Science Education in Nepal: A Historical Perspective

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***Abstract*:**

In recent times, there has been a growing public anxiety about the teaching and learning of science in Nepal. The quality of science teaching and learning have also been questioned over time by parents, science educators, and the public and even by the government. Science teaching in school level of Nepal has been criticized because of the poor performance of students in science subjects in comparison to other subjects.

Hence, this article is focused on historical background of science education in Nepal. The main purpose of this article is to find out the global context, Nepalese context mainly in the different educational commission reports and different reports published by science education related projects. Finally, the article will be terminated with brief conclusion.

Key words Science, Technology, Technical education, Education commissions, Performance, quality

Background

In recent times, there has been a growing public anxiety about the teaching and learning of science in Nepal. Glimpse of the school education system showed that large numbers of students seem to learn very little science at school, learning tends to be by rote and students find learning of science to be difficult (Mathema and Bist, 2006). The quality of science teaching and learning have also been questioned over time by parents, science educators, and the public and even by the government. Science teaching in school level of Nepal has been criticized because of the poor performance of students in science subjects relative to other subjects.

A number of factors have identified to be responsible for these poor performances in science from the various studies conducted in Nepal. These include the lack of motivation for most teachers, poor infrastructural facilities, inadequate textual materials, attitude of students to learning, lack of teaching skills and competence by science teachers, and lack of opportunities for professional development of science teachers. Moreover, poor classroom organization, lack of management techniques and poorly co-ordinate student activities also reduced the quality of science teaching and learning (Bhatta, 2012). The other bitter reality is that only theoretical aspect of the content is tough in the classroom and students seldom go to the laboratory in almost all secondary schools of Nepal. Similarly, the teachers are neither worried to use any local materials in their classroom nor they think of preparing them for their teaching.

The main objective of teaching science is to develop the basic knowledge of scientific concepts, principles and laws, impart the skill of observation and inquiry and develop competence in developing knowledge and skill for the solution of problem in the daily life. In addition to this, general objective of the secondary level science curriculum illustrated that the school level science will bridge the higher-level studies but it's not found as such. Hence, students lose their interests in studying science in the plus two levels because there is not any relevance and conceptuality between these two levels.

Global Context

In the world history of human civilization, science developed from the very beginning. At that, time people used to observe the sky and the objects related with it. Men used to hunt animals and search plants for eating. They were keen to observe and have knowledge from surroundings. If we study the western

civilization of seventeenth century, we can find Aristotle, Galile Galileo and Isaac Newton studying about the principles of physics. The reason of industrial revolution in the eighteenth century is also the development of science and technology. Afterwards, the other countries also followed the same principle and come in this position now.

Nepalese Context

In the context of Nepal, the government has started to teach science in Trichandracollege in 1920. In SLC too, there was a provision of science, subject as extra subject since 1939. Furthermore, in Rana Period the fact Nepalese first scientist GehendraSamsher with other seven peoples got opportunity to go Japan for the provision study of technical education (Sharma, 1993).

Nepal National Educational Planning Commission (NNEPC, 1956) Report: The NESP 2011 disclosed that some students had show to study science annually in the secondary level. However, while recommending it said that a three-year science course was sufficient for each of the students in which the first two years would be the basic science and the last one year would be the advance teaching of the subject. The commission defined class seven to ten as secondary level education. It also advised to conduct short-term training programs, for science teachers, which could be included in the curriculum. In short, the commission did not include science teaching learning programs at large.

This commission recommended that the duration of the secondary level would be seven years. The science would be a compulsory from grade six to eight and it would be a compulsory subject it would regarded as an optional subject in grade nine and ten, according to this commission. It strongly advised to conduct teachers training programs in every subjects including science. It also recommended managing science laboratories in every school so that the teaching of science would be effective. To maintain the training of science, a science lab should open in the college of education. In addition, trained professors should be appointed there. In comparison to NESP, this commission gave more priorities for the development of science education.

National Education System Plan (NESP, 1971-1975): According to this report grade eight, nine and ten regarded as secondary level education. The national goal of education included one of the objectives to develop scientific attitude in every learner. Science made a compulsory subject in general, Sanskrit and vocational secondary schools. It gave more emphasis on the construction of education teaching materials in the local level. Similarly, the ministry of education would produce expensive and high-teaching materials, which the school could not produce. The materials beyond MOE would import from out of the country. It made science laboratory compulsory in every secondary school and in lower secondary level science teaching materials should provide by the concerned authority.

National Education Commission (NEC, 1992) Report: In the document of this commission, the importance of science education and the convenience in action resulted by it has repeatedly mentioned. Similarly, than it has cited in national goal of education itself that one of the goals was to modernize the society and to develop the work force for the overall betterment of the nation. It has defined grade nine and ten as secondary level education. According to this commission, there must be scientific knowledge in society and that science would adjust in every sector of education. Furthermore, Priority should give to the development of science and technology in the country. According to recommendations of this commission, talented students of secondary education, while choosing optional subjects should choose math and science. Similarly, science recommended making compulsory with hundred marks in grade nine and ten in the secondary level. In addition to this science subject combined with environment science of hundred full marks. However, after six years in 2055 next education commission separated the environment from science and included with population. Now, from 2058 science subject is as a compulsory subject in secondary level. In hundred full marks, seventy-five marks is allocated to theoretical and twenty-five marks for practice assessment.

High Level National Education Commission (HLNEC, 1998) Report: One of the national goals of education, according to this commission is to produce such skillful and capable work force in the

field of knowledge, science and technology for the overall development of the country, which in turn help to develop their life-standard. Likewise, it aims to produce skillful citizens who are aware of the conservation of the natural resources and environment. In addition, it aims to produce competitive citizen of international level in the field of science and technology. The commission gave continuity to the previous trend of identifying science as compulsory subject at the secondary level.

To conclude, the documents of every commission have more or less given priority to science. However, no commissions have strongly advocated the optimum development of the one of the deserving subject-science. In this sense, we can conclude that there are many short-comings in the Nepalese education especially science education.

Furthermore, Science Education Project (SEP) was established for the first time in Nepal on Nov. 18, 1982. The aims of the science education project were to improve the quality of school science education through upgrading science teaching skills and science facilities. However, the major achievements of science education project were limited to the establishment of one national Science Education Development Centre (SEDEC) at Sanothimi, Bhaktapur and 25 Science Education Development Units (SEDU) at 25 selected districts throughout the country. The other achievement of SEP was the delivery of science equipment and chemicals to the selected 700 schools and 25 SEDU. SEP also gave opportunities to undergo training to many school personnel's. However, in 1992 SEDEC converted into Secondary Education Development Project (SEDP). The overall objective of the SEDP is to support the HMG's development goals by producing middle level work force for the country as well as the quality inputs for tertiary education by improving the quality and efficiency of secondary education.(Sherstha, 2009).

General objective of secondary school science (CDC, 2008), meaning and importance of scientific and technological literacy (STL) also focused on the development of quality of science education in school level**.** Moreover, under the School Sector Reform Plan (SSRP) 1053 resource centers are conducting teachers training programs based on the needs of teachers. Furthermore, 46 lead resource centers and 29 educational training centers are conducting need based training for lower secondary and secondary teachers in Teachers Professional Development (TPD) mode.

Conclusion

Overall, science is connected with the human progress and daily life. Considering to this fact, government of Nepal has initiated its initial task education commission integrating science subject. Similarly, Curriculum Development Centre has developed science subject curriculum, designed textbook, teachers guided and other audio-video materials. National Centre for Educational Development (NCED) involves in In-service teachers training programs in order to promote science teachers in particular and teachers in general professional knowledge. On the other side, there are university courses through which science candidates receive pre-service training to enhance their sound theoretical knowledge. Concluding to the facts, what can be said is that there are different provisions which are made to enhance quality of science subject and teacher.

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