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RESEARCH ARTICLE

Science Literature in Indian Languages: A Study of Punjabi Language

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ABSTRACT

The context of this paper is to find out the status of science (and technology) literature being published in Indian languages. Science can reach masses only if it's in their mother tongue. Indian languages are rich repositories of scientific knowledge, although terminologically these have not matched the developments in European languages. The paper focusses on scientific literature in Punjabi language (Gurmukhi script). A descriptive approach is used, followed by brief analysis of the situation. In spite of efforts by various agencies such as the Commission for Scientific and Technical Terminology, Government of India; the Languages Department, Government of Punjab; Punjab Agricultural University; Punjabi University; and Punjab State Council for Science and Technology; there are only a few publications only on science in Punjabi language from the public sector institutions. Many others, such as leading Punjabi language newspapers regularly carry articles and other information on science. Increasing number of science resources in Punjabi are also being made available on the Internet. A brief list of such resources is provided in the paper along with suggestions for improving the situation.

KEYWORDS: Punjabi language, Science literature, Indian languages, Multi-lingualism.

Science Literature and Indian Languages

Science, science communication, and scientific communication can best be understood by the layman in his/her mother tongue.

Every year International Mother Language Day is celebrated on 21 February to promote linguistic and cultural diversity and to promote multi-lingualism. India is a diverse country having hundreds of written and spoken languages and their dialects. Twenty two languages are officially recognized by the Government of India. The context of this paper is to find out the status of science (and technology) literature being published in Indian languages with a focus on Punjabi language, one of the twenty two officially recognised languages.

Indian languages, including Punjabi, are rich repositories of scientific knowledge, although terminologically these have not matched the developments in European languages. An argument that one generally comes across is that Punjabi and other Indian languages are not suitable for promoting science and technology. There are terminological problems, but if English and other European languages can borrow heavily from many other languages, so can Indian languages.

Punjabi (also spelt as Panjabi) is the official language of Punjab state, and is widely spoken and written in all its neighbouring and a few other states. Globally, Punjabi language is spoken by more than 100 million people and is the 10th most spoken language in the world, with majority of its speakers in India and Pakistan. Two scripts are used for Punjabi writing. Gurmukhi script is used in India, whereas Shahmukhi script is largely used in Pakistan.

Literature in Punjabi language is published in India and Pakistan, and in many countries of Europe, North America, and Southeast Asia wherever Punjabi diaspora have settled in large numbers. This paper focuses on literature on science (and technology) in Punjabi language (Gurmukhi script) that is being produced in India. This paper introduces scientific literature in Punjabi language through a descriptive approach, followed by brief analysis of the situation. To understand the efforts in science and technology literature in Punjabi language, here the authors have adopted both the top-down and the bottom-up approaches.

Top-down Approach

In the top-down approach, efforts of various institutions and departments established by the Government of India and the

Punjab Government are discussed briefly. At the central government level, the Commission for Scientific and Technical Terminology (CSTT) under the Ministry of Human Resource Development, Government of India is the primary agency for developing bilingual/trilingual dictionaries, glossaries and terminologies in various Indian languages for S&T subjects. But with a meagre budget and a herculean task, there is hardly any effective output in Punjabi, though work is in progress in many subject areas.

There are seven books on computers, information technology, and the Internet translated from English in Punjabi (and in a few other Indian languages) published by the National Institute of Science Communication and Information Resources (NISCAIR), New Delhi. Topics/titles of these seven books are: Microsoft Word for Beginners; Microsoft Power Point; Web dot Com; Build your web home; C++ for beginners; The 'C' Adventure; and Visual Basic.

At the Punjab State Government level, the main agencies dealing with Punjabi language and S&T literature include the following:

- The Languages Department, Punjab Government at Patiala;
- Punjabi University, Patiala;
- Guru Nanak Dev University (GNDU), Amritsar;
- Panjab University, Chandigarh;
- Punjab School Education Board, Mohali;
- Punjab Agricultural University (PAU), Ludhiana;
- Punjab State Council for Science and Technology, Chandigarh; and
- Agriculture Department, Punjab Government.

The Languages Department of Punjab published a few glossaries many years ago, *Van vigyan vishe de shabdavli* (=Glossary of forest science subject) in 1995. *Doctory shabdavli* (=Doctor's Glossary) in 1969 and *Punjab dian titlian* (=Butterflies of Punjab) in 2000 have been published by Punjabi University, Patiala. This university has also published a few other books, and dictionaries on science and technology (S&T), in spite of having large resources, many S&T departments, and specialized departments for Development of Punjabi Language,

and Punjabi Lexicography. One example of a recent Punjabi book on health published by the university in 2009-10 is *Naroyi Nari* (= Healthy woman), dealing with health, wellness and medical issues, and is authored by a female medical doctor. *Vigyan de Naksh* is a periodical regularly published on S&T in Punjabi by the Punjabi University. Punjab State Education Board, Mohali, GNDU, Amritsar and Panjab University, Chandigarh have also published a few books on S&T in Punjabi (Singh, 2003). A few reference books on science and technology in Punjabi language have been described by Satija et al (2018) in chapters – 7, 8 and 11 of *Punjabi Reference Sources: a descriptive guide*.

Major work for Punjabi literature in one specific area of S&T – agriculture – has been done by the PAU, Ludhiana. It publishes a monthly magazine both in Punjabi and English versions entitled *Changi Kheti* (=Progressive farming). Besides this periodical publication, PAU has published 59 books/booklets on various topics of agriculture and animal husbandry. It has also launched a *Kisan Portal* (=Farmers Portal) <http://www.pau.edu/fportalnew/> where a variety of information about agriculture in Punjabi is available. Punjab State Council for Science and Technology (PSCST), Chandigarh publishes a monthly Punjabi magazine *Nirantar Soach* for the last 21 years, and its circulation is quite high, partly because of its very low price. But its limitation is that its every issue is not to exceed 30 pages. PSCST also translated in Punjabi a small manual/question-answer booklet on patents and intellectual property rights many years ago, but that is not available through its website. Besides this, PSCST also published a few CDs on some topics many years ago. The Agriculture Department of Punjab Government has also published 8 booklets on various crops, and a few of these are available on the Internet via <http://agripb.gov.in/home.php?page=agpub>.

If we are to analyze the situation of public sector institutions at central and state governments level, it would not be incorrect to say that, apart from the publications of PAU and Punjabi University, there are only a few publications on science and technology available in Punjabi language. The efforts of many of the above-mentioned organizations are scattered and the overall

approach to producing science literature in Punjabi is ad-hoc in nature. There is a need for a policy that can sustain such programmes and develop literature on a continuing and sustainable basis both in the print form and the electronic form.

The Bottom-up Approach

Many leading Punjabi language newspapers, such as *Ajit* (<http://www.ajitjalandhar.com/>) and *Punjabi Tribune* (<http://epaper.punjabitribuneonline.com/>) regularly carry articles and other information on science and technology issues. Punjab, being a primarily agricultural state, has many publications and websites on agriculture, such as *Mehram* and *Modern Kheti* magazines and a website *Changi Kheti* (<http://changikheti.com/>), which is not just a website but a portal on agriculture and animal husbandry. Besides, it has developed a Punjabi app for its users <https://changi-kheti-punjabi-app.en.9apps.com/>.

A few other science resources in Punjabi, dealing primarily with agriculture are also available on the Internet. Besides these efforts, many other individuals such as Dr. D.P. Singh (Singh, 2018) have been working for many years on specific areas and they publish their works, but most of this literature remains out of reach of the common man, primarily because it is not published by leading agencies in the public and private sector.

Concluding Observations

Literature on S&T in Punjabi is still very limited, but the efforts of public sector organizations need to be focussed and integrated, rather than each organization working in its own way. Involving stakeholders, researchers, farmers, and science communicators who have been writing in Punjabi language is the need of the hour. Some public sector organizations should come forward to formulate an integrated programme for producing science literature in Punjabi language, both in printed form, as well as in electronic form, by involving all stakeholders.

Besides production of new scientific literature, efforts should also be made to collect all such material at least at one place (a university, research institution, or a library) in Punjabi and in other Indian languages. Whether such materials be collected

(and made available/accessible to users preferably free of any charges) at national level or at state levels or both national and state levels needs discussion among the science communication fraternity. If we are able to collect such materials at one place (for each Indian language), appropriate information services to user communities can be provided based on such collections. That way science communication can be promoted by going away from the largely elitist approach centred on English language resources and services.

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