EDITORIAL

Welcome to the June–September 2024 issue of the School Science journal.

This issue of the journal presents a diverse yet interconnected compilation of articles that explore pressing educational, environmental, scientific and historical issues. From evaluating the implementation of sanitation initiatives under the Swachh Bharat, Swachh Vidyalaya programme to analysing student behaviour around plastic usage, these studies highlight the role of awareness, policy and pedagogy in driving change. Other contributions investigate innovative teaching methods, such as the use of Morphon cards in biology education, and the need to integrate ethical reasoning into science curricula, particularly in emerging fields like genetic engineering. The volume also pays tribute to forgotten scientific pioneers like Pranakrushna Parija and traces the historical journey of scientific processes such as distillation. Together, these articles reflect a commitment to both contemporary relevance and deep scholarly inquiry.

The first research paper, 'A Study of the Sanitation and Hygiene Provisions Under Swachh Bharat, Swachh Vidyalaya Programme: Across States/UTs in India', assesses the Swachh Bharat Swachh Vidyalaya (SBSV) programme, a critical component of the Swachh Bharat Mission (SBM) launched in 2014, which aims to provide sanitation and hygiene facilities across India by 2030 in line with the United Nations Sustainable Development Goal 6. Focusing on the water component in schools, the study evaluates its impact in various states and union territories. By identifying best practices and areas for improvement, the findings will help states or UTs adopt effective strategies and serve as a model for other nations striving to achieve global sanitation goals.

The article, 'Understanding Buying Behaviour and Awareness of Students Regarding Plastic Usage', explores the growing environmental threat posed by plastic, a material that has become indispensable in daily life but contributes significantly to pollution. Despite its many advantages, plastic waste, especially microplastics, has infiltrated even the most remote areas, impacting terrestrial and aquatic ecosystems. The study examines students' awareness and buying behaviour regarding plastic usage at the household level, highlighting common sources of plastic waste linked to lifestyle choices. It also suggests strategies for reducing plastic use and promoting waste segregation at the source. Emphasising the need for integrated awareness programmes in schools, homes and communities, the article advocates for eliminating single-use plastic to protect the environment.

The next article, 'Effectiveness of Morphon Cards in Learning About Various Organisms', explores the use of Morphon cards to improve Class VIII students' ability to identify and describe organisms. These cards feature pictures of organisms and are paired with description cards in Tamil. The study,

conducted with 18 students in Thanjavur, Tamil Nadu, used a pre-test and post-test design. The results showed a significant improvement with a t-value of 8.04 and a large effect size (Cohen's d = 1.895). The study recommends that science teachers adopt this method to help students better understand biodiversity.

The article, 'Questions on Ethics and Beyond in Science Education—Exploring through the Lens of Gene Editing', examines the ethical issues arising from genetic engineering and gene editing, which, despite their benefits in areas like healthcare and food production, raise important moral and ethical questions. Such critical issues are often inadequately addressed in science curricula. The article argues that science education should engage students in discussions about the broader ethical and philosophical questions, such as the ultimate goals of scientific advancements. By doing so, students can make informed, ethical decisions in their future roles as researchers, scientists, engineers and policymakers. The article also offers suggestions for integrating these ethical concerns into science education, in line with the recommendations of the National Education Policy 2020.

The article, 'Pranakrushna Parija: A Forgotten Scientist and Academician', highlights the life and contributions of Pranakrushna Parija (1891–1978), a renowned Indian botanist and educator. Trained at the University of Cambridge under Frederick Frost Blackman, Parija made significant advancements in plant science, particularly in plant respiration and fruit ripening. His collaborative research with Blackman in 1928 on the relationship between fruit ripening, oxygen tension and respiration led to groundbreaking papers in plant physiology. The article also highlights Parija's dedication to science, education and societal welfare which left a lasting impact until his death.

The article, 'Evolution of Distillation from Ancient Era to Modern Era', re-examines the origins and early history of distillation, traditionally traced to the Greeks and Arabs, by exploring various types of stills across the world, including India. It investigates the influence of alchemists on the development of distillation techniques and reviews historical texts to trace the evolution of distillation from ancient to modern times. The article highlights distillation's key applications such as alcohol production and essential oil extraction based on historical records.

This issue also features noteworthy findings and recent developments across various scientific fields, presented in the 'Science News' section.

As an organisation committed to advancing school education nationwide, we welcome your valuable suggestions to help improve the quality and impact of this journal.

Happy reading and happy learning!