



Research Paper

## Effectiveness of Science Teachers in Model Schools of Assam

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**ABSTRACT:** The study was conducted to find out the effectiveness of science teachers in secondary model schools of Assam in relation to Preparation and planning for teaching, Classroom management, Knowledge of Subject matter, Teacher Characteristics, Interpersonal relations, Professional Qualification etc. it is also try to find out the effectiveness on science teaching along with job satisfaction of model school science teachers. The descriptive survey method used rot the study and the teacher effectiveness scale of Dr. (Mrs) Umme Kulsum and self-prepared questionear are used as the tool for data collection. Hypothesis are analyzed by using graphical representation, mean, standard deviation, t test etc. and found that teachers of model school are moderately effective. Again the significant difference is found in the teacher effectiveness based on their professional qualification. Regarding job satisfaction and security the teacher feel un-satisfaction and unsecure in their job.

**KEY WORDS:** Effectiveness of teacher, model schools, secondary science teacher, science teaching, job satisfaction and security.

Received 06 June, 2021; Revised: 18 June, 2021; Accepted 20 June, 2021 © The author(s) 2021.  
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### I. INTRODUCTION:

Education is that the most vital lever for social, economic and political transformation. An educated population, equipped with the relevant data, attitudes and skills is important for economic and social development within the ordinal century. Education is that the most potent tool for socio-economic quality and a key instrument for building associate degree evenhanded and simply society. Skills and competencies for economic well-being are the output of education. Education strengthens democracy by transmission to voters the tools required to completely participate within the governance method. Education additionally acts as associate degree integrative force in society, transmission values that foster social cohesion and national identity.

Before 1976, education was the one and solely responsibility of the States. The Constitutional modification of 1976, including education within the synchronal List, was a sweeping step. The substantive, monetary and body implication required a brand new sharing of responsibility between the Union Government and also the States. whereas the role and responsibility of the States in education remained for the most part unchanged, the Union Government accepted a bigger responsibility of reinforcing the national and integrated character of education, maintaining quality and customary including those of the teaching profession in the slightest degree levels, and also the study and observation of the tutorial necessities of the country.

In order to attain UEE (Universalization of instruction, the Government of Asian nation has initiated variety of programmes and comes. The Government adopts associate integrated approach within the implementation of the assorted centrally sponsored schemes, to keep with principles of the National Policy on Education, to confirm that the education of just quality for all too totally harness the nation's human resource potential. The common objectives square measure to boost access through the growth of quality college education; to push equity through the inclusion of underprivileged teams and weaker sections, and to boost the standard of education.

Secondary Education is that the most vital stage within the academic hierarchy because it prepares the scholars for instruction and therefore the world of labor. The policy at the present is to create pedagogy of excellent quality on the market, accessible and cheap to all or any young persons within the cohort of 14-18. At present, the subsequent schemes targeted at secondary stage (i.e. category IX to XII) area unit being enforced within the variety of Centrally Sponsored Schemes.

**A) Model schools:**

*Scheme for putting in place of 6000 Model schools at Block Level:*

The Scheme envisages providing quality education to gifted rural kids through setting up 6000 model schools as benchmark of excellence at block level at the speed of 1 school per block. The theme was launched in 2008-09 and is being enforced from 2009-10.

The objectives of the scheme are:

- i) To have a minimum of one smart quality senior secondary school in each block.
- ii) To have a pace setting role.
- iii) To try innovative programme and pedagogy
- iv) To be a model in infrastructure, curriculum, analysis and college governance.

The theme has 2 modes of implementation, viz.

(i) 3500 model faculties area unit to be created in educationally backward blocks (EBBs) beneath State/UT Governments; and

(ii) The remaining 2500 faculties area unit to be created beneath Public-Private Partnership (PPP) mode within the blocks that don't seem to be educationally backward. Presently, only the component for putting in place of 3500 model faculties in EBBS beneath State/UT Governments is operational. The part for putting in place of 2500 model faculties under surgical operation mode are operational in twelfth 5 Year arrange

*Scheme in Assam: Key features*

1. National Level Standard of Infrastructure facility.
2. Classes from I to XII in CBSE Curriculum with local adaptability and regional focus
3. Medium of instruction: English along with Spoken English (Assamese is also a compulsory subject)
4. Co- educational learning environment.
5. Well trained, smart ,dedicated fun time teaching and non- teaching Staff
6. Student friendly classroom facility with activity based teaching learning.
7. Individual care of Student for all-round development.
8. Special emphasis and support to CWSN and Slow learner students including bridge course/ remedial coaching.
9. Mid-Day Meal, free textbooks and Free uniform facility.
10. ICT and Smart Class Room facility with connectivity and proper reading materials.
11. A fully equipped computer laboratory in thin client with a server.
12. Well-equipped science Laboratory facility with required chemicals and equipment.
13. Well prepared Library facility.
14. External Project or CSR initiative like ITE under TATA Trust etc.
15. Yoga and co-curricular activities under Saptadhara and other schemes implemented by Government from time to time.
16. Special emphasis is given on teaching of Science, Mathematics and English. TLM like science kits for Chemistry, Physics. Biology and Mathematics are also available.
17. The Teacher Pupil Ratio should not exceed 1:40 and the classrooms are spacious enough to accommodate at least 40 students. However, classroom-students ratio will not exceed 1:40.
18. These schools will also create facility for activities emphasizing Indian Heritage and Art & Crafts.
19. The school curriculum include the material / items that inculcate leadership qualities, team spirit, participation abilities, of soft skills, national character building and ability to deal with real situation.
20. Health and Hygiene Education and health check up on regular basis.
21. Field trips and educational tours will be an integral part of the curriculum.
22. Adarsha Vidyalayas will have appropriate pace setting activities
23. So that schools in the neighborhood be benefited.

**Model schools in Assam:**

Under this scheme 20 schools are in operation and 05 new are targeted to start from new academic session.

**B) Secondary Science Teacher Effectiveness**

Competent employees and citizen, in turn, would like a sound understanding of science and mathematics; elementary and secondary student's area unit answerable for guaranteeing that they acquire this data. In recent years, one among the foremost necessary goals of academics' education is to arrange "effective" teachers, who are a unit ready to facilitate learning for all students. According to the students the effective teachers ought to have scientific knowledge and pedagogy as well as data of students' talents. Students feels that teachers should have the data and skills in specific problems associated with the science subject. The effective science teachers ought to have elaborate data concerning the topic. The qualified science teachers' knowledge to elucidate and teach the topic. Atilla (2007) argues that having science teachers who grasp their content helps promote scientific attainment Associate in Nursingd foster an understanding and appreciation of science among students of all ages.

**I) NEED OF THE STUDY:**

The future of these Model schools depends upon the role of teachers and their effectiveness on teaching. Another important area of knowledge of science teachers is to identify their students' abilities and interests, which could help the students in learning the difficult scientific concepts and make science a more fascinating subject (not so boring). Again an effective science teacher model schools should consider other subjects in the curriculum when giving assignments.

**II) OBJECTIVE OF THE STUDY:**

- 1) To find out the effectiveness of Model school science teachers of Assam
- 2) To find out the effectiveness on science among secondary science teachers of model schools in Assam.
- 3) To find out the effectiveness of model School secondary teachers based on their professional qualification.
- 4) To find out the job satisfaction and security of teachers in model schools .

**IV) HYPOTHESIS:**

- 1) The teacher effectiveness of science teachers will differ significantly based on classroom management and knowledge of subject matter.
- 2) There will be 100% effectiveness on science among secondary science teachers of model schools in Assam
- 3) There will be no significant difference in teacher effectiveness based on their professional qualification.
- 4) There will be full satisfaction and secure in their job.

**V) METHOD OF THE STUDY:**

Descriptive survey method is adopted for the study.

**VII) POPULATION AND SAMPLE**

The population include 14 no of model school that have secondary sections in Assam and 46 secondary science teachers were selected as the sample of the study.

**VIII) TOOL**

A standardized tool constructed by Dr. (Mrs.) Umme Kulsum was used for the present study. Five areas of teacher effectiveness are identified by Umme Kulsum : the way of preparing and plans for teaching, way of classroom management, subject knowledge , characteristics of teacher and their interpersonal relations. It contains 60 items. Along with this another questionnaires also used for data collection .

**IX) MODE OF DATA ANALYSIS**

For hypothesis testing, data analysis were made employing descriptive statistics such as Graphical Representation, Mean, Standard Deviation and inferential statistics such as Test of significance difference between two group Means (t-test).

**X) RESULT AND INTERPRETATION**

The result are shown and interpreted according to the objectives framed:

**Objective No.1: To find out the effectiveness of Model school science teachers of Assam.**

The effectiveness of model school science teachers calculated by converting raw score of Teacher Effectiveness Scale (TES) to z-score according to the norms given in the manual of the scale. The Z-score obtained after conversion can be used to determine the level of effectiveness of the teachers. The number of teachers in different levels of effectiveness is shown in the Table below:

**Table 1.1: Effectiveness of Model School Science Teachers in Assam.**

SL. NO	RANGE OF SCORES	z	LEVEL	N	%	MEAN
1	+2.01 and above		Most Teacher Effective	13	28.26	435.9
2	+1.26 to +2.00	to	Highly Effective Teacher	11	23.91	407.45
3	+0.51 to +1.25	to	Above Effective Teacher Average	9	19.57	385.67
4	-0.50 to +0.50	to	Moderately Effective Teacher	6	13.04	348.17

5	-0.51 to -1.25	Below Effective Teacher	Average	3	6.52	286
6	-1.26 to -2.00	Highly Ineffective Teacher		2	4.35	270.5
7	-2.01 below	and Most Ineffective Teacher		2	4.35	247.5
			<b>Total</b>	<b>46</b>	<b>100</b>	<b>340.17</b>

From Table 1.1 we can analyzed that the effectiveness of majority the teachers fall under Most Effective Level. Out 46 respondents, 13 (28.26%) fall under the level of Most Effective with a mean score of 435.9. Again 11 respondents (23.91%) fall under the level of Highly Effective Teacher with a mean score of 407.45. The table also shows that 9 respondents (19.57 %) fall under the level of Above Average with a mean score of 385,67 and 6 respondents (13.04%) fall under Moderately Effective with mean score of 348.17. The table also reveals that 3 respondents (6.52 %) fall under the level of Below Average with a mean score of 286 and 2 respondents (4.35%) fall under Highly Ineffective with mean score of 270.5 while 2 respondents (4.35%) fall under Most Ineffective Teacher with a mean of 214.8. The Mean of the scores of the all the 46 respondents is 340.17 which falls under Moderately Effective level.

**Discussion:**

It has been found that the average score of the respondents falls under Moderately Effective Level of Effectiveness which shows that there is still room for improvement for the teachers at the secondary level. However, the study also revealed that majority of the respondents comprising 37.10% of the total sample fall under Highly Effective level which gives a very positive picture of the scenario of the secondary school education system in which majority of its teacher execute their work in the most effective manner.

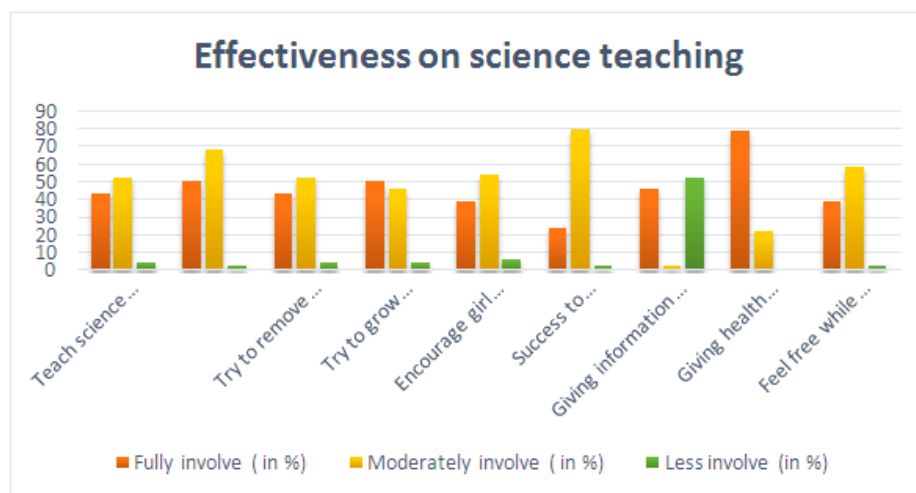
**Objective No 2. To find out the effectiveness on science among secondary science teachers of model schools in Assam.**

For a science teacher it is very important to use science in their daily life. It is their duty to remove science fear from the students and scientific attitude among students specially girls. Again the POCSO Law is very important to know by the adults and teenager students which can be informed and give proper knowledge about the law by the science teacher. Sometimes it is seen that the teacher are hesitate to discuss the sex related chapters with the students freely, but it is not the role of science teacher. He or she should have full concept on the sex related chapters and should discuss with the students freely.

**Table 2.1 Effectiveness on science among secondary science teachers**

Area	Fully involve ( in %)	Moderately involve ( in %)	Less involve (in %)
Teach science relating with daily activities	43.5	52.2	4.3
Personally use science	50	67.6	2.2
Try to remove science fear from students	43.5	52.1	4.3
Try to grow scientific attitude among students	50	45.6	4.3
Encourage girl students to study science	39.1	54.3	6.5
Success to motivate students to select science stream	23.9	79.9	2.2
Giving information about POCSO to students	45.7	2.2	52.1
Giving health related awareness to students	78.3	21.7	0
Feel free while discussing sex related chapters	39.1	58.6	2.2

**Table 2.2 Graphical representation of above data are given below:**



**Discussion:**

- 1) Teach science relating with daily activities: 43.5 % fully involve, 52.2% moderately involve and 4.3% are not involved in the tusk
- 2) Personally use science: 50% science teacher use science personally in their daily life. 2.2% never used and 67.6% respond as moderately used science.
- 3) Try to remove science fear from students: 43.5 % of science teacher respond as yes they have try and become success , 4.3% respond as no and 52.1 % respond as they are trying.
- 4) Try to grow scientific attitude among students: 50 % of science
- 5) Encourage girl students to study science: 39.1 % of science teacher always encourages girl students to study science, 54.3 % of teacher sometime deal with the girls and 6.5 % never encourage.
- 6) Success to motivate students to select science stream: 23.9 % of teacher are getting success to motivate the students to select science stream, 2.2 % don't try to motivate and 79.9 % are trying to motivate the students.
- 7) Giving information about POCSO: 45.7% of science teacher give information about POCSO to the students, 52.1 don't.
- 8) Giving health related awareness: 78.3% teachers always giving health related awareness to the students and 21.7 % are sometimes do.
- 9) Feel free while discussing sex related chapters: 39.1% of science teacher feel free to discuss the sex related chapters of science with the students and 2.2% are totally not. Again 58.6 % are discussed in the class but with hesitation,

**Objective 3) To find out the effectiveness of model School secondary teachers based on their professional qualification.**

The difference in teacher effectiveness between post graduate with professional qualification like B.Ed, M.Ed along with only post graduate teachers was compared. For this, the mean and Standard Deviations of the two scores were calculated. The mean differences were tested by applying “t”test and the details are presented in Table 3

**Table 3.1 Differences in Teacher Effectiveness Based on Professional Qualification**

Professional qualification	Number of teachers	Mean	SD	't' Value	Significance Level
Post Graduate with B.Ed / M.Ed	33	408.27	29.55	5.52	Significant
Post Graduate	13	317.7	56.22		

Table 3.1 reveals that the difference in effectiveness of model school science teachers on the basis of their professional qualification is shown in Table 3. There is the significant difference has been found in the teacher effectiveness of post graduate with professional qualification like B.Ed, M.Ed along with only post graduate teachers in Assam. Thus the hypothesis that “there is no significant difference in teacher effectiveness based on their professional qualification” is rejected.

**Discussion:**

The quality of the teacher in his/ her profession is often measured by the degrees and certificates earned during Graduation or Post Graduation courses. However, teacher efficacy involves not only his/her educational qualification but also involves many other factors such as experience, formal education, professional development, pedagogical preparation, year of training, commitment and dedication. Just because someone attains some higher educational qualification does not mean they are automatically better teachers. This may be the plausible reason why the present study found that there is no significant difference in the effectiveness between post-graduate and graduate teachers.

**Objective 4.To find out the job satisfaction and security of teachers in model schools.**

Job satisfaction and security are the factors that will ensure class performance and productivity of schools. The teachers would get interested to teach their students effectively when they are satisfied with their jobs and feel secure. Like India, other countries in the world are trying to improve their quality of education, so that it meets the demand of globalization. Teachers would perform to maximum capacity, only if they are satisfied and be secure with their jobs. So, job satisfaction and security are important phenomena in every sector especially in the teaching profession.

**Table 4.1 Job satisfaction and security of teachers**

Area	Fully	Moderately	Less
Satisfied with job	34.80%	4.30%	60.90%
Fully secure in job	8.70%	63.20%	28.10%

**4.2 Graphical Representation of above table is given below:**

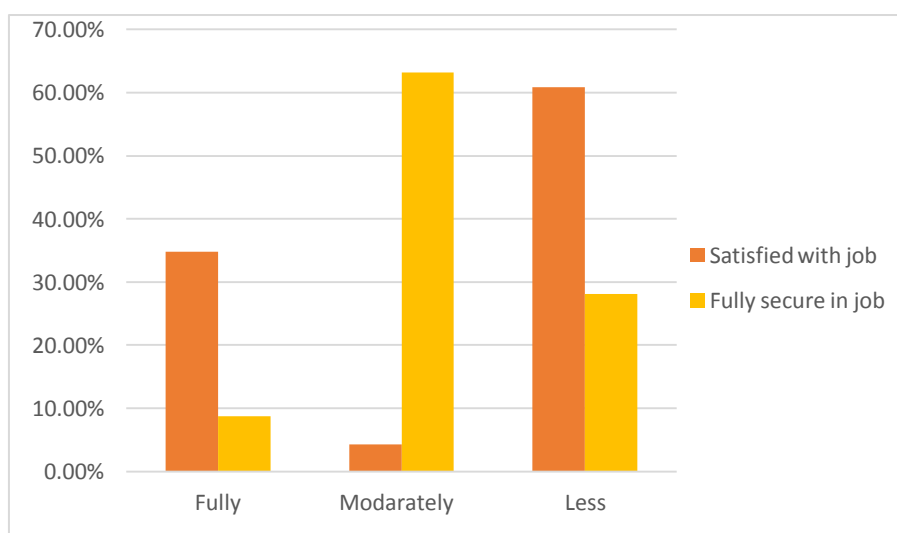


Table 4.1 reveals that only 34.8 % of model school science teacher are satisfied with their job ,4.30 % are moderately satisfied and other 60.9 % are unsatisfied with their job . Again only 8.7% are feels that they are

secure in their job and 28.1% are feels that they are not secure. The other 63.2% of teacher give their comments as they are have to do their duty but are not fully secure.

### **Discussion**

The un-satisfaction and un-security of teachers effects on their performance to give full attention towards teaching and they become moderately effective teacher.

## **II. CONCLUSION**

The result of the study concluded that majority of the model school science teachers fall under Most Effective Level in their teaching while the overall score also shows the average score of the teachers fall under Moderately Effective Level which indicates that model school science teachers of the state has a moderately effective group of teachers at the secondary level. Effective science education can be achieved through the efforts of well qualified, competent and effective science teachers. In order to realize the objectives of Universalization of Elementary and Secondary education, the Indian education system is highly dependent on its teachers – their commitment and dedication and above all, their competency and effectiveness. Understanding the importance of efficient teachers in maintaining quality in education and improving the achievement of the students, it is the duty of all stakeholders to show more concern towards the effectiveness of the teachers in schools and also in maintaining this efficiency through various professional development programmes along with their job security.

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