



## COGNITIVE LIFE SKILLS EDUCATION PROGRAMME: EMPOWERING MARGINALIZED STUDENTS WITH PROBLEM SOLVING SKILLS

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### ABSTRACT

The present paper attempts to examine the problem solving skill of students from low- socio economic backgrounds (Marginalized) of eighth standard from SSC board. The study adopted a two stage sampling technique. The total sample for the study was 320 students studying in eighth standard were selected from aided school in Mumbai city. The methodology of the present study was of an experiment type. The study adopted a quasi-experimental design of the pre-test- post-test, non-equivalent groups. The intervention programme included lessons on problem solving skill. The statistical technique used for the quantitative data analysis was ANCOVA (Analysis of Covariance). The findings of the study shows that there is a significant difference in the post – test scores students on their problem solving of control and experimental group after partialling out the effect of pre-test scores. The mean scores of experimental group are significantly higher than the mean scores of control group. The Life Skills Education Programme was effective in enhancing problem solving of marginalized students. The effect size of the treatment on problem solving was 0.72 that is moderate.



**KEYWORDS :** Life skills education programme, problem solving skill, low- socio- economic status, marginalized students.

### INTRODUCTION

Adolescence is the stage when young people extend their relationships beyond family and are strongly influenced by their peers and the outside world. Adolescents at this stage are more prone and vulnerable to high risk situations and may submit to it easily. As children enter into adolescent stage, they come across problems they need to sort out themselves. As parents or elders we will not be there to give them advice, but by developing and enhancing in them solid range of problem-solving skills and strategies that they can use on their own.

Life skills include psychosocial competencies and interpersonal skills that help adolescents to make informed decisions, solve problems and think critically. Life skill helps them to become adaptive in their approach and exhibit positive behaviour in all circumstances. When adolescence learns skills and strategies for problem-solving and sorting out conflicts by themselves, they feel healthier and confident. They are more independent and better placed to make good decisions on their own.

### NEED OF THE STUDY

The world is changing rapidly due to globalization, privatization and liberalization. These changes are witnessed in the changing cultural lifestyles of young children and adolescents. They are not equipped enough to cope up with the problems and stress associated with such rapid and exhausting changes. The

education system emphasizes only on acquisition of knowledge but fails to impart and imbibe skills required for a successful life. Life skills have become a core component of all school curricula.

Famous behavioural therapist James Lehman once stated that one of the main reasons for bad child behaviour is that children are simply not skilled in how to solve problems effectively. A young child or teenager with a very limited set of problem solving skills will many times attempt to cope with the situations that life throws their way by either shutting down or acting out, neither of which is a desirable response.

Cognitive life skill programme can be a tool to enhance and empower students to develop skills required for challenging situations. Therefore the researcher developed a programme on Life Skills Education Programme (Cognitive Skills) for the marginalized adolescence students. There was a need to provide academic enrichment activities through this programme.

The paper attempts to examine the problem solving skill of students from low- socio economic backgrounds (Marginalized) of eighth standard from SSC board

### REVIEW OF RELATED LITERATURE

In the present study prior researches were explored by the researcher in the area of Cognitive life skills education programme (problem solving).

Neela Dongre and R. C. Patel (2015) conducted a study on development of problem solving skill of adolescents through teaching of science for sustainable development. The authors of present paper have conducted a study for adolescents of class IX of grant-in-aid, English Medium secondary school in Vadodra, Gujarat selected purposively, with the objective to study the effectiveness of Activity Based Program on the problem solving skill. The tool to study the existing status of problem solving skill in the sample was designed on the basis of the indicators of problem solving skill. The activity based program was designed by selecting the topics that had scope to develop problem solving skill and that had concepts related to sustainable development that was conducted for the academic year 2011-2012. The study with pre test-treatment-post test single group design used Mean, Standard deviation and Correlated t-test to test the null hypothesis stated as 'there will be no significant difference between pre test and post test scores of problem solving skill of the sample'. The data analysis shows significant increase in the use of indicators of problem solving skill after the treatment.

Shelly Wismath, Doug Orr, and Maggie Zhong (2014) conducted a study on student perception of problem solving skills. Problem solving is a critical component of a comprehensive 21st century education. This study investigates the perceptions of students of taking a university liberal education course designed to develop problem-solving skills. We describe how the participants in the study created their own understanding of what problem solving skills are and why they are important. Based on both quantitative and qualitative data collected before, during and after the course, students reported increased communication skills, increased awareness of the importance of problem-solving skills in their major, and significantly increased confidence in their problem-solving abilities. They also demonstrated a strong awareness of how the skills they acquired transfer to both academic and real-world environments.

Ayodhya (2007) conducted a study on problem solving skills and effectiveness of conventional and Polya's heuristic approach. The main purpose of the study was to know the relative effectiveness of Polya's heuristic approach when compared with the conventional method in developing the problem-solving skills of the students. The investigation employed non randomized control group pre-test and post-test design to detect any significant change. 307 students participated in the experiment. Modified standardized problem solving test Idaho Direct Mathematics Assessment (DMA) was used to measure problem solving skills of the students. Results of the 't'- test and analysis of covariance (ANCOVA) on pre-test and post-test scores revealed that the Polya's heuristic approach is more effective than the conventional method in developing problem – solving skills.

The change in behavior of the sample showed its awareness for sustainable development. The findings implied that, using well designed activity based program to develop problem solving skill in

adolescents while teaching science generates awareness about the problems faced by all due to ignorance towards sustainable development

The review related literature shows gap in the area of training and enhancing cognitive (problem solving) life skills education programme. Few researches have been done conducted in this area.

## CONCEPTS OF THE STUDY

### Cognitive Life Skills (Problem Solving)

A problem always has to do with dissatisfaction about a certain situation, which seems to be difficult to tackle and solving means to effectively dealing with (a problem or mystery). Problem solving means the process of finding solutions to difficult or complex issues. Problem solving involves seeking to achieve goals and overcoming barriers. Problem solving is the process of working through details of a problem to reach a solution through systematic operation.

Problem solving can be disseminated by an individual if one understands and verifies the problem well. Problems can be solved easily through rational and logical reasoning, one has to choose a solution to try for a problem, put the solution into practice and evaluate the solution.

“Problem solving is cognitive processing directed at achieving a goal when no solution method is obvious to the problem solver” (Mayer and Wittrock, 2006)

### Marginalized Students (Low Socio-Economic Status)

Socio-economic background takes account of social and economic factors including parents' educational qualifications, parents' occupations, household income, and the level of household overcrowding. It is the economic and sociological combined total measure of students' family (parent) family's economic and social position in relation to others, based on income, education, and occupation. It include a household's lack of financial problems lack of learning resources such as books, supplies and computers and other contributing factors include lack of parental involvement. Studies have also shown that given the right conditions, every student – including those from less fortunate circumstances – have the opportunity to succeed.

## OPERATIONAL DEFINITIONS

1. **Problem Solving:** It is the competencies in students to solve problems by applying logical thinking skills as measured by the score obtained by a student on problem solving scale (Barkman & Machtmes, 2002).
2. **Marginalized students:** refers to those students who are pushed to the margin of the society and are denied the privileges and resources available in the society. In a normal distribution those who get a score of less than  $-1\sigma$  and  $M - 1\sigma$  will be termed as marginalized section.
3. **Life skills Education:** An approach to train and enhance the cognitive skills of students belonging to the marginalized section of the society and prepare them to face the challenges of life.

## AIM OF THE STUDY

To study the effect of Cognitive Life skills education programme on the problem solving skill of adolescent marginalized students of eighth standard of SSC board.

## OBJECTIVE OF STUDY

1. To compare the post-test scores of marginalized students in the experimental and control group on their problem solving skill after partialling out the effect of pre-test scores.

## Hypothesis of the Study

1. There is no significant difference in the post-test scores of students on their problem solving of control and experimental group after partialling out the effect of pre-test scores.

**Sampling Technique:** The study adopted a two stage sampling technique. At the first stage, purposive sampling technique was used. At this stage, five schools were selected which were known to admit students from low socio-economic status i.e. marginalized section. Students from these five schools were administered SES Inventory to identify the marginalized schools. This was followed by comparing the SES scores of students from these five schools using the technique of ANOVA. Here, the F-ratio was found to be 24.56 ( $P < 0.0001$ ). Hence, the Mean SES of the five schools was found to be significantly different. Now, the school which had the least SES mean scores was selected as the experimental school and the second least mean scores was identified as control group.

At the second stage, intact class were selected from these two schools using cluster sampling technique.

**Sample of the Study:** The total sample for the study was 320 students studying in eighth standard were selected from aided school in Mumbai city. The age range of the sample was 12+. The sample included students from urban area only. The control group consisted of 147 students and experimental group consisted of 173 students.

The sample consisted of two schools from South Mumbai. One was the experimental group and the other was the control group. The schools were of co-educational type and affiliated to S.S.C board. After administering the pre-test in the two schools, the treatment was given in the experimental school, which was followed by the post-test in the two schools. No such treatment was given in the control group. In the present study, the population comprised of secondary school students of eighth standard from South Mumbai.

#### **Tools used for the Study**

The following tools were used for collecting data:

1. Problem Solving- (Barkman, & Machtmes, 2002)
2. Socio- economic status Inventory - Patel (2015)

**Intervention Programme:** The Intervention programme (treatment) included seven lessons on Problem Solving skills. The duration for each lesson was of an hour. A constructivist approach was used. The programme focused on the problem solving abilities and skill needed to engage and solve problems by analysing possible causes, identifying possible solutions, selecting best solution, and implementing the solution. Topics like fun with numbers, impromptu skits, group drawing, let's be the secret agent today, let's play alphabet, brain blast and let's play name game with action strategies were used to enhance the problem solving skills. 7 to 8 hours were given to enhance the decision making skill.

**Methodology of the Study:** The methodology of the present study was of an experiment type. The present study adopted a quasi-experimental design of the pre-test- post-test, non-equivalent groups.

**Statistical Technique used for the Study:** The statistical technique used for the data analysis was one- way ANOVA and ANCOVA (Analysis of Covariance)

#### **Findings and Discussion of the Study:**

**H<sub>01</sub>:** There is no significant difference in the post-test scores of students on their problem solving of control and experimental group after partialling out the effect of pre-test scores.

This null hypothesis was tested using the technique of ANCOVA in which the pre-test scores of students on problem solving were used as a co-variate. The F-ratio was found to be 43.15 ( $P < 0.0001$ ). Thus, the null hypothesis is rejected. Hence a significant difference was found in the problem solving skills of students from the experimental and control groups on the post-test after adjusting for the pre-test scores. Figure 1 shows the bar-diagram of mean post -test scores of PS of CG and EG after partialling out the effect of pre-test scores.

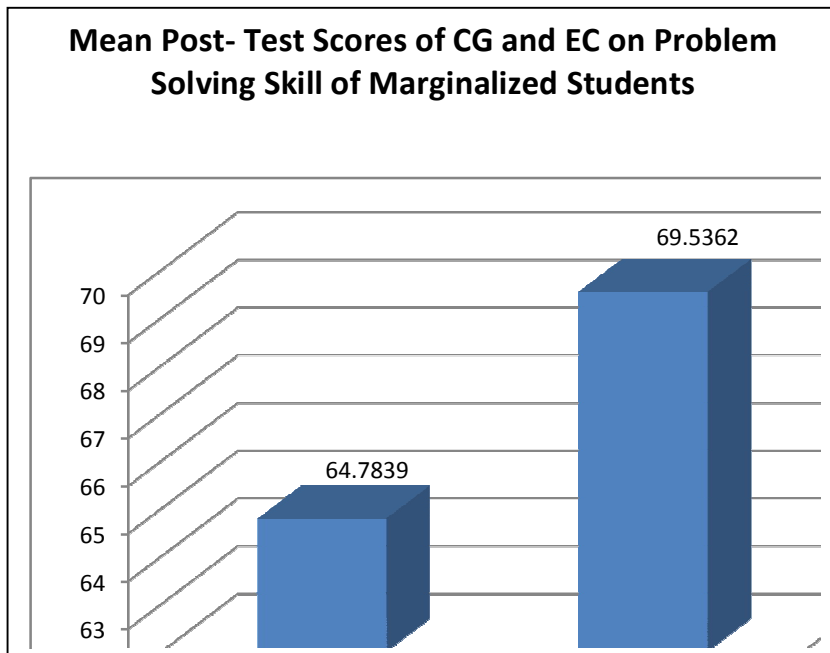


Figure 1

#### CONCLUSION:

There is a significant difference in the post – test scores of students on their decision making of control and experimental group after partialling out the effect of pre-test scores. The mean scores of EG are significantly higher than the mean scores of CG. The mean scores of EG was 69.5362 and the mean score of CG was 64.7839. In other words, the Life Skills Education programme was effective in enhancing problem solving of marginalized students of Eighth standard. The effect size of the intervention programme on problem skill was 0.72. There was a moderate effect of the programme on the problem solving skill of marginalized students.

#### DISCUSSION:

It has been observed that there is a significant difference between the post-test mean scores of EG and CG. The EG had been taught the topics in problem solving using constructivists approach whereas no treatment was given in the control group. This implies that the Intervention programme (treatment) has had an effect on the problem solving of marginalized students of Eighth standard. Therefore, their ability to identify a problem, analyse possible assumptions, select and implement the solutions best applicable for the problematic situation. The reasons could be that the activities and worksheets helped them to enhance their problem solving skill. Strategies such as Sudoku puzzle was used which helped the students to use their logical and reasoning ability. Drawing the figure through verbal description was one of the strategies used to develop their imagination skills. It enabled them to analyse possible causes or assumptions and identify possible solutions for the problem.

The present study is corroborated by the findings of Gange (1980) proposes that successful problem solving require intellectual skills, verbal knowledge, and cognitive strategies. Gange further suggests that these capabilities are learned and thus will vary among adolescents, but can be improved with proper training and instruction. The study is further supported with Ken Kay (2010) invokes certain key skills today's students should develop: critical thinking and problem solving, creativity and innovation, and collaboration and communication. Problem solving skills such as analysis, transfer and metacognition also figure strongly

in the revised Bloom's taxonomy (Krathwohl, 2002) and the facets of understanding outlined by Wiggins and McTighe (2005).

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