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REFORMS IN SCIENCE TEACHING: A MACRO VIEW

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Abstract

In today's era generally creativity, curiosity, constructivism, collaborative words are interpreted as reforms in science teaching. The essence of all these new terminologies can be traced back to the words of George Bernard Shaw, "He who can, does; and he who cannot, teaches". These words compel us to think that do we really need teacher or facilitator, for our blooming generation. Today's scenario lays emphasis on technology, equal involvement of students and teachers in learning, skill development and above all for science teaching updated knowledge is utmost requirement as advancement in science is taking place at rapid pace. For all these reforms qualitative pre service teacher education as well as in service training in science teaching is need of the hour.

Keywords: *Reforms, Science Teaching, Organizational Features*

Introduction

Today in this modern era science education has become synonymous with experimentation. It has now developed as a full fledged technique of acquiring information, language of science had taken a definite shape, scientific institutions have been developed and technology has made a decisive break-through. But when we look back to the history then we are shocked to know that science was not a school subject in the beginning of 20th century in our country and it was only in the name in the universities. The Report of the Secondary Education Commission, 1953 recommended the teaching of General Science as a compulsory subject in the high and higher secondary schools.

Analysis of Science Teaching Reforms

The All India Seminar on the teaching of science in secondary schools held at Tara Devi (Shimla Hills) in 1956 dealt with almost all the problems facing the inclusion of General Science as a core subject for the Higher Secondary classes. It was the first of its kind which touched almost all the aspects concerning the teaching of science in schools namely, syllabus, equipment and apparatus, method of examination, teaching aids in science and other allied topics like text books, science clubs, museum etc. After this many parliamentary and scientific committees and commissions have been set up like Indian Education Commission (1964-66) Ishwarbhai Patel Committee (1977), NCERT, SCERT.

States SCERT incorporates the functions of the State Institutes of Education which have been set up in all the states with a view to improve the quality of science education in the schools, the main function of these institutes are to provide in service training to science teacher in the new developments in the field of science education, prepare instructional materials in science, conduct research studies in science education of the respective states, provides guidance service in science to schools, take up innovative programmes in science education and participate in the National Science Programmes. Although the reforms in science teaching are not static but the process is slow, its pace has to be increased to be at par with rapid development in this field, thus scientific education is best fostered as a part of a general emphasis on intellectual activity with an integration of values like utilitarian, vocational, cultural, moral and aesthetic. Teaching reforms must emphasize on training in scientific method, development of scientific attitudes and psychological values as the principle of activity is the main basis of the teaching of science which satisfies the instinct of curiosity, creativeness, self assertion and self expression of the pupils.

Organizational features of Science Teaching

In order to examine organizational features of science teaching it is essential to map the policies and strategies put in place to improve teaching and promote science learning in schools and specifically look at the support available to teachers to help them change students' attitudes to science and raise levels of interest in this key subject. We support many separate initiatives but overall strategies to improve science education are rare. Most of the countries which have a science promotion strategy in place science-oriented career guidance is an integral component but specific career guidance measures to encourage future scientist are rare. Although many programs and projects have been launched like societal research fellowship under a programme named DISHA (Department of Bio-Technology) which is among few initiatives which focuses on encouraging girls to choose scientific careers. Similarly, there is need for implementation of policies to support gifted and talented pupils.

A nationwide programme for tackling low achievement generally in schools is also needed to be included in science teaching reforms. Official guidance material to help teachers assess students' science-specific skills is needed as there is no distinction between specific science assessment guidelines and those which apply to all curriculum subjects. Teacher's professional development combined with in-school-lesson evaluation and co-teaching is required for better results in science teaching.

Conclusion

It is well established that many teachers are resistant to take up the messages of change in science teaching if these messages require them to substantially shift their teaching practices. The objective should be to contribute to the improvement of pre-service teacher education. The focus of which should be the development of student teacher experience in the schools, establishment of a system of faculty school partnerships, development of a sets of standards in teacher education. It should also be assisted with the provision of long term and short-term fellowship and in upgrading the facilities of all the schools of teacher education.

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