

Effective Teaching in Science at Higher Secondary Levels

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Abstract: Education is one of the most powerful tools which may be used to change the world. It involves the interplay of the teacher, taught and the social forces to make an individual socially adjustable and responsible. Science teacher's acquires great skills about the content knowledge and pedagogical knowledge. However the science teacher acquires the various learning strategies. All the teachers are examined the perception of students towards the teaching of science at higher secondary level.

Keywords: Higher secondary level, teaching, learning science.

1. Introduction

In the fast changing world of the early 21st century, higher secondary education is also changing; the roles of teachers are also changing with more challenges. New social challenges and demands towards education and teachers change schools into institutions with modern aims and social contracts. The characteristic features of 'ideal' teachers are to fulfill their professional aims and needs for the future of nation.

Competence and professional skills are the very heart of the teacher's profession [1]. Educationists and social planners are now thinking seriously on the shape of society, education as well as role and responsibilities of teachers in future India. The future society in India will be different from the present society in many respects [2]. The role of the teacher will have to be shaped in the light of changing demands on the society. Teaching of science is essential for developing scientific attitudes [3].

2. Basic principles of effective teaching methods

Primarily interact with students and acquire existing ideas and concepts. This will help to construct their own understanding and knowledge of the students.

This requires teachers to help student activity and motivate their existing ideas and conceptions, and encourage the scientifically accepted knowledge, modify, change or develop them further.

For this purpose, such teaching methods and activities as question & answer, discussions small group or whole class, small group activities, practical work, and using ICT facilities can be employed.

Further, encourage the students to innovate new concepts in different fields. Further, the teachers can use practical

techniques, field trips, simulations, writing activities and role-play.

The effective teacher may encourage the student and make involvement to participate in the lessons.

This wide range of teaching and learning activities shows inquiry-based teaching, co-operative learning groups, questioning, and discussions and so on.

Encouraging student inquiry, encouraging co-operative learning among students and offering continuous assessment and providing feedback are other principles identified from the literature.

The research work discusses how these principles contribute to effective teaching in science in detail. Finally, the importance of presenting research findings for reform attempts to improve the quality of teaching and learning in the schools are discussed.

3. Significance of effective science teacher

Effective science teacher took certain personal responsibility for students learning, determines the difficulty of lesson with the ability of the student, give the opportunities to students to practice newly learned concepts, provide direction and control of learning, use a variety of instructional, verbal methodology and visual aids, present material in small steps, initiate classroom dialogues, encouraging independent thinking, problem solving and decision making and provide methods of learning with mental strategies for organizing and learning the content being taught.

In this way effective teacher one who has clear concept of the subject matter, ability to write clear objectives for his/her course, ability to organize learning materials, ability to communicate his/her knowledge to the students successfully and deal with classroom situations.

4. Major findings of the study

When compared to rural teachers, the urban school teachers are more effective in their teaching skills. The urban students had a great exposure from the society. Also, when compared to secondary school teachers, the higher secondary school teachers are more effective in their teaching ability. The science teachers are more effective teaching than arts teachers. The age, gender and experiences do not consider the teaching and

learning science, but knowledge of teacher and preparation for class lecture and other activities can give the interest in science class. New teaching technology with computer application facilitated to science teacher enhances the teaching efficiency and acquires great teaching ideas in the classroom.

5. Conclusion

The research findings examined that the nonexistence of classroom spaced in the school, given time to the teaching of science teachers with updated technology, systematic libraries and computer facilities, enhances the teaching performance. Teachers should also encourage students to apply their newly

acquired knowledge and skills to different contexts. The teaching in science also puts a great pleasure on student participation in the learning process. Effective teaching in science also emphasizes the importance of continuous assessment of students understanding and providing detailed performance feedback in terms of improving students' understanding and learning.

References

- [1] Chayya, M. P, Effective teacher: Effective strategies of teaching. New Delhi, Alpha Publications. (2001).
- [2] Joyce. B, Models of teaching, Prentice Hall, U.S.A, (1972).
- [3] Shashi Prabha Sharma Teacher Education: Principles, Theories & Practices. New Delhi, Kanishka Publishers, (2003).