

# Scientific and Pedagogical Dimensions of Oral Teaching in the Vedic Period: An Analytical Study

Dr. Subrata Bansh<sup>1</sup>

<sup>1</sup>Research Scholar, Department of Physics., Dr. C. V. Raman University, Kota, Bilaspur (C.G.), India

Publication Date: 2026/03/24

**Abstract:** An attempted has been made to elaborate teaching procedure in Vedic period. In Vedic period oral teaching had great importance. Chanting of Sanskrit shlokas has definite frequency and loudness which was abide by the law of acoustics. In this paper researcher discussed about scientific approach of chanting shlokas and maintenance of pronunciation of shlokas. How teacher avoid writing books to maintain the chanting of shlokas in a particular frequency also discussed. Importance of oral teaching and its purpose explained scientifically. It also established a great impact in society.

**Keywords:** Vedic Period, Oral Teaching, Chanting, Acoustics, Frequency, Scientifically.

**How to Cite:** Dr. Subrata Bansh (2026) Scientific and Pedagogical Dimensions of Oral Teaching in the Vedic Period: An Analytical Study. *International Journal of Innovative Science and Research Technology*, 11(3), 1945-1950. <https://doi.org/10.38124/ijisrt/26mar1107>

## I. INTRODUCTION

Indian philosophy about life comes from Veda. Word Veda means knowledge. There is two type of education 'para' and 'apara' vidya. Apara vidya is worldly knowledge of human daily life and para vidya is connected with intellectual pursuits for achieving salvation.

Veda has a great impact in Indian education. Formal Indian education started in Vedic period on the basis of Vedic knowledge. The education system which was developed in ancient India known as Vedic education system. The education system was based on oral teaching. This education procedure has a great significance in Indian life.

### ➤ Objective

The primary objective of this paper is to examine the significance of oral teaching in the Vedic period with a special focus on its scientific foundation in acoustics. It aims to explore how chanting of Sanskrit shlokas, maintained through specific frequencies, vibrations, and pronunciation, functioned as both a pedagogical tool and a means of knowledge preservation. The study further seeks to analyze the methods of Vedic oral instruction—such as *śravaṇa* (listening), *manana* (reflection), and *nididhyāsana* (realization)—and their psychological and spiritual dimensions, while also highlighting their continuity and relevance in modern educational and scientific discourse.

## II. METHODOLOGY

The present study adopts a qualitative, descriptive, and interpretative approach to examine the oral teaching

traditions of the Vedic period. The methodology involves the following steps:

### ➤ Literature Review and Textual Analysis

Primary Vedic texts such as the *Rigveda*, *Taittiriya Upanishad*, and *Sangita Ratnakara* were studied to understand the oral pedagogical practices and their philosophical underpinnings. Secondary sources including books, scholarly articles, and reports (e.g., works of C.V. Raman and UNESCO proclamations) were reviewed to establish a scientific and historical perspective on acoustics and oral traditions.

### ➤ Comparative Framework

The oral teaching practices described in Vedic literature were analyzed in comparison with modern scientific principles of acoustics and speech production. This approach helped to highlight the continuity between ancient insights and contemporary physics.

### ➤ Interpretative Analysis

A hermeneutic method was employed to interpret the symbolic and philosophical dimensions of oral chanting (such as *śravaṇa*, *manana*, and *nididhyāsana*), linking them to psychological, spiritual, and educational outcomes.

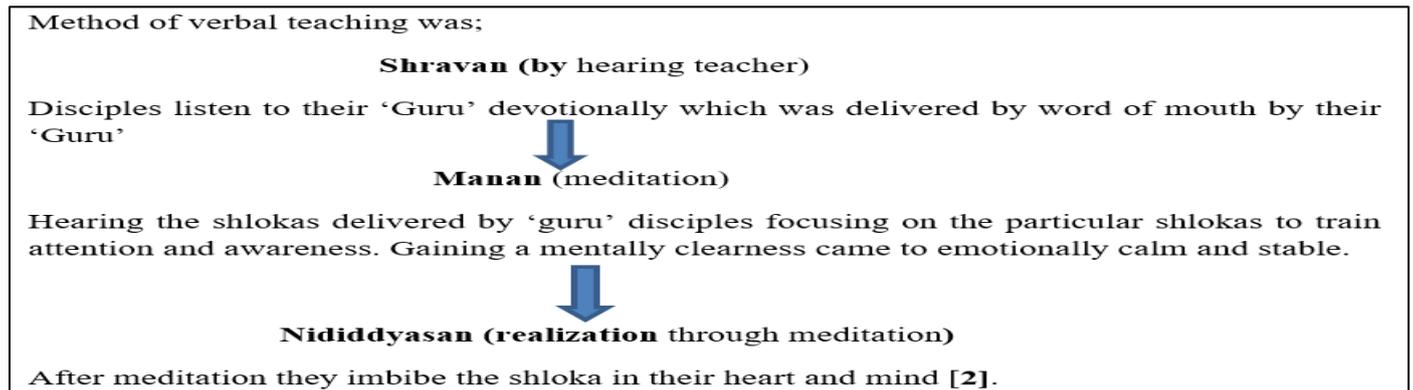
### ➤ Historical Reconstruction

The study reconstructs the teaching environment of the Vedic period (gurukuls and ashrams) through critical examination of historical texts, commentaries, and prior research on ancient Indian education systems.

➤ *Thematic Categorization*

The collected data and references were organized into major themes: oral pedagogy, teacher–student relationship, acoustical laws in chanting, psychological effects of mantra recitation, and relevance in present-day education.

By combining textual study, interpretative analysis, and scientific correlation, this methodology ensures a holistic understanding of oral teaching in the Vedic era, both as an educational practice and as a scientifically informed cultural phenomenon.



➤ *Discussion Method*

In this time discussion between ‘guru’ and disciple was one of the parts of education system. Disciples asked question to guru, guru answered and explain the question.

➤ *Agra Shishya or Peer Teaching*

In ashrams and gurukuls intelligent senior disciples were engaged in teaching junior disciples. One student tutoring another in a supervised environment can be better learning and retention. This is called peer teaching in modern teaching method.

➤ *Teaching by Illustration, Exemplification, Storytelling Maxims*

To teach orally guru used to illustrate and give examples and telling stories to explain shlokas. By this way guru move forward from abstract to concrete and concrete to abstract. Also to teach things he took the help of figures of speech like similes, metaphors etc. [3].

• *Important Aspects of Vedic Education*

- ✓ Mainly Vedic education system was established to teach disciples rig Veda
- ✓ Students in this method go through self-study, thinking, and meditation and imbibe.
- ✓ Not only spiritual teaching but also materialistic, knowledgeable and intellectual teaching also provided[4].
- ✓ The main motto of Vedic education to gain salvation through education.
- ✓ In gurukul and ashram the student and teacher cultivate the principle of simple living and high thinking[5].
- ✓ Students attain the knowledge in observance of celibacy, control observance and parity of life.

➤ *Teaching Method of Vedic Period*

• *Teach by Word of Mouth*

After invention of Brahmi script in Mohenjo-Daro it is a very controversial issue that they could not write or they avoid writing books to teach. However their teaching method was oral. Teacher taught their student by word of mouth. Students concentrate on hearing to the teacher attentively and devotionally by heart [1].

- ✓ Relation between student and teacher was heartily. Student has great courtesy and divine to their teacher.
- ✓ Main criteria to take admission in ashrams and gurukuls were good behaviour and education was free[6].
- ✓ Along with spiritual teaching practical and vocations learning also taught by their teacher
- ✓ Education system was developed in such way that one to one teaching was more important
- ✓ The method of teaching was psychological
- ✓ Thinking and meditation of students bought originality with in them
- ✓ Main motto of Vedic education system was to develop all-round so that they could deal their practical life as a responsible citizen.
- ✓ Oral teaching in Vedic period followed by modern acoustical laws.

Oral teaching i.e chanting of shlokas had definite frequency and wavelength in each and every steps. The chanting of shlokas follows acoustical principle of physics. To maintain piracy of chanting of Sanskrit shlokas probably they avoid writing these shlokas and teaching orally[7].

Acoustics is the subject where cultivate production of sound by generating vibration and transmission through a medium as a wave and reception by a receiver[8]. Vedic literature is full of “Mantaras” i.e Sanskrit shlokas to shout this shlokas it has a particular frequency i.e utilization the knowledge of acoustics. In Veda there is two terms ‘Nada’ and ‘Sabda’ which is nothing but sound. Nada and Sabda have the vibration in audible range for human ear. In Vedas mainly discussed about audio range of the sound by vocal or instrument. There cultivation of acoustics had not only physical aspects but also spiritual. Chanting of ‘Vedic mantras’ has significant approach of acoustics knowledge

such as definite frequency, wavelength, vibration, amplitude[9]. These mantras transmitted from master to his disciples and so on..... So they had maintain particular vibration, amplitude, and the wavelength of mantras i.e they were conscious of knowledge of acoustics. They also believed that this shlokas are speech of Goddess speech (VAGDEVI).

“Devim vacamajanayanta Devaha, Tam Visvarupah pasavo vadanti sa no madersmurj m duhana dhenurvagas manupastutaitu” that means ‘Brhma and other Devata created Vagdevi to communicate each other. All animals utilizes there capability to communicate to each other through Vagdevi [10]. Vagdevi is like cow who fulfilling all desired with food, strength, and ability to speak.’ Dr. C.V. Raman in the article “The acoustical knowledge of ancient Hindus” discussed that development of music is rooted in Rig Veda. According to him “It would form fascinating chapter of history to try and trace the gradual development of musical instruments and musical knowledge, from the rhythmic chanting of Rig Veda in the ancient home of the Aryan race of the Indian music of present day.”

Dr. C.V. Raman was one of the pioneer’s researchers on Vedic Acoustics Gandhrava Veda mainly mentioned about musical aspect, definite frequency, vibration and pitch of tone of Mantras of Veda. As those mantras passed on by work of mouth from one generation to another it needed exact knowledge of acoustics otherwise mantras may be distorted and that will be meaningless. UNESCO also appreciated that mantras of Veda has scientific approach. “Expressed the Vedic language, which is derived from classical Sanskrit, the verses of the Vedas were traditionally chanted during scared rituals and recited daily in Vedic communities The value of this tradition lies not only in the rich contents of its oral literature but also the in genius techniques employed the Brahmin Priests in preserving the texts intact over thousands of years. To ensure that the sound of each word remains

unaltered . Practitioners are taught from childhood complex reaction techniques that are based on tonal accents a unique manner of pronouncing each letter and specific speech combinations” UNESCO Proclamation 2023.

➤ *Different Terminology Related to Sound According to Vedic Literature*

- *According to ‘Taittiriya’ Upanishad*
  - ✓ Varnaha; pronunciation/ i; e to chant with definite frequency.
  - ✓ Svarha; pitch of sound
  - ✓ Matra; a beat- the smallest rhythmic sub unit tala (a musical meter)
  - ✓ Balam; force/ loudness
  - ✓ Sama; melody
  - ✓ Santanoha; combination of sound from different source.
  - ✓ Nada, Sabda; refers sound of audible and inaudible range. It is mentioned as sound field. Nada and Sabda are the creation of sound by human beings for speech and music [12].

Saranga Deva, the author of Sangita ratnakara says “caitanyam sarva bhutanam vivritam jagadatmana nada brahma tadanandam advitiamupasmhae’ i.e ‘we the nada brahman second to none which is blissful and is all beings as consciousness has manifested itself as universe.’ This mantra suggested that Nada is of two types 1) Anhata 2) Ahata Anhata; it is not related any type of vibration it is produced by spirituality and deepest stge of Yoga[13].

Ahata; production of ahata is due to vibration of source. Ahata is the sound generated from vibratory source which has main contribution to produce music, speech, literature and yoga.

➤ *Production of Speech According to Vedic Literature*

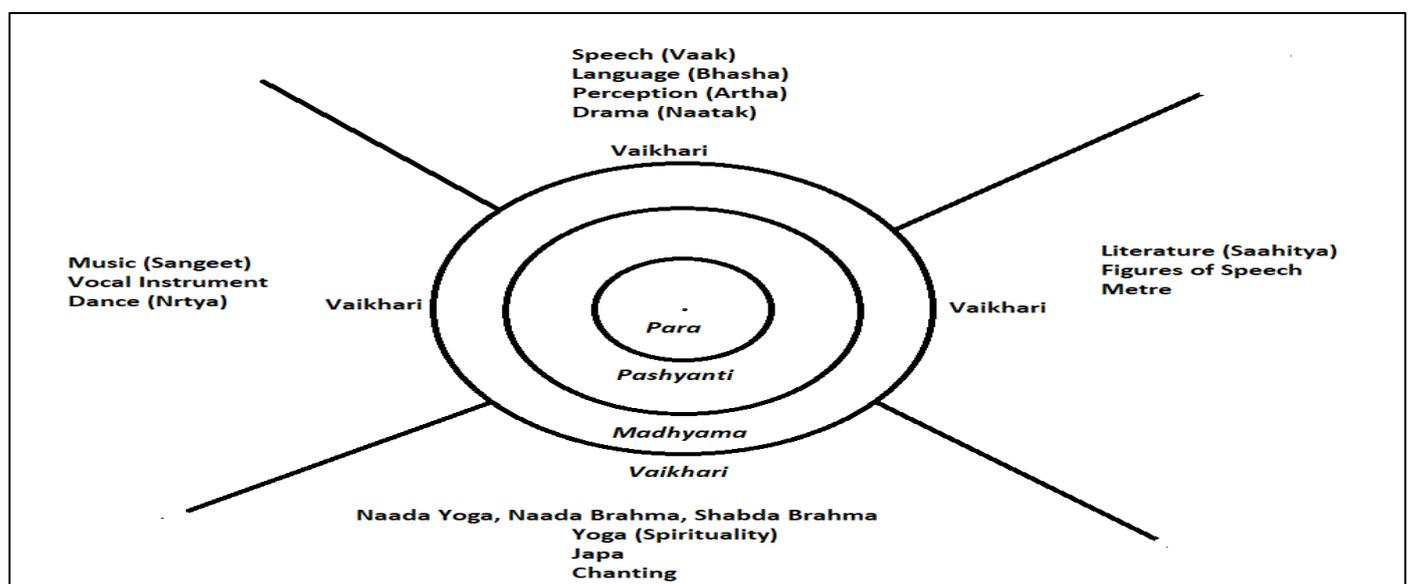
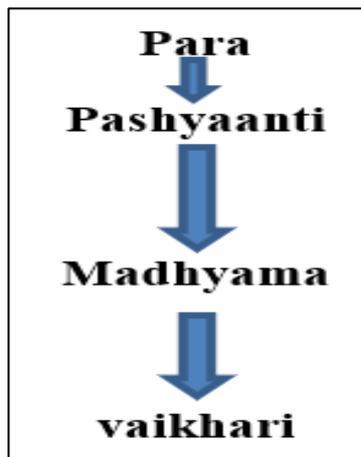
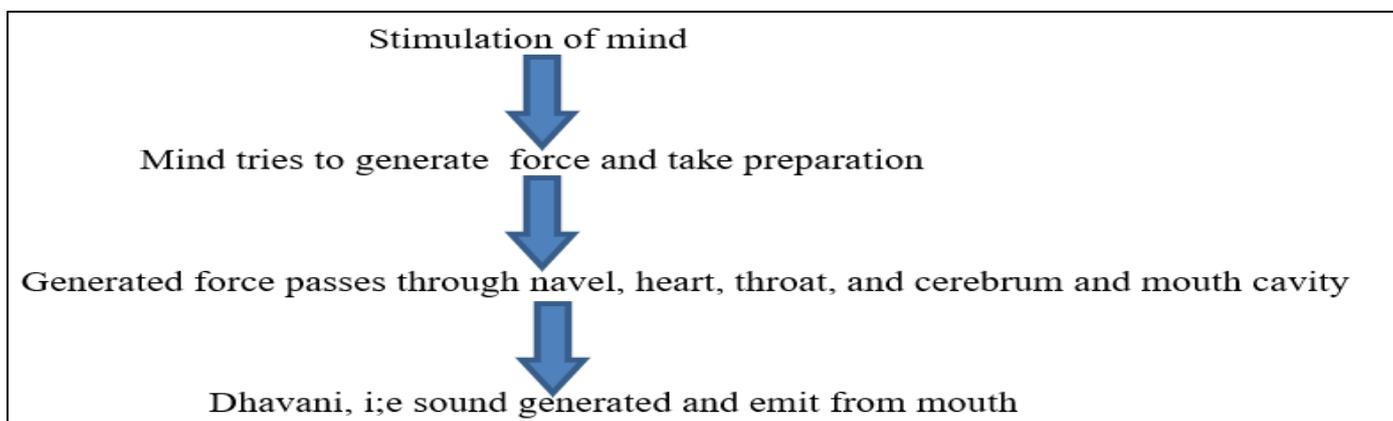


Fig 1 Representation of the four Fields of Sound at Vaikhari Level

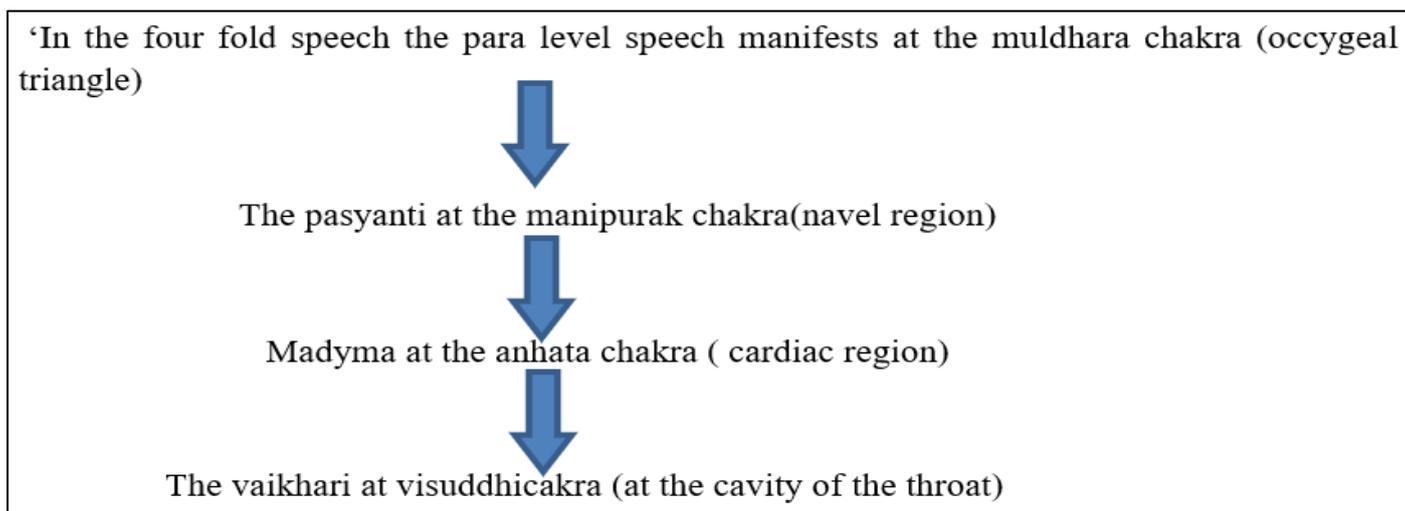
According to Vedic literature speech production by human is four stage process.



In Taittiriya Brahmana it was mentioned that “catavari vak parimita tani vidur brahamana ye manisnaha guha tirini nihita nengayanti turiyam vaco manusyaha vasdanti.” Which means ‘speech or word has four stages which are known by brahmna who has control over mind, is well versed in this field. The first three stages are concealed in the cave while only the fourth stage comes out as utterance by human beings. According to Sargana Deva in ‘sangita ratnakara ‘creation of sound is “atma vivaksama naoyam manha prerayate, manaha deshatham vahnimahati sa prerayati marutam brahma granthis thitaha soetha kramaturdhvathe caran nabhihrtkan tasyises avavir bhavayati dhvaim”. i.e ‘the human being implies the mind and the activates the internal power source in the body which in turn stimulates the vital force. the vital force hit the around the root of the navel, rising up words gradually through the heart, and the cerebrum and the cavity of the mouth as it passes through them to manifest dhvani”. This implies four steps of production of sound [14].



Another Hindu texture also discussed about formation of speech through four stages “para vangmulacakrastha pasyanti nabhisamsthita hridga tu madhyama jneya vaikhari kanthadesagis.” This means.



In comparison to modern science Vedic acoustical view in production dhani i.e sound is more logical approach than modern view in production of speech because in modern view of science do not include physiological aspect here only consider work function of physical organ of human beings

[15]. Vedic view also includes speech as divine energy to developed spiritual progression. This fourth fold sound generation in Vedic concept can be applied to explain any type acoustical incidents.

➤ *Vedic Mantra Acoustical Approach*

Vedic mantra and shlokas are the bridge to connect people from sensual level to spiritual level of ‘Atman’[16]. Seven notes were used in Vedic mantra which is in modern music. Sarvas means Vedic mantras, note in music and vowels in language. Sarvas in music defines seven notes of music production of nature

➤ *Sarvas*

- Sa- comes from peacock
- Ri-comes from bull
- Ga- comes from goat
- Ma-comes from curlew
- Pa- from cuckoo
- Dha- from horse
- Ni –from elephant

Raga- this is the word which is frequently used in Indian classical music. To express mood or emotion combining different sarvas raga is produced. Raga is nothing but acoustics presentation of sarvas. In Vedas two types of music was found one is vocal and other is instrumental[17]. Vocal music i.e mantras are produced by four stage process where instrumental was generated by different well designed tuned instruments. To design these instruments scientific and engineering knowledge required. In Vedic period there was different type of musical instrument. The renowned

• *Key Differences:*

Table 1 Key Differences

Aspect	Vedic System	Modern System
Medium	Oral	Written/Digital
Learning Style	Auditory & Meditative	Visual & Analytical
Teacher Role	Central (Guru)	Facilitator
Focus	Holistic Development	Skill-Based Learning

• *Key Similarities:*

- ✓ Use of discussion methods
- ✓ Peer learning approaches
- ✓ Emphasis on understanding concepts

**III. DISCUSSION AND INTERPRETATION**

The study highlights that oral teaching in the Vedic period was not only a cultural tradition but also a deliberate educational strategy supported by scientific and spiritual considerations. By avoiding writing and emphasizing oral chanting, teachers preserved the accuracy of pronunciation, rhythm, and frequency of *ślokas*, ensuring their acoustic and spiritual integrity. This practice demonstrates that Vedic scholars intuitively understood principles of acoustics, vibration, and sound preservation long before these concepts were formalized in modern science. The use of *śravaṇa* (listening), *manana* (reflection), and *nididhyāsana* (realization) further indicates a learner-centered pedagogy that encouraged active listening, meditation, and

instrument were Veena (held by Goddess Saraswati), Mridanga tabala.[18] There are more instruments that have different utilization in different aspect such as conch shell, bell, cymbals and singing bowls. Sound produced by this instrument has special effect and spiritual significance[18].

➤ *Acoustics in Literature*

Vedic literature was written in Sanskrit language which has great acoustics significance. Sanskrit language differ itself from other for its melody i.e its acoustical approach [19]. Distinguishable phonetic quality found in poetry, prose of Sanskrit. Some acoustical approach of Sanskrit; Sandhi; joining of two words refers combination of two tones and production of new are. Derivation of words from same root has similar acoustical approach such as Vidwan: scholar Vidyarthi: student. Acoustical approach is found in Vedic period mainly in mantras, Sanskrit shlokas, literature and different musical instruments. Four fold approach of generation of sound in Vedic view can be applied in modern scientific explanation in any kind of production of sound. Vedic mantras have great effect in physiological and neurological point of view [20].

➤ *Comparative Analysis with Modern Education*

Modern education relies heavily on written and digital methods, focusing on visual learning. In contrast, Vedic education emphasized auditory learning and memory training.

internalization—methods still valued in contemporary psychology and education.

Moreover, practices such as peer teaching (*agra śiṣya*), storytelling, and illustration reflect a holistic and interactive approach to learning, integrating intellectual, moral, and spiritual development. Vedic education thus went beyond knowledge transmission to shape disciplined, responsible, and ethical individuals. The scientific structure of Vedic chanting, recognized even by UNESCO, shows its enduring cultural and educational value. In this light, oral teaching in the Vedic era may be interpreted as a multidimensional system—scientific in method, spiritual in essence, and pedagogical in application—offering timeless insights for modern education.

**IV. CONCLUSION**

After the invention of Brahmi lipi in Mahejodhro it is questionable that they did not aware of writing. They may intentionally avoid writing the shlokas to keep piracy of chanting. Pronunciation has great importance in the field

teaching Sanskrit .they wanted to maintain it by the word of mouth by eminent persons. Each and every step they followed acoustical principal in chanting shlokas. They thought writing of Veda may distort the chanting of shlokas by the hand of incompetent people.

### REFERENCES

- [1]. Sengupta P.C, “Ancient Indian Chronology,” (1947), University of Calcutta Press,
- [2]. Acharya Pt. Sri Ram Sharma., “Divine Message of Vedas”, Vedmata Gayatri Trust Shantikunj, Haridwar, 2010.
- [3]. Frawley David, ‘Modern Science & Vedic Science’ (2020), American Institute of Vedic studies.
- [4]. Chandler Kenneth, “Modern Science and Vedic Science; an Introduction” (1987)
- [5]. Talageri Shrikant G. (1962) The Rigveda: A Historical Analysis Aditya Prakashan, New Delhi.
- [6]. Tripathi, R. RS. (1971) “History of Ancient India”, Orient Publication, Delhi.
- [7]. Raja, CK (1950), Some Aspect of education in Ancient India, Adyar Publication, New Delhi.
- [8]. Giri, Mahadevananda (1947), “Vedic Culture, Calcutta University, Calcutta.
- [9]. Das, Santosh Kumar (1931) The Educational System of Ancient Hindus, Mitra Press, Calcutta.
- [10]. Bhandarkar D.K (1977) Some Aspect of Ancient Indian Culture, Orient Publication, Delhi. 7. Altekar, A.S (1961) Education in Ancient India, Nanda Kishore Brothers, Banaras.
- [11]. [https://www.facebook.com/spdacharya/posts/195713438926202/?paipv=0&eav=AfbEJn7hVyx\\_7-9bYwNGN9\\_nnbXwWtuuC6CxLEcz8r6LSLoeBbTja0ybO3r5lbSgOzU&\\_rdr](https://www.facebook.com/spdacharya/posts/195713438926202/?paipv=0&eav=AfbEJn7hVyx_7-9bYwNGN9_nnbXwWtuuC6CxLEcz8r6LSLoeBbTja0ybO3r5lbSgOzU&_rdr)
- [12]. Kabir, Humayun (1961) Indian Philosophy of Education, Asia Publishing House, Bombay.
- [13]. Sequeira, T.N. (1952) “The Education of India, History and Problems, Oxford University Press, Bombay.
- [14]. Ghosh, Suresh Chandra (2001) “The History of Education in Ancient India, Munshiram Manohar Lal Publications, New Delhi.
- [15]. Das Subhendu, (2017) ‘A Comparison of Modern Science with Vedic Science’ RST, No 1(17)/2019, P2247-4455.
- [16]. Das S. (2013-1). “A scientific theory of destiny”, Global Journal of Science Frontier Research, Mathematics and Decision Sciences, Volume 13 Issue 8 Version 1.0 Year.
- [17]. Rama S, (2007).” Living with the Himalayan Masters,” Himalayan institute press, 153 pages.
- [18]. Prasad M. G., “Science of Sound in Hinduism” (2019), Recorded at INATCH, New Dehali
- [19]. Bharadwaj Ajay., “Vedic Knowledge: An Integral and Scientific Approach”, International Journal of Science and Consciousness, PP-32-37, 2015.
- [20]. Knut Jacobsen, Theory and Practice of Yoga, Motilal Banarasidas, ISBN 978-8120832329, PP 100-101