SRI RAMAKRISHNA MISSION VIDYALAYA COLLEGE OF EDUCATION
(An Autonomous College affiliated to the Tamil Nadu Teachers Education University and
Re-accredited with A++ grade by NAAC with CGPA 3.82)
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Stimulation of Analytical Thinking through Mathematics among School Students

Introduction:

Analytical thinking is a crucial skill that enables individuals to approach complex problems and challenges by breaking them down into smaller parts, analyzing them, and then putting them back together to form a solution. It is an essential skill for students to develop, as it helps them to think critically and creatively, and it is useful in various academic and professional pursuits. In recognition of the importance of analytical thinking skills, Sri Ramakrishna Mission Vidyalaya College of Education initiated classes to develop these skills among school students.

Objectives:

- To promote analytical thinking skills among students from the sixth standard to the ninth standard.
- To enhance the pedagogical abilities of B.Ed. Student teachers and faculty members in delivering mathematics education that stimulates analytical thinking.
- To create a competency-based educational approach that seamlessly incorporates analytical thinking strategies into the teaching of mathematics.
- To establish a nurturing and participative learning setting that encourages teamwork, creativity, and the development of problem-solving abilities
- To appraise students' advancements and offer them feedback by employing evaluation and feedback methods.

Methodology:

a) Curriculum Integration:

A team of mathematics educators, and experts analytical thinking collaborate to integrate analytical thinking skills in existing curriculum that aligns with the national educational standards and promotes higher order thinking skills. The curriculum incorporate interactive teaching methods, problem-solving activities, and real-world applications of mathematics.

b) Teacher Training:

Student teachers and faculty members received specialized training in instructional strategies that foster analytical thinking in mathematics. The training included periodical workshops and orientations to equip teachers with the necessary skills to implement the programme effectively.

c) Implementation:

The programme implemented in campus schools, covering students from the first standard to the ninth standard. Teachers deliver the curriculum using a student-centered approach, encouraging active participation, critical thinking, and analytical reasoning. The lessons designed to engage students in challenging problem-solving tasks and promote higher-order thinking skills.

d) Assessment and Feedback:

Ongoing assessment tools, such as formative and summative assessments, utilized to monitor students' progress and provide feedback.

The primary goal of Analytical Thinking classes is to develop analytical thinking skill among school students through teaching Mathematical concepts. Mathematical abilities are essential because they provide structure for rationally solving problems. It helps in the conceptualization of several areas that include verbal components such as numerical knowledge, counting, and reasoning as well as non-verbal components such as mathematical notation, reasoning in time and space, calculation, and so on.

Mathematical exercises such as puzzles, riddles, and open-ended inquiries, finding patterns, brainstorming ideas, analysing data, and making situational decisions among students were planned and executed. Application of analytical thinking components paves the way for enhancing the IQ levels. It supports the growth of pupils' critical and creative thinking. It teaches children how to think differently in a diverse range of situations. Utilization of advanced technology in analytical classes stimulate the interest, curiosity and help pupils to familiarize Mathematical concepts easily.

Phase I : Trainer Training Programme:

Regular Trainer's Training Programme on Stimulating Analytical Thinking through Mathematics is conducted for student teachers and question paper setters. The Programme coordinated by Sri. V. Eswaran, Assistant Professor in Mathematics and organized by the Internal Quality Assurance Cell.

The programme has been designed to introduce teaching strategies and syllabus related to stimulating analytical thinking through mathematics. It will cover various topics including the introduction to Moodle (LMS), hands-on training in Google Sheet, Google quiz and question bank preparation using various resources. The aim of the programme is to equip student – teachers and Research scholars with the necessary skills and knowledge to promote analytical thinking and problem-solving abilities among school students through Mathematics.

Phase – II : Implementation of Programme

Sri Ramakrishna Mission Vidyalaya College of Education has initiated organising the Classes on "Stimulation of Analytical Thinking through Mathematics among School Students" for sixth grade students to ninth grade students of Sri Ramakrishna Mission Vidyalaya Swami Shivananda Higher Secondary School. Student-Teachers from Sri Ramakrishna Mission Vidyalaya College of Education and Ph.D Scholars from Department of Mathematics, Sri Ramakrishna Mission Vidyalaya College of Arts and Science has been handling the Analytical Thinking Classes weekly once for a period of 45 minutes duration. Analytical Thinking Tests were conducted through online mode twice in a month to assess pupils' progress. The Programme coordinated by Sri. V. Eswaran, Assistant Professor in Mathematics.

Beneficiaries:

Class	Boys	Girls	Total
VI	122	56	178
VII	113	38	151
VIII	132	38	170
IX	162	72	234
Total	**529**	**204**	**733**

Impact:

The analytical thinking classes organized by Sri Ramakrishna Mission Vidyalaya College of Education have helped students develop analytical thinking skills. The online analytical thinking tests conducted twice a month have helped assess the progress of students. The students have shown improvement in their analytical thinking skills, which is evident from the progress shown in the analytical thinking tests conducted online.

Moreover, the classes have also helped students in enhancing their IQ levels, which will be helpful in their future academic and professional pursuits. Analytical thinking skills help students to think critically and creatively, which is essential in various areas of their life.

By developing analytical thinking skills, students will be able to tackle challenges with more ease, which will help them to achieve their goals.

The use of advanced technology in analytical classes has made the classes more interesting and engaging for students. The students were introduced to new tools, such as educational apps, that allowed them to learn and practice analytical thinking skills in a fun and interactive way. By incorporating technology, the classes were able to stimulate the interest and curiosity of students, which helped them to familiarize themselves with mathematical concepts more easily.

Roles and Responsibilities:

Sri. V. Eswaran, as the coordinator of the program, played a crucial role in planning, organizing, and overseeing its execution. The B.Ed. student teachers (Mathematics and Physical Science) from Sri Ramakrishna Mission Vidyalaya College of Education actively participated in the program by conducting analytical thinking classes for the students. Mathematics student teachers were responsiblefor preparing the analytical thinking question papers and conducting online tests. Their efforts were closely guided and supervised by Sri. V. Eswaran, AssistantProfessor in Mathematics.

Outcomes of the Programme:

- Improved analytical thinking skills among school students and student teachers leading to enhanced problem-solving abilities and critical thinking.
- Increased engagement and motivation among students due to the interactive and challenging nature of the curriculum.
- Strengthened mathematical foundations, as students learn to apply analytical thinking strategies to solve complex problems.
- Enhanced pedagogical skills of student teachers, resulting in more effective delivery of mathematics education that stimulates analytical thinking.

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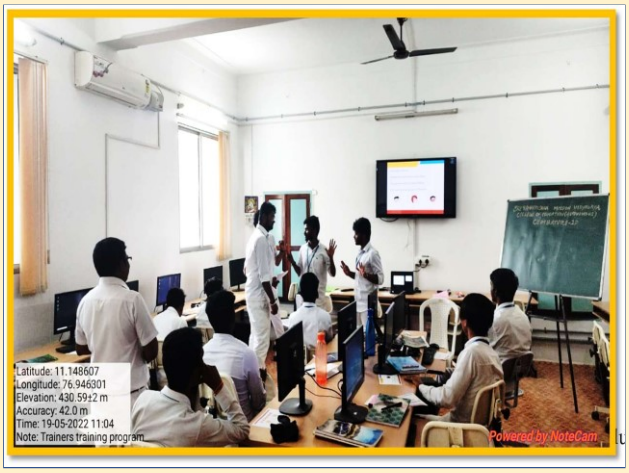
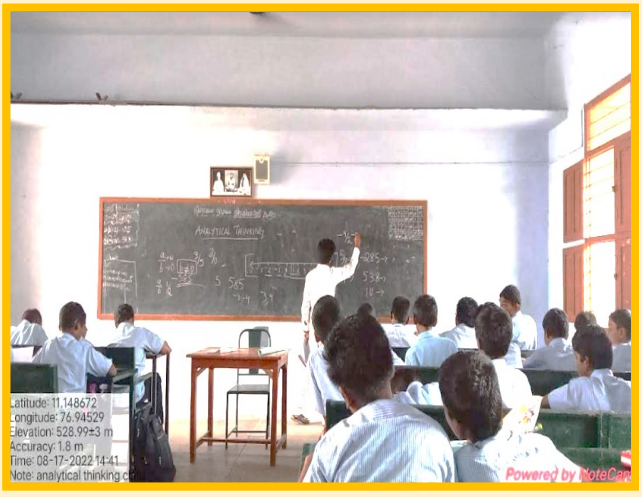
Glimpses

Trainer Training Programme



Thinking Activity for Student teachers

Analytical Thinking Class



Analytical Thinking Class

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