

Impact of Inquiry Based Training Model for Teaching Education Subject on Higher Secondary School Students

Kundu, Kakali¹ & Sarkar, Debabrata²

¹Research Scholar, School of Education, Adamas University, Kolkata, India

²Assistant Professor, School of Education, Adamas University, Kolkata, India

Abstract

Richard Suchman developed ‘Inquiry Based Training Model (IBTM)’, aiming to develop the cognitive skills of students. This approach was developed to learning driven by actively posing questions and investigating problems. Current research inspects the Impact of Inquiry Based Training Model for Teaching the Education Subject for grade eleven (11) students. The study also conducts a comparative analysis between the traditional teaching method and Inquiry Based Training model. A quasi-experimental Pre-test and post-test design was adopted. For the purpose of the study, purposively, ninety (90) class 11 students were selected as the sample of this study. Selected subjects were equally divided into two groups (control and experimental groups). Traditional instruction was exposed for Control group and experimental group were exposed Inquiry Based Training Model (IBTM). Results revealed that Inquiry Based Training Model improved the academic performance. The study recommends that the inclusion of Inquiry Based Training Model (IBTM) into education subjects and for implementation of teacher training courses are very impactful.

Keywords: Inquiry Based Training Model (IBTM), traditional teaching method, academic achievement.

Introduction

Education is a peculiar attribute that distinguishes an individual from other species. Base on broad wisdom and knowledge, almost every nation wishes to fabricate its educational setup. It is

important to implement an adequate curriculum transaction in order to make an education system effective and comprehensive. It explicitly needs a plan that would shift the teacher's position from an active speaker to a facilitator. Three major parameters are based around all teaching procedures: the students, the educator, and the subject. Out of these three, the educator is a source of communication with the other two. A contemporary educator should foster creativity, innovation, curiosity, and the ability to discover novel ways to approach challenges in their pupils. In classroom practices, learning through memorization is popular because students have not been actively engaged in classroom activities (Mazur, 1997). Teachers at all levels aspire to satisfy the needs of our society and the country and are trained to teach effectively and scientifically. For this reason, effective pedagogical teaching and learning activities need to be designed with the needs of children in mind (Rao, 2004). Inquiry Based Model is a pedagogical approach that offers students to explore academic content by affectation, investigating and answering various questions. Richard Suchman developed the Inquiry Training Model in 1962 for developing scientific inquiry training skills in learners. This model was developed to assist students in learning to organize data, investigate facts, cause and effect relationships, construct and test hypotheses, and to become self-regulating learners. According to Suchman (1962), Inquiry is the active pursuit of meaning, comprising mental processes that transform experience into knowledge fragments.

Inquiry Model has five steps:

1. Identifying and presenting the problem that needs to be solved
2. Developing hypothesis
3. Data collection
4. Data evaluation
5. Concluding and generalizing

Objective:

- To see the impact of Inquiry Based Training Model for teaching education in terms of students' achievement.

- To compare Traditional Teaching Method and Inquiry Based Training Model.
- To compare between Inquiry Based Training Model and Tradition Teaching in Urban areas.
- To compare between Inquiry Based Training Model and Tradition Teaching in rural areas.

Hypothesis of the study:

1. It was predicted that there would be no significant difference in pre and post-test of experimental groups.
2. It was hypothesised that there would be no significant change in the post-test of control and experimental groups.
3. It was assumed that there are no significant differences between Inquiry Based Training Model and Traditional Teaching in urban areas.
4. It was predicted that there would be no significant differences between Inquiry Based Training Model and Traditional Teaching in rural areas.

Research Methodology

This study is an experimental study by nature. Quasi-experimental method was used to see the impact of the Inquiry based Training Model for teaching education subject for eleven standard students. Traditional teaching methods were exposed to Control group students and the Inquiry Based Training Model was exposed to the experimental group. Participants were randomly allotted to either experimental group (exposed to IBTM) or control group (traditional lecture method).

Sampling: For the purpose of the study 90 (ninety) class 11 students were selected from three (3) government undertaken schools from North 24 Parganas district, West Bengal. Where 30 students were selected from each school who has opted education subject as one of the elective subjects.

Tools Used

1. Researchers were prepared Lesson plan based on Inquiry Based Training Model.
2. To test the Achievement in education subject, 20 MCQ-type questions (each carrying 1 mark) were prepared. Using this Pre and Post-test scores were collected.

Data Collection:

Before the experiment, a test was conducted (pre-test) for both experimental group and control group. After that, through traditional teaching methods Control group students were imparted and Inquiry Based Training Model was exposed to experimental group. After immediate completion of the experimental process post-test was set for the both groups.

Statistical Techniques used

Descriptive statistics were applied to analyse the collected data (mean, standard deviation (S.D.), and t-test).

Data Analysis and Interpretation

Table 1: Inquiry Based Training Model effectiveness on Achievement in Education

Group	Test	N	Mean	SD	t-value
Experimental Group	Pre Test	45	27.33	3.9	16.74**
	Post-Test	45	13.77	3.8	

Df=88

Table 1 shows the pre and post-test means, SD, and t test score of experimental groups. The scores are 27.33 and 13.77, and lastly t-value is 16.74, where the table value at 0.05 level is 1.99 and calculated t test value is more than the table value. Consequently, the hypothesis stating, “There is no significant difference in the mean pre-test and post-test scores of the experimental group,” is rejected. So, it is showing that the experimental group has a positive impact due to Inquiry Based Training Model for achievement in education.

Table 2: Descriptive analysis of Inquiry Based Training Model and Traditional Teaching according to Control and Experimental group

		N	Mean	SD	t-value
Control Group	Post-test	45	13.03	3.15	3.29

Experimental Group	Post-test	45	15.45	3.81	
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Table 2. df=88

Table 2, shows the comparison between experimental and control group post test scores. The analysis shows that the obtain t -value is 3.29, the table value at 0.05 level is 1.99, so calculated t-test value is more than the table value. Therefore, the hypothesis is rejected, indicating that teaching through inquiry-based training model achieves better academic performance than control group.

Table 3: Descriptive analysis of Inquiry Based Training Model and Traditional Teaching in Urban Area

		N	Mean	SD	t- value
Controlled Group	Post test	25	13.0	3.5	2.19
Experimental Group	Post test	25	15.2	3.6	

Table 3. df=48

Table 3 descriptive analysis of Inquiry Based Training Model and Traditional Teaching in Urban Area. The analysis demonstrates that obtained t-value is 2.19 at the 0.05 level and it is greater than the table value. So, it is clearly visible that difference between the two groups is statistically significant. This suggests that experimental treatment (IBTM) is effective than the traditional teaching in the urban area.

Table 4: Descriptive analysis of Inquiry Based Training Model and Traditional Teaching in Rural Area

		N	Mean	SD	t- value
Control Group	Post-test	20	13.5	3.6	2.42
Experimental Group	Post-test	20	16.2	3.8	

Above table shows Comparison among Inquiry Based Training Model and Traditional Teaching in rural area. Result found that obtained t value is 2.42 at the 0.05 level, which is greater than the table value. So, it shows statistically significant difference between the two groups, and suggests experimental treatment (IBTM) is more effective than traditional teaching in the rural area.

Findings of the study

So, after a thorough examination and interpretation of the gathered data it can be concluded that:

- Inquiry Based Training Model has a significant influence on students' academic performance.
- Average post-test results for experimental group, which was taught using the Inquiry Based Training Model of Teaching, were substantially different from the control group. In comparison to the control group, experimental group performed better than control group.
- Finding also shows that experimental group had substantially different mean post-test scores from the control group. So, its suggesting experimental group performed better compare to control group in urban area.
- Inquiry Based Training Model group (experimental group) had better post-test mean score than control group. So, this suggests performance of experimental group is better than control group in rural area.

Conclusion

Education is an important & interdisciplinary subject for higher secondary school students. The study shows that if this subject is taught using the Inquiry Based Training Model, then the result may be more effective than traditional teaching methods. Student centric instructional plan implemented through planned, guided and open inquiry stages can make more interesting subject like education. Modern teachers should encourage students to be creative, innovative thinking, and create a research-oriented environment. For adaptation to this evolution, teachers should go through various seminars, conferences and orientation programs due focused on Proper teachers

training is required on the Inquiry Based Training Model is vital to popularize and improve their effectiveness.

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Received: Apr 06, 2026

Accepted: Jun 09, 2026

Published: Jul 05, 2026

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