

KSTA's policy paper on 'Revamping Science Education in Karnataka'

Karnataka Science and Technology Academy (KSTA) is a unit of the Department of Science and Technology, Government of Karnataka with a vision to nurture and enable dissemination of knowledge, science and technology for all. It strives to play a pivotal role in science promotion, technology dissemination and fostering innovations for societal welfare. From time to time, KSTA brings out policy/strategy/status papers on relevant topics to help planners take informed decisions.

The twenty-first century is filled with challenges that are not only national but global in nature and encompass all spheres, environment, economy and international relationships. It is poignant to ignore such challenges. Gratifyingly, India is in the process of implementing the newly formulated 'National Education Policy-2020' (NEP-2020) evolved under the chairmanship of Dr Kasturirangan. The NEP-2020 provides a huge opportunity for transformation of education scenario in India. It also comes with many practical problems in the course of its implementation, in letter and spirit. It calls for integration of interdisciplinary and trans-disciplinary fields of studies and use of multidisciplinary approach in teaching-learning pedagogies. Further, the science education needs to be geared to promote critical thinking, creative thinking and making innovations. Assessments have to be competency based rather than content based rote learning. In view of these compelling needs, the KSTA in its wisdom felt that now is also the most opportune moment for 'revamping' and 'repurposing' science education. Quality science education is essential to

sustain and overcome the challenges of the 21st century in all spheres of human life. With this objective in mind and to facilitate the planners of higher education, KSTA constituted a committee under the Chairmanship of Prof. S. K. Saidapur with other expert members and brought out a policy paper titled 'Revamping Science Education in Karnataka'. This policy paper traces the history of science education in India, challenges of the digital revolution (the third wave of internet-internet of everything) and consequent problems arising out of many job disruptions, and clearly identifies the grounds for revamping science education.

This policy paper has nine sections, viz. (1) Executive summary, (2) Preamble, (3) Growth of science: A brief perspective, (4) Emerging trends in science and technology, (5) Impact of industrial revolutions, (6) Need for globally competitive science education, (7) National education policy in brief, (8) The recommendations, and (9) Concluding remarks. The Saidapur Committee resiliently believes that it is time to repurpose science education all the way from school to UG/PG levels so as to prepare students for: (1) Career management, i.e. diversification of options available at UG level to build career, (2) Skill empowerment, i.e. to enable direct employment, (3) Research ability and intellect, i.e. to empower them to undertake research, (4) Right scholarship – deep and broad, i.e. to nurture hunger for knowledge, desire to know, and (5) Becoming independent thinkers, i.e. to develop 'seekers'.

The above objectives guided the Committee in formulating the recom-

mendations. The recommendations are clearly illustrative and far-reaching in scope and impact. They are classified under six major categories: (i) Creating 'state-of-the art' infrastructure'; (ii) Empowering faculty to take on new roles; (iii) Curriculum development and assessment; (iv) Teaching-learning processes and assessment; (v) Promoting research and innovations; (vi) Science communication and practice of ethics

In brief, the policy paper is an 'action-oriented' document with a high potential for meaningfully reforming science education in Karnataka as well as in the whole country. It is in a way a reference guide for management of science education, and an adjunct to the NEP-2020. It is designed to help in the implementation of the new education policy and modernizing science education at UG and PG levels. Therefore, the policy paper may be seen as a harbinger of quality science education. Needless to say, that to withstand global challenges and earn a place of global citizenship, India needs a sound science and technology base.

It is hoped that Karnataka being the hub of science & technology takes a lead in resetting its science education and research and become a model for other states as well. The copies of the policy paper will be made available to interested departments, institutions and universities. However, the soft copy of the policy paper can be accessed from the KSTA website (<https://kstacademy.in/>).

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