

**Research Article****AVAILABILITY OF INFRASTRUCTURE SUPPORT FOR SCIENCE EDUCATION AT SECONDARY SCHOOL LEVEL: A SURVEY-BASED STUDY IN SONITPUR DISTRICT OF ASSAM, INDIA*****Dr. A. Annu Devi**

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Abstract

The Objectives of study are to find out availability of Infrastructure and Laboratory support of Science Education at Secondary schools of Sonitpur District of Assam, India. In this study, Descriptive Survey Method was adopted. 45 Secondary Schools were used as sample where Questionnaire, Interview and Observation Method were used as tools for study. The data were analyzed in percentage Method and Bar Diagram. For Infrastructure facilities, 98.7% found Head Master/ Principal rooms, 91.5% Staff rooms, 96.3% office rooms, 84.4% Libraries, 43.9% Gardens, 96.3% Playgrounds, 22.5% General Science Classrooms and 27.2% Teaching learning Materials. Laboratory facilities, 36.8% found Science Laboratories only and 17.7% Science Laboratories with Equipments. Infrastructure and Laboratory facilities need to be improved immediately as science cannot be taught as a theoretical Subject. Liberal Grants should be available to Secondary schools for Science Laboratories and Equipments making a quality Teaching Science in Secondary schools in future.

Keywords: Infrastructure, Science Education, Secondary Schools, Sonitpur District, Assam.

INTRODUCTION

The basic Physical and Organizational Structures and facilities needed for the operation of a School or Institution is called Infrastructure. Education is the most important and powerful Agent to develop a Nation or Country. It provides to the all-round development of a child and aims to develop Physical, Mental, Emotional, Social, Aesthetic, Moral and Spiritual Aspects of a Child's life. It always improves a Positive, Logical, Critical and Rational thinking among Children. Therefore, it always opens the Door to Millions of People to enrich their knowledge to contribute towards National as well as International development. Science and Technology promoting the well-being of humanity through their application in the field of Industry, Communication, Transport, Engineering, Agriculture, and Medicine. Science has made more important than ever before. The Indian Education Commission (1964-66) advocated, "Science is liberating and enriching the mind and enlarging the human spirit. Its fundamental characteristics have turned out to be the possibility of unlimited growth. The National Council of Educational Research and Training (NCERT) stated that the objective of Science Teaching at the Secondary Level is to make Children understand the nature of Science, its processes, Methods and Scope so that they can use the Scientific Method to solve their Problems and develop a Scientific Attitude. Another important objective of Teaching Science is to provide a sound foundation for those seeking to continue the study of Science at higher Level. Science Education is a part of General Education, which makes a man develops his independent thinking and helps in removing Superstitions and prevalent in Society. Phillips (1973) stated that science education or indeed all education must develop in students both an awareness of the problems facing the society and the capacity to contribute towards their solution. Science had been an increasingly important part of General Knowledge.

Effective and stimulating Science Education is a way of better enrichment of Science and pursuing progressive advancement in our Society. Science Education is a way of strengthening the mind set of students and necessary for the present world. Lackney (1999) study found that school buildings were critical to the teaching and learning process. He also took the viewpoint that "the factors responsible for student achievement were ecological they acted together as a whole in shaping the context within which learning took place. The physical setting of school building was an undeniably integral part of the ecological context for learning". Nurbaiti (2015) study found that School facilities and infrastructure is one of the supporting factors in achieving the success of the teaching and learning process in school. And this can be achieved if adequate school facilities and infrastructure are accompanied by optimal management. Alkadri *et al.* (2017) Study found that the role of facilities and infrastructure is very important as a school attraction in the people's eyes. Anang Amiruddin and Udik Budi Wibowo (2019) study found that the development of school infrastructure in improving learning outcomes and their utilization in order to increase the intensity of student learning activeness which include Physical and Psychological involvement. Peter Barrett *et al.* (2019) study found that providing access not only to school places but also to spaces that are safe and healthy positively affects pupils' academic outcomes.

Significance of the study

The 21st Century is the world of Science and Technology and every event happening around us demands knowledge of scientific Facts or Principles without basic knowledge and information about science, we will be at a loss in society. In Sonitpur District, the main occupations of people are farming of tea plantation and most of the Parents belonging to those occupations are unaware about the Education of their children and Environment for Education is missing, it was found that a good number of pupils were working in the field. In this modern age, the majority students do not exhibit any interest in

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science and hence unable to show good performance in science. Therefore, the present study has broadly examined the infrastructure facilities of Science Education in the Sonitpur District of Assam. Apart from these, it also examined the availability of human resources and co-scholastic activities for Science Education and problems of Science Teachers. Further, the present study attempted to fill the gap between the theoretical and practical aspects of science. Therefore, the investigator had chosen "availability of Infrastructure support for Science Education at Secondary School level" as an important area of study.

Delimitation: 45 Science Secondary Schools (15 each of Govt. Assamees medium, Private Assamees and Private English Medium) of Sonitpur District, Assam, India.

Objective: The Objectives of study are to find out Infrastructure and Laboratory facilities of Science Education at Secondary schools of Sonitpur District of Assam, India.

METHODOLOGY

Descriptive Survey Method was adopted. 45 Science Secondary Schools were used as sample where Questionnaire, Interview and Observation Method were used as tools for study. The data were analyzed in percentage Method and Bar Diagram.

RESULTS AND DISCUSSION

Table 1. Infrastructure facilities

Infrastructure facilities	Facility available schools (%)
Headmaster/Headmistress/Principal room	98.7
Staff room	91.5
Office room	96.3
Library	84.4
Garden	43.9
Playground	96.3
General science classroom	22.5
Teaching learning materials	27.2

Table 1 shows that 98.7% schools have Headmaster / Headmistress/ Principal room. Data also shows that 91.5% schools have staff room, 96.3% schools have office room and playground. It shows that only 84.4% schools have library and only 43.9% schools have garden. 22.5% schools have general science classroom and 27.2% schools had used teaching-learning materials (TLM) for science education.

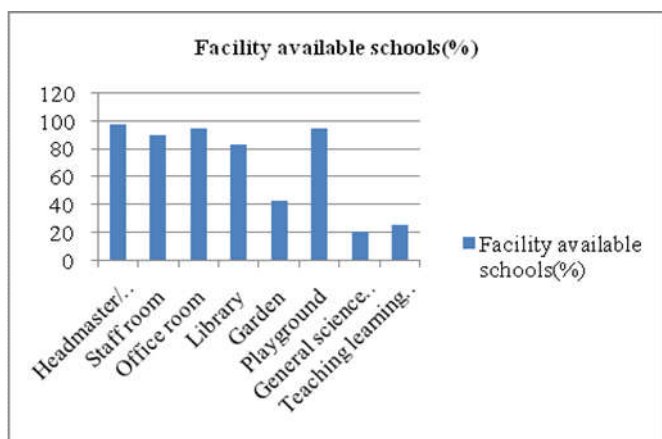


Figure 1. Bar Chart Showing Infrastructure Facilities for Science Education

Table 2. Laboratory facilities

No. of Secondary Schools	Secondary Schools having only Science Lab(%)	Secondary Schools with Science Laboratory and equipments(%)
45	36.8 %	17.7%

Table no. 2 shows that 35.7% Schools having only Science Lab and 16.6% schools having Science Lab and Equipments.

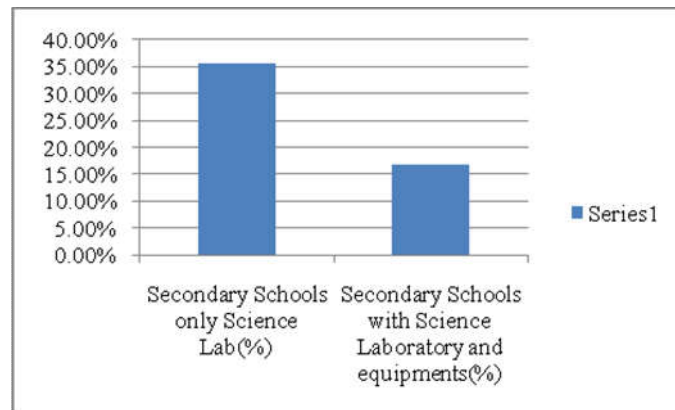


Figure 2. Bar Chart Showing only Science Lab. Schools and Science Lab. Schools with Science Equipment

Suggestions

1. Especially some Infrastructures are urgently required for Science Education hence, the Government should implement the recommendations forwarded by various commissions and Committee for Science Education.
2. The Government should make provision for appointing the Assistants, Demonstrators, and Laboratory attendant at the Secondary School level.
3. Rashtriya Madhyamik Shiksha Abhiyan (RMSA) develops educational programs at the State Level. Therefore, the Government with the help of RMSA should make special Programs for Science Education.
4. Headmaster/ Headmistress, he/she should always be concerned about schools' problems and should take all the responsibilities of the schools.
5. Schools get funds from the Government. However, some schools did not use this fund for School Education. In this regard, the Headmasters/Headmistresses should play a crucial role. It is up to him/ her whether the fund will be used for the development of schools.
6. The Headmaster should notice the activities of all Teachers and should maintain proper attendance Record of Teachers. Special attention should be given to Science Teaching.

Conclusion

Research in Science at the Secondary School level is very limited. Science Education needs to improve to facilitate the development of Human resources as well as Material aspects. As the future of a Country shapes in the classroom, therefore, the quality classroom and its activities should be developed as far as possible. Schools should realize their responsibilities and more focus should be laid on quality Education. This study focus to show different aspects and Problems of Science Education like inadequate infrastructures, insufficient human resources, improper classroom practices of Science Teachers, etc. Imparting Science knowledge to Student is not an easy task which requires efficient, trained, and qualified teachers as well as demonstrators. Unfortunately, demonstrators,

laboratory assistants, and laboratory attendant have not yet been appointed for laboratory purposes at the Secondary school level of Assam. Infrastructure and Laboratory facilities need to be improved immediately as science cannot be taught as a theoretical Subject. Liberal Grants should be available to Secondary schools for Science Laboratories and Equipments making a quality Teaching Science in Secondary schools in future.

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