only a handful of journals publish scientific papers in Hindi. Conferences use English as de facto/default medium for all scientific discourses. The Second approach, or the much purist approach, and comparatively the most daring but not unusual either, is to translate systematic names and symbols, as much apt as possible, into Sanskrit itself.

Dr. Raghu Vira school of tradition is an advocate of this Second approach. This tradition stems back from the ideas and works of Dr. Raghu Vira. During his lifetime, Raghu Vira was editor of a set of Undergraduate Textbooks published by Government of Madhya Pradesh on Scientific Subjects in Hindi and Marathi which applied words coined by him published

in his Great English-Hindi Dictionary. Another person named Sadhu Ram had also written textbooks using his terms. In addition to these, Raghu Vira was critical about the formerly mentioned approach, then taken by the Ministry of Education and currently taken by CSTT.

After Raghu Vira's death in 1963, this school came to a complete halt and couldn't continue for the next 6 decades. Fortunately, this tradition has been revived both institutionally and individually. Some of Raghuvira's coinages were first used in NCERT textbooks translated into Sanskrit by Sanskrit Promotion Foundation.

## III. MATERIALS AND METHODOLOGY

Up until the internet revolution, Dr. Raghu Vira's works were not readily available on online platforms. Such materials started to be uploaded in the late 2010s. A first photocopy of Comprehensive English-Hindi Dictionary of Governmental & Educational Words & Phrases was uploaded in Black and White format on the Internet Archive in January, 2017. It largely remained ignored by general masses for the next five years until a video was published on Raghu Vira's principles by Atharva Forum in April, 2023. Now this dictionary is available in searchable format on kosha.sanskrit.today.

The Dictionary gives a lengthy introduction of how these terms were derived and at what magnitude the work was going on in 1956, followed by the entries and their Sanskritic counterparts. All these counterparts were assigned a gender according to the Paninian order.

Even though the dictionary has still retained its relevance, lot more coinages are needed. There is a need to adapt the preexisting Sanskritic nomenclature with updated classifications of today.
As science is going to be rewritten from Sanskritic point of view, the language needs to be rethought, replanned¶ and redesigned. At every step the language has to be reviewed grammatically, sequentially, formation of words, the relevance of the same formation, the explanation of the working of the semantics in each word and the meanings it may present in different contexts.

¶ - Language planning involves deliberate, although not always overt, future oriented change in systems of language code and/or speaking in a societal context. [11, 12]

## IV. OBSERVATIONS

### *4.1 Representation of Physical Measurements in Words*

The normal understanding of measuring mass, length and time would simply mean counting the number of units, which means counting multiple times a given standard parameter of quantity. This is what is done usually in English and in Indian languages as well.

Quantity is commonly expressed the above way in Sanskrit, for example, 25 kilometers would be expressed as **पञ्चविंशतिः सहस्रमानानि**. It could be interpreted as 25 numbers of kilometers. Its **समस्त** form **पञ्चविंशतिसहस्रमानानि** would be misleading[1], given that **पञ्चविंशतिसहस्रम्** could mean **पञ्चविंशतिः** added to **सहस्रम्** i.e. 1025 instead of the intended 25,000, in turn implying that the distance is 1025 meters or 1.025 kilometers, not 25,000 meters or 25 kilometers.

If at all a **समस्तपद** is required, then 25 km has to be treated as 25,000 m first. In this way, the **पूर्वपद** would be the quantity converted to meters and **उत्तरपद** would be **मानम्** (meter) which will avoid the abovementioned ambiguity (like **पञ्चविंशतिसहस्रमानानि**).

Under this definition, 25,000 would be **सहस्रपञ्चविंशतिकम्** (**सहस्र** + **पञ्चविंशति** + **कन्**[2]; '**कन्**' denoting x (=25) number of times or quantity, or something multiplied by x).

1. **चार्थे द्वन्द्वः** (2.2.29) ।[6] **सिद्धं त्वधिकान्ता संख्या संख्यया समानाधिकरणाधिकारेऽधिकलोपश्च ॥...समानाधिकरणाधिकारे वक्तव्यम् - अधिकान्ता संख्या संख्यया सह समस्यतेऽधिकशब्दस्य च लोपो भवतीति। एकाधिका विंशतिः एकविंशतिः, द्व्यधिका विंशतिः द्वाविंशतिः ॥** (Mahabhashya of Patanjali)

2. **शतमानविंशतिकसहस्रवसनादण्** (5.1.27) - **विंशत्या क्रीतं विंशतिकम्** (Bālamanoramā). This is not without the dissatisfaction of some grammarians, as the better alternative would be **सहस्रपञ्चविंशकम्** in this case, which directly obeys **उत्सर्ग** rules. Thus, abovementioned sutra is subjected to **विंशतित्रिंशद्भ्यां ड्वुन्नसंज्ञायाम्** (5.1.24).

There are two options hereforth. On one hand, **सहस्रपञ्चविंशतिकम्** could then be added to **मानम्** to form **सहस्रपञ्चविंशतिकमानानि** in plural form (**दिक्सङ्ख्ये सञ्ज्ञायाम्** 2.1.49). But 2.1.49 is used for cases like **नवग्रहाः** whence one **नवग्रहः** (one of the nine **ग्रहाः**) or **सप्तर्षयः** whence one **सप्तर्षिः** (one of the seven sages). Much better, if one wants to express the measurement as a **समाहार** then **सहस्रपञ्चविंशतिकम्** could then be added to **मानम्** to form **सहस्रपञ्चविंशतिकमानम्** in neuter singular form.

An alternate way is to use instrumental case (**करणकारक**) for the unit **सहस्रमानम्.** This gives the following expression, **सहस्रमानेन पञ्चविंशतिः.** Doing **तृतीया तत्पुरुष समास** of this would give our **समस्तपद, सहस्रमानपञ्चविंशतिः.**

Considering spaces between the words are part of a **समस्तपद** and symbols and numbers don't bear **कारकविभक्ति**s at the end, the appropriate symbols used would be,

| | | |
|---|---|---|
| | **स॰ २५-क मा॰** | or, **स॰ २५ क मा॰** |
| or, | **स॰ मा॰ २५-कम्** | or, **स॰ मा॰ २५ कम्** |
| | (**सहस्रमानपञ्चविंशतिकम्**) | |
| or, | **स॰ मा॰ २५** | |

As an adjective, **सहस्रपञ्चविंशतिकमानम्** can be further modified into a **बहुव्रीहि समास**, e.g. a road of 25 kilometers could be called **सहस्रपञ्चविंशतिकमानः**. In Sanskrit it would be interpreted as,

**सहस्रपञ्चविंशतिकमानः (पुं॰) इत्युक्ते सहस्रपञ्चविंशतिकमानो मार्गोऽर्थाद्यस्य मार्गस्य दैर्घ्यं सहस्रपञ्चविंशतिकमानम् ।**

**शतिमानम्** is the word for centimeter, formed by **कर्मधारय समास** of **शत** + **इन्** and **मानम्**. In **शति** (of which **शती** the masculine form is used in Hindi as standalone form), the suffix **-इन्** in **शति** characterizes a particular measurement, here meter, consisting 100 (equally divided) parts and not the 100th part.

If we were to count in centimeters then to represent 2 cm we can write **द्वे शतिमाने**, but we can't write **द्विशतिमानम्**, as it would rather mean $\frac{1}{200}$ cm or 0.005 cm. We have to think in some other direction, as was done previously. Twice of **शति** would become **शतिद्विकम्**, so joining with **मानम्** would give **शतिद्विकमानम्**. Similarly, alternates would be as above, **शतिमानद्विकम्** and **शतिमानेन द्वे** i.e. **शतिमानद्वे**.

Thus, the appropriate symbols used would be,

| | | |
|---|---|---|
| | **शि॰ २-क मा॰** | or, **शि॰ २ क मा॰** |
| or, | **शि॰ मा॰ २-कम्** | or, **शि॰ मा॰ २ कम्** |
| or, | **शि॰ मा॰ २** | |

Although **शतिमानम्** is registered in Dr. Raghuvira's Dictionary, alternatives like **शतांशमानम्** (see IV.2) or **मानशततमम्** (**शततमम्** based on ordinal numerals in Sanskrit) are also in due consideration.

As per requirement, to express 'per second' and 'per hour' respectively, words like **प्रतिकलम्**[3] (*vibhakti* 2.1) from **कला** or **प्रतिघण्टम्**[3] (*vibhakti* 2.1) from **घण्टा** could be placed either before or after the above symbols.

*4.2 Decimal digits in Sanskrit*

Decimal digits could be explained as "addition of a value which is divided by any power of 10" (see next paragraph). This is what is prescribed in the Ancient Mathematical Tradition. However, in examples like the precise values of π, there seems no clue about expressing them traditionally, and probably we have to adopt the modern way of counting (**लोक एव प्रमाणम्**) as seen in modern Indian languages. This method would apply in counting telephone numbers and calling out train numbers.

Let's take one example, 0.2. This is equal to $\frac{2}{10}$. Usually, such numbers were traditionally represented by a fraction of 2 divided by 10. So, in Sanskrit it would be called **द्वौ दशांशौ** (*masc.*) or **दशांशद्वयम्/दशांशद्विकम्** (**दशांशेन द्वे**). Similarly, 0.62 would mean **द्विषष्टिकं शतभक्तम्** or **द्विषष्टिः शतांशाः**. Here, **अंशः** *masc.* (or **लवः** *masc.*) means numerator. But what about numbers like 3.1415926535.... and continued? For such a purpose,

3. **कुगतिप्रादयः** (2.2.18) ।[6] **अत्यादयः क्रान्ताद्यर्थे द्वितीयया (वा॰)** । (Kashika) [9]

another term known as **दश्यांशः** from **दश्य**[4] (*यत्*), or alternatively, **दाश्यांशः** from **दाश्य**[4] *(ष्यञ्)* is introduced.

Earlier, words like **बिन्दु** (*masc.*) etc. meaning a point were used to mean zero i.e. **शून्य**. However with the introduction of Western Education, we use words like 'point' or 'decimal' to count digits placed right hand side of the decimal point in Indian languages. **बिन्दूत्तरम्** is a good example.

However, **बिन्दु** is too generic of a term with multiple meanings. There are some terms which have fallen out of use and may be repurposed. One such word is **बट्**[5], which means a point, but exists as an indeclinable. The function of **बट्** is to make a relation between whatever precedes and whatever follows **बट्**. For example, 1.345 is **एकेन बट् त्रिचतुष्पञ्चभिः** in 3rd case.

***स तस्मात् एकेन बट् त्रिचतुष्पञ्चभिः** (or **बट् त्रिचतुष्पञ्चकेन**) **शतिमानेन लम्बः ।***

*He is taller than him by 1.345 centimeters.*

Another word called **स्तिबुकम्**[6] (*neu.*) found in ***विशेषावश्यकभाष्यम्*** of Jinabhadragani Kshamashramana (**जिनभद्रगणि क्षमाश्रमण**), also means **बिन्दु** or point, but we shall reintroduce it for the specific purpose of decimal point, in form of **स्तिबुकम्** or **स्तिबुकोत्तरम्**.

While counting decimal numbers, **बिन्दु** or **स्तिबुक** must be followed by numbers counted separately ending with -**मितदश्यांशः** (*sing.*) or -**मितांशाः** (*pl.*). They must be followed by a **च** if preceded by an integer.

163.13462 would hence be counted as

1. **त्रिषष्टिशतं बट् एकं त्रीणि चत्वारि षड् द्वे इति** (followed by **इदम्** e.g. **इत्यनेन, इत्यस्मात्** etc.)

or, **त्रिषष्टिशतं बट् एक-त्रि-चतुः-षड्-द्विकम्** (**द्विकानि**)

In 3rd case - **त्रिषष्टिशतेन बट् एक-त्रि-चतुः-षड्-द्विकेन** (**द्विक, द्वि** + **कन्** in place of **द्वि**)

2. **त्रिषष्टिशत-स्तिबुकं एक-त्रि-चतुः-षड्-द्वि-मित-दश्यांशश्च** (**स्तिबुकम्**, *vibhakti* 2.1)

or, **त्रिषष्टिशत-स्तिबुकं एक-त्रि-चतुः-षड्-द्वि-दश्यांशश्च**

In short, **त्रिषष्टिशत-स्तिबुकं एक-त्रि-चतुः-षड्-द्वि-इति** (followed by **इदम्**)

In 3rd case - **त्रिषष्टिशत-स्तिबुकं एक-त्रि-चतुः-षड्-द्विमितैः**

3. **एक-त्रि-चतुः-षड्-द्विदश्यांशकाः त्रिषष्टिशतम्**

4. **त्रिषष्टिशतं एकत्रिचतुःषड्द्विमितांशाश्च**

There are also words for decimal points already existing in vernacular languages such as **दशमलव**, such words are although long, however could be used in substitution as per convenience.

*4.3 Representation of Names of Chemical Compounds*

The names of Chemical Compounds need to be represented in a rational manner. Usually, to refer to a molecule in a given reaction, it must be treated as a **समाहार**. For example,

**प्राङ्गारैकस्य (परमाणोः) द्विजारकैकस्य (व्यूहस्य) च समाहार इति प्राङ्गारद्विजारेयं द्विजारेयप्राङ्गारं**[7] **वा ।**

*(A molecule of) Carbon Dioxide is a combination of one atom of Carbon and one molecule of (Di)oxygen.*

Alternatively, to define $CO_2$ (**प्रांजा**$_२$) as a substance

**द्विजारेयः (द्विगुणितजारेयः, जा**$_२$**) प्राङ्गारो (प्रां) यस्य (व्यूहस्य) तत् द्विजारेयप्राङ्गारं**[7] **प्राङ्गारद्विजारेयं वा ।**

*Carbon Dioxide is the molecule whose Carbon is Oxidised Twice.*

4. **तस्येदम्** (4.3.119)[6][7]; **प्रयोजनम्** (5.1.108)[6][8]; **शीलम्** (4.4.61)[6][7]

5. तद् बट् कुर्वीत उपव्युषम् (1.5.2.1), बण्महां असि सूर्य इति कुर्वन्ति (1.5.2.1) (Taittirīya Brāhmaṇa); **बण्मॅहाँ असि सूर्य बळादित्य मॅहाँ असि** (8.101.11), **बट् सूर्य श्रवसा मॅहाँ असि सॅत्रा देव मॅहाँ असि** (8.101.12)

6. थिवुगागार जहन्नो वट्टो, उक्कोसमायओ किंचि । अजहण्णमणुक्कोसो य खेत्तओ अणेगसंठाणो ॥७०४॥ - स्तिबुको बिन्दुरुच्यते, तदाकारो जघन्यावधिर्भवति (Commentary by Hemachandra)

7. **वाऽऽहिताग्न्यादिषु ।** (2.2.37)[7]

Let us pick up Sodium Sulphate ($Na_2SO_4$). As there are two atoms of Sodium, IUPAC allows one to use Disodium Monosulphate (or Disodium Sulphate as "Mono" could be omitted to denote "One") as alternatives. We have thought to make this into a norm in Indian languages.

**क्षारातुशुल्बेयम्** - Sodium Sulphate, or

**द्विक्षारात्वेकशुल्बेयम्** - Disodium Monosulphate

How we represent names of such compounds reacting and produced within a given reaction in a simple manner is a necessary question to ponder over.

For example, the equation (**समीकरण** or **करण**) of a process called Respiration (**श्वसन**) would be represented as follows

$$\text{प्रां}_{६}\text{उ}_{१२}\text{जा}_{६(ज)} + ६\text{जा}_{२(वा)} \xrightarrow{\text{श्वासः}} ६\text{प्रांजा}_{२}\uparrow + ६\text{उ}_{२}\text{जा}_{(द्र)}$$

$$\textit{मधुमम्} + \textit{जारकषट्कम्} \xrightarrow{\text{श्वासः}} \textit{प्राङ्गारद्विजारेयषट्कम्} + \textit{जलषट्कम्}$$

**प्रां**$_{६}$**उ**$_{१२}$**जा**$_{६}$ = $C_6H_{12}O_6$ (Glucose); **जा**$_{२}$ = $O_2$ (Oxygen); **प्रांजा**$_{२}$ = $CO_2$ (Carbon Dioxide); **उ**$_{२}$**जा** = $H_2O$ (Water); **श्वास** = Respiration

Letters in parentheses in subscript denote the state of matter - **स्था (स्थास्नु)** = Solid; **द्र (द्रव)** = Liquid; **ज (जलीय)** = Aqueous; **वा (वातीय)** = Gaseous

The verbal intepretation should be as follows - **जलीयमधुम-वातीयजारकषट्क-अभिक्रियया वातीयप्राङ्गारद्विजारेयषट्कञ्च द्रवीयजलषट्कञ्च सम्भवेताम्।**

In the Formal Usage of English – Glucose (in Aqueous state) reacts with Six molecules of Oxygen (in Gaseous state) to form Six molecules of Carbon Dioxide (in Gaseous State) and Six molecules of Water (in Liquid State).

Explanation - **श्वसनेन देहे जारकोद्ग्रहणं सम्भवति। जारकं स्वीकृत्य शर्कराणोः खण्डनं भवति।**

Rough Translation - Uptake of Oxygen takes place by Respiration. Breaking down of Sugar Molecule happens using Oxygen.

To express, for example, "six times of Oxygen", we used the template ["substance" + "number" + **क**] to express the phrase into a compact word. (See 4.1, 3rd paragraph, last parenthesis)

Another example of Photosynthesis (**प्रकाशसंश्लेषण**) is given below

$$६\text{प्रांजा}_{२(वा)} + ६\text{उ}_{२}\text{जा}_{(द्र)} \xrightarrow[\text{पर्णशादेषु}]{\text{सूर्यालोकेन}} \text{प्रां}_{६}\text{उ}_{१२}\text{जा}_{६\,(ज)} + ६\text{जा}_{२}\uparrow$$

$$\textit{प्राङ्गारद्विजारेयषट्कम्} + \textit{जलषट्कम्} \xrightarrow[\text{पर्णशादेषु}]{\text{सूर्यालोकेन}} \textit{मधुमम्} + \textit{जारकषट्कम्}$$

**सूर्यालोक** = Sunlight; **पर्णशाद** = Chlorophyll

The verbal intepretation should be as follows - **वातीयप्राङ्गारद्विजारेयषट्क-द्रवीयजलषट्क-अभिक्रियया सूर्यालोकसमवधाने जलीयमधुमञ्च वातीयजारकषट्कञ्च सम्भवेताम्।**

In the Formal Usage of English – Six molecules of Carbon Dioxide (in Gaseous state) reacts with Six molecules of Water (in Liquid state) in presence of Sunlight to form Glucose (in Aqueous form) and Six molecules of Gaseous Oxygen.

Explanation - **पादपानां पर्णेषु सालोकसंश्लेषणेन मधुमं निर्मीयते।**

Rough Translation - Glucose forms by photosynthesis in plant leaves.

Compound formulae may casually be read with each symbol spoken out individually e.g. **६प्रां**$_{६}$**उ**$_{१२}$**जा**$_{६}$ - **षट्-प्रां-षड्-उ-द्वादश-जा-षड्**, preferably ended by **इति**. Grammatical interference is low in this particular case.

*4.4 Special characters for Mathematical and Scientific Purposes*

Modern Symbolism in Natural Sciences as a byproduct of colonial legacy could be absorbed into modern Indian languages, including Sanskrit, just as we inherited all our punctuation marks. However, there is ample chance that letters from Latin, Greek or other languages from the Occident could be replaced by symbols from primarily Devanagari, Gujarati, Bengali, other Brahmic scripts and even Pazend or Avestan script as an extension to shared Vedic-Zoroastrian cultural heritage. To strengthen this argument, an example of Arabic Mathematical Notation [15] already exists for exhibition.

The source of this idea comes from Dr. Raghu Vira from his Comprehensive Dictionary. He suggests

using Devanagari and Brahmi symbols, which he demonstrates in his introduction to the Dictionary. The Symbols of Elements in Chemical Formulae of Compounds used in section 4.3 were taken from the first volume (Chemistry) of his Great English-Hindi Dictionary. Moving forward, there are some advanced suggestions to make scientific writing more conventional. This is mostly meant for interregional communication and discourses at national level. *This doesn't affect the region-specific or state-specific traditional usages where regional symbols could be applicable, especially in Nursery, Primary and Junior Secondary Levels.*

1. For general purposes, Devanagari symbols may be uniform throughout all languages, even non-Devanagari languages, as much as possible.

2. As an alternative to the Greek symbols or Italic Aesthetics, Gujarati letters and letters from any other scripts could be desired. Those letters can be adopted uniformly in all scripts including Devanagari.

3. In order to avoid confusion, or, according to convenience, Devanagari numerals may be adopted in other non-Devanagari languages.

4. As a replacement to Roman Numerals, Tamil Numerals could be adopted. Malayalam letter ഴ zha-chillu could be used for Zero (பாழ்). E.g. ഴ க உ ங ச ஞ கூ எ அ கூ ய.

5. Usages in Tamil such as க$^2$, க$^3$, க$^4$ etc. may be source of further confusion and thus it is advised to adopt Grantha which more phonetically complete and richer with more consonant letters at some point of time.

Except that we desire reverting to Western Symbols, there is ample opportunity to bring more improvements to the abovementioned suggestions so that the usage could be more diversified and enriched.

## V. INFERENCE AND CONCLUSION

Scientific writing is a very sophisticated art of composing literature. To write a scientific piece of writing is to be more accurate with representative data and statistics.

In this study, as we are laying down the norms of writing science in a new language, in a new geography, and within a different tradition, a lot of changes right from speaking to thinking has been taking place. This is reimagining the pre-existing language of science in a totally different manner.

Writing science in a language like Sanskrit is no less than a major breakthrough. With thorough planning and considerable adjustments, we are linking the past with the present to pave the path forward towards the future of a pan-Asian scientific tradition spanning across India and Indo-Pacific.

## ACKNOWLEDGEMENTS

I pay sincere gratitude towards Anand Viswanathan, Co-Founder of Sarasvata Samsthana Trust and Project Lead of 'Creation of Technical Lexicons in Sanskrit language' for he is spearheading the cause of literary upliftment of Sanskrit and other languages and moral support for the piece of cooperative work done by us.

I am grateful to Dr. Rajath Vasudevamurthy, Project Lead of 'Rejuvenating Mathematics Education'; for their intellectual and analytical inputs and perspectives from the knowledge of Science, Mathematics.

## REFERENCES

[1] Vira, R.; Chandra, L. *A Comprehensive English-Hindi Dictionary of Governmental and Educational Words and Phrases*; International Academy of Indian Culture: 1955.

[2] Vira, R.; Chandra, L. (editor). *Indianization of Scientific Terms; Aditya Prakashan*: 2020.

[3] Vira, R.; Chandra, L. (editor). *Development of Indian Languages*; Aditya Prakashan: 2021.

[4] *The International System of Units (SI)*; Bureau International des Poids et Mesures: 2019.

[5] *Nomenclature of Inorganic Chemistry, IUPAC Recommendations 2005*; International Union of Pure and Applied Chemistry: 2005

[6] Vidyasagar, I. *Samagra Byakaran-Koumudi*; Dev Sahitya Kutir Pvt. Ltd: 2024

[7] Chandra, P. I. *Aṣṭādhyāyī-I*; Chaukhamba Sanskrit Pratishthan: 2022

[8] Chandra, P. I. *Aṣṭādhyāyī-II*; Chaukhamba Sanskrit Pratishthan: 2022

[9] Deekshita, B.; Vamana; Jayaditya. *Vaiyakarana Siddhanta Kaumudi and Kashika Vritti - Volume 2*; Sri Shankara Advaita Research Centre: 2018

[10] Sadhukhan, S. Sanskrit for Organic Nomenclature: Reinventing a Model of Systematically Naming of Compounds based on a 7 Decades old Indian Dictionary, *International Journal of Research and Analytical Reviews*, 2024, 11 (1), 848-869.

FURTHER READINGS

[11] Rubin, J., Jernudd, B, H, *Can Language Be Planned? Sociolinguistic Theory and Practice for Developing Nations*, The University Press of Hawaii, 1971.

[12] Kaplan, R. B., Baldauf, R. B., *Language Planning From Practice to Theory*, Clevedon : Multilingual Matters Ltd, 1997.

[13] Grenoble, L. A., *Language Policy in the Soviet Union*, Dordrecht : Kluwer Academic Publishers 2003.

[14] Lewis, G., *The Turkish language reform: A catastrophic success*, Oxford University Press, 1999.

[15] Lazrek, A., Eddahibi, M., Sami, K., Miller, B. R., *Arabic mathematical notation*, W3C Math Interest Group Note, 31 January 2006. Accessed on 9th May 2026; IST 15:39 hrs <http://www.w3.org/TR/arabic-math>