



“From Rasashastra to Virtual Labs: Indian Knowledge Systems, Chemistry, and Digital Learning”

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Abstract

IKS, particularly Rasashastra and other traditional chemical practices from India are a treasure trove in science, which has had an impact on the growth of chemistry over the centuries. Nevertheless, such knowledge systems are largely invisible to the current science education in a world of technology-enhanced learning. In this paper we look at how IKS can be harmonized with modern chemistry education using digital learning systems. It investigates how modern instructional technologies, –like Virtual labs, learning Management Systems (LMS), Simulations and AI based tools– may be harnessed to reinterpret, archive and teach ancient Indian chemicals knowledge in the light of contemporary science. By integrating Rasashastra with virtual labs, this study raises awareness about novel pedagogical frameworks based on experiential, inquiry-based and inter-disciplinary education. Challenges with digitization, science validation, curriculum alignment and teacher preparedness are also addressed in the paper. Its implications are discussed in the context of NEP 2020 and increasing demand for culturally rooted, but technologically savvy education. The study suggests that technology mediated digital learning provides an effective, sustainable and scalable means of rejuvenating Indian Knowledge Systems in chemistry education; one which promotes a deeper conceptual perspective and ensures that India’s scientific heritage is passed on to the future generations.

