



Teaching methods of Rabindranath Tagore for science

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Abstract:

Teaching methods develop for enhancing the system of education and educational objectives. These teaching methods developed by many philosophers, educationalist in their own principles and thought. One of them was Gurudeva Rabindranath Tagore, who explore new thought process for different discipline of education system. Science also included there. Principles of science subject majorly based on activity centred, skill development and others also on the analysis of Tagore. Researchers, through this article, wanted to explain a conceptual overview of the science teaching methods by the thought process of Tagore. This study has significant for students, teachers, teacher educators, academic instructors, researchers, curriculum designers, and others.

Keyword: Science teaching methods, Contemporary era, Thought of Tagore.

Introduction:

The Bengal Renaissance introduced the cult of reason, scientific education, and temperament, which led the indigenous elite in British-ruled India to appropriate Western science. Rabindranath had an active part in shaping the language of science and reason in terms of a poet's or philosopher's perspective since he was not oblivious to such discourses. The science means activity and participation, thought of world and application and others by Tagore. In his much later work, *Biswaparichay* (1937), Rabindranath expresses his insistence on the realisation of science in a wider spiritual arena. The idea behind *Biswaparichay* was to promote science to the general public. In Tagore's opinion, science is a complementary pursuit of knowledge rather than a separate discipline from liberal arts and music.

Teaching methods are the overarching pedagogy and principles, management strategies used during classroom instruction. Your preferred method of teaching will depend on your educational philosophy, the

students in the course, the subject(s), and the purpose of your place of learning. According to Tagore, “the science of teaching not only in text book or theoretical, it also in real life situation”(Tagore, 1937).

Review of related Allied Literature:

A review of the research literature is an evaluation of evidence from the literature that is relevant for the selected topic of discussion. The review paper must define, compile, explore and organises the topic of study. This literature should be described, summarised, analysed, and rendered plain in the review.

Get Bengal (2020, December 02) Published a documentary on ‘*Rabindranath Tagore’s ‘Window to Science’*. In this documentary the editor discussed about how Rabindranath Tagore spread the concept science in world with mutual understanding of eminent persons of this entire society. Like Albert Einstein and others also. The editor of this documentary also discussed formal science instruction, concerns concerning notions such as Observables, ‘Wave Particle Duality,’ and so on. Thus, Tagore saw science not as a separate topic from Liberal Arts and Music, but as an integral quest for understanding, Upanishads that emphasise *Aham*– one’s own being and its interaction with its creator. The wonder of existence is defined by the ongoing connection among Yourself and Environment.

Ghose, P (2020, December 24) wrote a book on ‘*The Cambridge Companion to Rabindranath Tagore*’. In this one chapter is *Rabindranath and science*, where the author tried to enlighten what Tagore said to *PraphullachandraRāy* about his chemist laboratory, and scientific research and innovation. The author also describes Tagore's earliest experiences with science methods instruction and how his science tutor would wow him through simple presentations such as making the currents of convection in a warmed pitcher of water apparent by employing microscopic dust. The contrasts rendered apparent among the numerous layers of a seemingly uniform body of liquid astonished him. This was the first time he realised that the things we take for granted are often not. The discovery left him perplexed for the end of the life.

The Statesman (2019, November 07) Published a documentary on ‘Tagore perceived twin role for science and philosophy’. The editor of this documentary discussed how Rabindranath Tagore was science looseness, as in an institution of science, music, literature and creating art, he viewed an identical role for both philosophy and science, consolidated by Tagore’s originality and scientific rage. It is the actual time to implement Tagore’s reasoning in numerous facets of everyday life. The editor of this documentary also described Tagore’s Sriniketan Endeavour, which was intended to examine all possibilities of understanding and action for the boost of rural people through sciences, the study of philosophy, and implementation in Rabindranath’s Sriniketan Endeavour, aesthetics, and the science of musical arts, precisely considered by the Works of Rabindranath Tagore.

Research Objectives:This study objectives are:-

- To identify the role various teaching methods of science on the analysis of Tagore in contemporary era.
- To explore the process for helping out to awaken of knowledge among teachers for science teaching methods by Rabindranath Tagore.

Research Question:This study questions are:-

- What are the various teaching methods of science on the view of Tagore in contemporary era?
- How Rabindranath Tagore helped for awakening of knowledge among people for teachers for science teaching methods?

Research Methodology:

This study was organised by content analysis and Hermeneutics through descriptive approach based on the demand and nature of the study. The population of this study was non-human resource and the sampling techniques was convenient sampling. All non-human resources, with a particular emphasis on Rabindranath Tagore teaching method in science, are regarded as a sample.

Data collection

The current research, qualitative tools and methodologies for data collecting were used. This includes the biography, books, journals, documents, reports, documentary, autobiography, diaries, speeches, and photographs are used as primary sources, while other instruments are used as secondary sources.

Data Assessing and Interpreting

The researchers' initial goals are focused on thought of Rabindranath Tagore's view on human nature and how they learn from their own space and time with social norms, family, friends, and community. Professor H.B Mukherjee stated, "*Without understanding that Rabindranath's starting point was rejecting imprisoning learners within physical walls, defined curricula, or specific specialisations, an infrequent reader may mistake some of Rabindranath's educational practises for those used in mass schooling. His schools had walls (though famously, courses were frequently held outside), and he did not forego curriculum; rather, he insisted on an environment of liberty of selection among nutritious alternatives and employed curricula and one-to-many instructions as useful adjuncts to self-directed learning.*" (2013 p.7). On other context of science teaching methods Tagore highlighted Science was researched and used in collaborative initiatives, imagery and social relationship, overaction natural phenomena, laboratory based, villages for their reconstruction and upliftment, Experimental Education a recent development of the pedagogy of science, critical pedagogy. H.B.Mukherjee also stated, "*The activities related to Science teaching, as recommended by Tagore and largely undertaken in the Santiniketan school from the earliest days, may be listed as follows: observation of the stars and the planets; study of the flora and the fauna in the surrounding area of the institution in minute details; collection of rocks, oyster-shells, plants, and herbs; personal tending of birds, animals, and plants;*

organization of museum and herbarium; undertaking of excursions for Nature study in natural setting, etc.” (Mukherjee 2013, p.429). Tagore also focused on mother tongue. So, he said, “Scientific studies can take root in a country only when they spread among the masses, and ‘to make science accessible to the general populace,’ it is essential to pave the way for the cultivation of science through mother tongue” (2013, p.39). The methodology of Science teaching as recommended by Tagore and largely adopted in his institution laying stress on relating Science teaching to facts of life and Nature, encouraging pupils to find out facts themselves from life and Nature, or to collect objects and specimens and make a record of these findings and collections somewhat on the principle of Armstrong’s Heuristic Method, as also to sketch and draw objects of curiosity in the course of their fact-finding excursions, organizing museums and herbarium as well as exhibitions of specimens collected, and awakening the pupils’ curiosity for factual knowledge and developing their powers of observation, experimentation, and logical reasoning in a general way—are quite in area with the fundamental principles of progressive Science teaching.

In the second objectives the researchers focus on thought of Rabindranath Tagore’s view on science for living being, their group, an appreciation of traditions, faiths, and science from different eras culminates in an endless view of humankind that entails the truth of numerous identities and the constant possibility of evolution and development. On another context, it consists in the realization of man’s bond of union with the universe fundamental kinship with all existence not through the intellect alone, which science makes possible, but through the spirit, through the soul, through the deeper intuition of feeling, students’ elementary instruction in the sciences connected with their practical work to develop skill among them to think and record the knowledge acquired by them for their own benefit and for that of their fellowmen.

Result and Discussion:

On the Enlightened of above objectives, it overserved that Rabindranath Tagore develop a lot of Teaching methods or pedagogy in science and also help to aware teachers how to teach science and which teaching methods in which time for contemporary era. These teaching Methods are:-

- Activity centred or learning by doing
- Self-directed learning
- Learn Science through village reconstruction
- Humanity in Teaching
- Laboratory based
- Life-long learning
- Observation and natural existence for teaching
- Critical pedagogy
- Co-operative teaching method
- Use Bengali for teaching method

Conclusion:

The study was aimed at establishing the usefulness of teaching methods of science at present-day. It established by study that there have a lot methods of science exist in Tagore methodology of teaching through the observation, practical explanation and others. So, it concludes that Rabindranath Tagore pedagogy of science has a direct implication.

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