

# EFFECTIVENESS OF INFUSION APPROACH IN AUGMENTING PROBLEM SOLVING SKILL OF LANGUAGE STUDENTS

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## Abstract

Promotion of Problem Solving skills in the classroom is a great challenge for an educator. Usually educators try different strategies to enhance Problem Solving skills among which Infusion approach was found of great influence which involves the incorporation of thinking skills into of the instructional process. In this study the investigator tried to test the efficacy of infusion in augmenting Problem Solving skill of secondary school students. Experimental method was adopted for the study. Lesson transcript based on infusion approach and Problem Solving test were the tools used for the study. The study was conducted on a sample of 40 students of two groups including 20 each for experimental and control group from a secondary school in Ernakulam district, Kerala state. Findings of the study revealed that infusion approach is an effective strategy for enhancing Problem Solving skill of secondary school students

**Keywords:** Infusion Approach, Problem Solving Skill

## 1. Introduction

Augmentation of Problem Solving skills being a matter of challenge to the educational system and the area confronts scarcity of researches too. The present study introduces infusion approach as a contemporary method to enhance Problem Solving skills. The theoretical basis of the infusion approach was suggested by Robert Swartz and David Perkin (Swartz, R. J. (1992).

Swartz opinionated that infusion approach enhances specific Problem Solving skills in different subjects through set learning material. (Aizikovitsh & Amit, 2010) So incorporation of thinking skills in instructional methodology is the strategy of infusion method. The strategy specifies choosing of one thinking skill based on suitability of topic to be taught. Problem Solving skills, creative thinking skills and cognitive thinking

skills are the significant thinking skills taken into consideration. Goals and assumptions are usually clarified by Problem Solving skills. The Problem Solving skills examines, evaluates and accomplishes action and assess conclusions. But it does not mean any thing related to disapproval or negative. Formulating a workable solution to complex personal problem is a positive usage of problem solving.

## 2. Need and significance of the study

An educator usually confronts many hindrances while augment Problem Solving skills in the normal classroom. Two main approaches to augment Problem Solving are the general skill approach and infusion approach (Aizikovitsh & Amit, 2010). In the infusion approach skills are developed by inserting them in the teaching of the set learning material. (Swartz, R. J. (1992). In infusion model content material is reprocessed based on the prescribed strategy to augment Problem Solving skills. The investigator felt that use of infusion

approach in teaching languages help students to understand abstract concepts and will develop Problem Solving skill in a high extent.

An article entitled “Evaluating an Infusion approach to the teaching of Problem Solving skills through Mathematics” in the journal *Procedia –Social and Behavioural Sciences* explores the viability and consequences of developing Problem Solving among students through a program of instruction in probability, employing the infusion approach which revealed that infusion approach is effective for improving Problem Solving skills. (Aizikovitsh & Amit, 2010)

“A review research on infusion approach in teaching thinking: Advantages and impacts” is a research paper that explains use of infusion approach in teaching thinking skills as the researcher specifically investigates whether the approach yields positive or negative outcomes on students' thinking. General conclusions of this study revealed that that infusion approach can be applied in teaching thinking in any subject. (Zulkpli et al., 2017)

Thence the investigator tried a research to prepare infusion approach based lesson plans that help pupils develop both subject consistency and Problem Solving skills and find efficacy of the strategy.

**Statement of the problem** The present study is entitled as “**Effectiveness of Infusion Approach in Augmenting Problem Solving Skill of Secondary School Students**”

### 3.1 Definition of Key terms

#### 3.1.1 Infusion Approach

Infusion approach is an approach in which the teacher use when blending explicit instruction about thinking and the process of content instruction .It involves a pedagogic approach that enhances students thinking and comprehension of the subject matters

#### 3.1.2 Problem Solving Skill

“Problem Solving is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing or evaluating information gathered from or generated by observation, experience, reflection, reasoning or communication as a guide to belief and action”(Scriven ,1996)

### 4. Objectives of the study

- 1) To prepare lesson transcript based on infusion approach in Malayalam for enhancing Problem Solving skill
- 2) To test the effectiveness of infusion approach for enhancing Problem Solving skill

### 5 .Hypotheses of the study

- (1) When the treatment groups are exposed to experimental treatment using infusion approach there will be significant difference between Experimental group and control group with regard to pre test scores Problem Solving skill
- (2) When the treatment groups are exposed to experimental treatment using infusion approach there will be significant difference between experimental group and control group with regard to post test scores Problem Solving skill

### 6 .Sample selected for the study

This study was conducted on a sample of 40 students of two groups including 20 each for experimental and control group from a secondary school in Ernakulam district, Kerala state.

### 7 .Tools of the study

- (1) Lesson transcript based on Infusion Approach (prepared and refined by the investigators). The content selected from secondary level Malayalam reader prepared by SCERT Kerala
- (2) Problem Solving skill test

(Both the tools are prepared and refined by the investigators )

(3) Kerala University Group Test of Intelligence (Verbal), Developed by Nair, Pillai and Anandhavalliyamma

## 8 .Method adopted for the study

The investigator adopted Experimental Method for the study

### 8.1 Methodology of the study

Investigator selected 40 secondary school students and divide them into two groups after equating them using Kerala University Group test of intelligence. Then Problem Solving Skill test was administered in both the groups as pre- test. Scores were tabulated. Experimental treatment was given to group one using the infusion approach and control group was treated with present method. After the treatment the same Problem Solving skill test was administered as post-test. Scores were tabulated and statistically analysed

### 8.2 Design of the study

The investigator adopted Pre Test –Post Test Control group design for the present study

#### 8.2.1 Analysis and Interpretation of data

The details regarding the analysis of comparison of Pre-Test Scores of Experimental and Control Groups are given in Table I

**Table 1**

**Summary of Comparison of Pre-Test scores of Experimental and Control Group**

| Variable              | Group              | N  | Mean | SD   | CR   | Sig.  |
|-----------------------|--------------------|----|------|------|------|-------|
| Problem Solving Skill | Experimental Group | 20 | 9.8  | 1.51 |      | NS    |
|                       | Control Group      | 20 | 10.2 | 1.61 | 0.82 | p>.05 |

N = Number,  
S.D =  
Standard  
Deviation,

NS = Not Significant

It is evident from Table 1 that the obtained Critical Ratio (CR =0.82, p >.05) is not significant at .05 level. Hence it can be concluded from the analysis that Pre- Test scores of students was more or less equal. Hence the hypothesis formulated in this context H<sub>(1)</sub> is rejected.

The details regarding the analysis of comparison of Post -Test Scores of Experimental and Control Groups are given in Table 2

**Table 2**

***Summary of Comparison of Post-Test scores of Experimental and Control Group***

| Variable              | Group              | N  | Mean  | SD   | CR   | Sig.  |
|-----------------------|--------------------|----|-------|------|------|-------|
| Problem Solving Skill | Experimental Group | 20 | 19.6  | 2.14 |      |       |
|                       | Control Group      | 20 | 15.45 | 1.67 | 6.80 | P<.01 |

N = Number, S.D = Standard Deviation, CR-Critical Ratio

Table 2 shows that the obtained Critical Ratio (CR = 6.80,  $p < .01$ ) is significant at .01 level of significance. It is implied that there exists significant difference in the mean Post-Test scores of Experimental group and Control group. The difference is in favour of mean scores of Experimental group and due to the influence of Infusion Approach.

Hence the Hypothesis formulated in this context H<sub>2</sub> is accepted

### **8.3 Findings of the study**

Infusion Approach is an effective strategy for enhancing Problem Solving skills of Secondary School Students

### **9 Conclusions**

Infusion approach is an effective strategy for enhancing Problem Solving skills of secondary school children. It is also implied that infusion approach provide a healthy learning atmosphere to students for learning. Infusion approach is useful not only for problem solving skill enhancement but also for enhancing divergent thinking, critical thinking, creativity and achievement. Curriculum planners should include this approach in school system and it will be very much beneficial for transacting new goals of education

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