EVALUATION THE TEACHING OF THERMAL ENGINE THROUGH INNOVATION AND TRADITIONAL LEARNING PERSPECTIVE OF ACADEMIC ACHIEVEMENT OF STUDENTS

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Abstract
Basically teaching must include two major components sending and receiving information. Ultimately, a teacher tries his best to impart knowledge as the way he understood it. So, any communication methods that serve this purpose without destroying the objective could be considered as innovative methods of teaching. The use of innovative methods in educational institutions has the potential not only to improve education, but also to empower people, strengthen governance and galvanize the effort to achieve the human development goal for the country. This study attempts to examine the current methods of teaching science in schools and provide alternative, innovative approaches for teaching science in schools. This research looks at how the current techniques of teaching science, mainly blackboard teaching and digital simulation classes are being used in teaching which does not cater to the basis essence of science learning that is understanding the process of science through experiences. Although, the traditional techniques of teaching are proven and effective in most scenarios so far, but the researcher believes that the study of science can be made more interesting for the students and thus help in their better understanding of science. So the researcher suggests various methods that can be more attractive, interesting and thus gain attention of the students and help create better scientific environment in schools. The innovative methods are interesting and involve active participation of the students in the process of understanding science. The purpose of this paper is to evaluate the traditional methods of teaching as well as innovation teaching and to suggest other useful teaching methods that can be attempted in imparting knowledge to the students.

Key words
Innovation method, traditional method, heat engine, evaluation, academic achievement

I. Introduction

The quality of education of 10+2 physics subjects in higher secondary classes has become a matter of concern in today's perception because the severity of the subject has been found to be different in the method adopted in the teaching. The students do not have the right knowledge of the subject. In order to insure equality and quality in the field of education in National Education Policy1986, the determination of minimum education at each level in the school has been considered extremely important and it is emphasized to make every effort to achieve it. Tradition methods of education of the higher secondary level can understand the knowledge of student and reach personality level at the level of personality. In this method the main task of the teacher is to complete prescheduled training in a specific period. Which w can call upon impose. So in the research presented an attempt has been made to select the appropriate method for physics subject, the educational achievement of the students can be easily obtained. Physics subject have been taken in class 11^{th} at the higher secondary level in the research. Thermal engines are the main point of physics.

II. Innovation method

Innovative teaching is necessary for the present and future of education to help students to reach their full potential. Higher education should serve the long term intellectual needs of the student, for example, whether providing new material by teachers helped the student to gain new insights or opened up new channels of intellectual stimulation or enhanced student's essential and creative thinking power? Innovative teaching is a necessity for all teachers in order to meet the educational needs of the new generations. However, teacher's competency for innovative teaching is a key factor influencing innovative teaching performance. Some research points out that many teachers lack competencies for innovative teaching. In innovative teaching students are engaged in a wide variety of innovation, high-impact educational experiences.

III. Traditional method

The back-to-basics traditional education method, also known as conventional education, is still widely used in school. The old-fashioned way of teaching was all about recitation, for example students would sit in silence, while one student after another would take it in turns to recite the lesson, until each one had been called upon. The teacher would listen to each student's recitation, and they were expected to study and memories the assignments. At the end of the module a written test or oral

examination would be conducted; this process was called an Assignment Study Recitation Test. The way in which traditional methods were taught ensured that students were rewarded for their efforts, used class periods efficiently and exercised clear rules to manage students' behavior.

IV. Evaluation

Educational evaluation is the continuous inspection of all available information concerning the student, teacher, educational programmed and the teaching-learning process to ascertain the degree of change in students and form valid judgment about the students and the effectiveness of programmed. Value judgment on an observation, performance test or and data whether directly measured or inferred is called evaluation. Evaluation is a process that includes measurement and possibly testing but it also contains the notion of value judgment. So we can say, evaluation is concerned with making judgments about things. When we act as evaluators, we attribute 'value' or 'worth to behavior, objects and processes.

V. Delimitation of research problem

The extant of the expansion of a work depends on the timing and available means for completing it. Information related to problems of students is not possible in such a short time by getting students from all the subjects of Madhya Pradesh related to students and teachers. Therefore, given the severity of the subject's generality the research work has been limited as follows.

- The research work has been done in government and non government higher secondary schools located in the border of Jabalpur district.
- For the research work, students of class 11^{th} student have been taken on the basis of the sample.
- For research work, all the heat engines related to thermal engines have been selected under physics subject in the 11^{th} class.

VI. Hypothesis

There are three hypotheses which help me to find out academic achievement of students.

1. There is no meaningful difference in the academic achievement of the pre and post testing students in the students studying in the Government school.
2. There is no meaningful difference in the academic achievement of the pre and post testing students in the students studying in the Non Government schools.
3. There is no meaningful difference in the academic achievement of the pre and post testing students in the students studying in the Government and Non Government schools.

VII. Research method

Experimental method has been selected for the research problem experimental method is very practical in terms of meaning and utility because it is done in the study under controlled circumstances. In the experimental method the effects of dependent variables are studied. In this research the innovation teaching method group is a experimental group and the group of traditional learning method is a controlled group. As education is important for students by using various new techniques and new mediums in innovation, that can be possible through experiments.

Sample

In the research presented random method has been used to select the candidate in which class 11^{th} students of the higher secondary category were selected.

Sample table

Group	Girls	Boys	Total
Government School	80	80	160
Non government School	80	80	160
Total	160	160	320

Tools

Required and rational representations are needed to test the hypothesis related to research problem. The tools the researcher uses to compile the desired offering are called tools of research. The student questionnaire was used in this research, which has a group of questions, which the help of which the academic achievement of the students is ascertained.

VIII. Evaluation of hypothesis

1.1 Hypothesis no. 1

Comparative results of pre -test and post- test achievement results of students studying in government schools.

Achievement Test	numbers	mean	S.D.	Standard error	C.R.	significance
Pre test	160	66.75	9.65	1.03	11.60	>0.01
Post test	160	78.75	9.60			

1.2 Authentication
From the table no. 1 it is clear that the value of the revolutionary ratio is 11.6 which are higher than the minimum set value 1.97 and 2.59 trust. Therefore, meaningful difference in the academic achievement of pre and post test students in government school is.
1.3 Verification
This hypothesis is not verified.

2.1 Hypothesis no. 2
Comparative results of pre -test and post- test achievement results of students studying in Non Government schools.

Achievement Test	Numbers	Mean	S.D.	Standard Error	C.R	Significance
Pre test	160	67.75	10.27	1.13	7	>0.01
Post test	160	75.63	10.41			

2.2 Authentication
From the table no. 2 it is clear that the value of the revolutionary ratio is 7 which is higher than the minimum set value 1.97 and 2.59 trust. Therefore, meaningful difference in the academic achievement of pre and post test students in Non Government schools is.
2.3 Verification
This hypothesis is not verified.

3.1 Hypothesis no. 3
Comparative results of pre -test and post- test achievement results of students studying in Government and Non-Government schools.

Achievement Test	Numbers	Mean	S.D.	Standard Error	C.R.	Significance
Pre test	320	134.50	19.90	1.56	12.7	>0.01
Post test	320	154.40	20.00			

3.2 Authentication
From the table no. 3 it is clear that the value of the revolutionary ratio is 12.7 which is higher than the minimum set value 1.96 and 2.58 trust. Therefore, meaningful difference in the academic achievement of pre and post test students in Government and Non Government schools is.
3.3 Verification
This hypothesis is not verified.

IX. Conclusion

Verification of hypothesis by the researcher is done on the basis of the critical proportion of the statistics used and the following findings have been extracted on their basis. If the students studying in the Government school are studying heat engine by the innovation method, then the achievement of learning in the thermal engine will be high in the students. The effect of the innovation method is more than Traditional method for the teaching of thermal engine for students studying in Non Government

schools. Innovation teaching method is more effective for the learning of heat engines is students studying in Non Government schools. The use of innovation teaching method has a positive effect on the academic achievement of students rather than relatively traditional teaching method. This research makes it clear that interest in the study of students in the thermal engine has increased. All null hypothesis have been rejected, it is a proof that innovation teaching method has a positive impact on the learning level of the students.

Acknowledgment

The authors are grateful to Principal of St. Aloysius College, Jabalpur Rev. Fr. Valan Arasu and Head, Department of Education, Jabalpur to providing facilities.

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