



Effectiveness Of CTCR Model Of Instructional Strategy In Terms Of Life Skills Of Class VIII Students

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Abstract

In the contemporary educational landscape, there is a growing emphasis on life skills development as a fundamental component of holistic learning. This study investigates the effectiveness of the CTCR (Cooperation, Teamwork, Communication, and Resilience) instructional model in enhancing key life skills among Class VIII students. The research specifically explores three core domains: Self-Awareness and Empathy, Critical Thinking and Problem-Solving, and Creative Thinking—skills identified by the World Health Organization as vital for adaptive and productive behavior.

Adopting a pre-test and post-test experimental design, the study involved 90 students who were divided into control and experimental groups. The CTCR-based intervention was implemented with the experimental group over a defined instructional period, while the control group followed traditional pedagogical approaches. Quantitative analysis was conducted using descriptive statistics and Shapiro-Wilk tests to assess the distribution and impact of the intervention on each life skill domain.

Findings reveal a statistically significant improvement across all three domains among students exposed to the CTCR strategy. The mean scores in Self-Awareness and Empathy rose from 32.0 to 39.4, Critical Thinking and Problem-Solving improved from 31.8 to 39.9, and Creative Thinking increased from 32.4 to 39.4 in the experimental group. These enhancements were further corroborated by shifts in skewness and kurtosis values, suggesting improved distribution and consistency in skill acquisition. Comparative gender-based analysis also demonstrated that both male and female students benefited substantially from the intervention, with experimental group participants outperforming those in the control group by a considerable margin.

The results underscore the CTCR model's potential as a transformative instructional strategy that not only supports cognitive development but also nurtures essential socio-emotional competencies. This research contributes valuable insights to educators and curriculum developers seeking to embed life skills education into middle school pedagogy, thereby aligning with the National Education Policy's (NEP 2020) vision for holistic and multidisciplinary learning.

Keywords: Life Skills, CTCR Model, Self-Awareness, Empathy, Critical Thinking, Problem-Solving, Creative Thinking.

Background and Rationale

In the 21st century, education transcends the mere transmission of academic knowledge, emphasizing the cultivation of essential life skills that empower individuals to navigate complex societal dynamics. The World Health Organization (WHO) identifies core life skills such as decision-making, problem-solving, creative thinking, critical thinking, communication, interpersonal skills, self-awareness, and empathy as pivotal for adaptive and positive behavior. These competencies are integral to fostering holistic development in learners, equipping them to face real-world challenges effectively. The Indian educational landscape has progressively acknowledged the significance of life skills education. Initiatives like the Thiruvananthapuram Thiruvananthapuram Thiruvananthapuram (TTT) program aim to instill these skills in students, emphasizing self-awareness, empathy, and critical thinking. However, there remains a pressing need to explore and implement instructional strategies that effectively integrate life skills into the curriculum, particularly at the middle school level.

CTCR Model: Cooperation, Teamwork, Communication, and Resilience

The CTCR model—comprising Cooperation, Teamwork, Communication, and Resilience—is a pedagogical framework designed to cultivate essential life skills among students. These four components form the backbone of an interactive and student-centered learning environment that aims not only to enhance academic outcomes but also to prepare learners for real-life challenges. This model is especially relevant in the context of life skills education for middle school students, as it promotes social-emotional learning and interpersonal development.

Cooperation: Cooperation refers to the ability of students to work amicably with peers to achieve shared goals. In an educational setting, cooperation involves the willingness to listen to others, share resources, respect diverse perspectives, and resolve conflicts constructively. Activities that promote group decision-making, shared responsibilities, and collaborative learning tasks (e.g., joint presentations or group projects) are central to fostering cooperation. According to Vygotsky's sociocultural theory, learning is inherently a social process, and cooperation provides the scaffold for peer-to-peer learning, where students build knowledge together through mutual support.

Teamwork: Teamwork goes beyond simple cooperation by emphasizing the collective efficacy of a group in achieving complex objectives. It involves role allocation, leadership, mutual accountability, and coordination of efforts. Teamwork enhances students' sense of belonging, encourages goal orientation, and helps develop a sense of responsibility toward group success. In classroom activities, such as simulations, team-based learning (TBL), and cooperative games, students experience both the dynamics and benefits of working as a unified entity. Teamwork is particularly important in real-world settings, where professional success often depends on the ability to function effectively in a team.

Communication: Communication encompasses both verbal and non-verbal interaction skills that enable students to express ideas clearly, listen actively, and engage in constructive dialogue. It includes speaking, writing, interpreting body language, and understanding social cues. Effective communication skills are crucial for academic discussions, peer interactions, and conflict resolution. Instructional strategies like role-playing, open-mic discussions, storytelling, and group debates help in refining communication skills. The ability to communicate clearly and confidently also enhances students' self-esteem and social presence, which are integral to leadership and collaboration.

Resilience: Resilience is the capacity to recover from setbacks, adapt to challenging circumstances, and persist in the face of difficulties. It is increasingly recognized as a critical life skill, especially in an era marked by academic pressure, social complexity, and mental health concerns. Resilience in the classroom can be developed through activities that involve problem-solving under stress, learning from failure, reflective journaling, and peer support systems. Teachers play a pivotal role in modeling resilience and fostering a growth mindset, which teaches students to view challenges as opportunities for personal growth.

The CTCR model nurtures an inclusive and empowering learning environment. By focusing on Cooperation, Teamwork, Communication, and Resilience, educators can holistically address both the cognitive and affective needs of students. These life skills not only contribute to immediate classroom success but also prepare students to be responsible, empathetic, and adaptable citizens in a complex and evolving world.

Life Skills

In today's rapidly evolving world, education transcends the traditional focus on academic knowledge, emphasizing the development of essential life skills. These skills enable individuals to navigate complex social dynamics, make informed decisions, and adapt to various life challenges. The World Health Organization (WHO) identifies ten core life skills, which can be broadly categorized into three domains: Self-Awareness and Empathy, Critical Thinking and Problem-Solving, and Creative Thinking.

Self-Awareness and Empathy

Self-awareness involves recognizing one's emotions, thoughts, and behaviors. It is the foundation for emotional intelligence, allowing individuals to understand their strengths, weaknesses, and values.

Developing self-awareness helps students manage their emotions, set personal goals, and build confidence. Educational programs that focus on self-awareness encourage students to reflect on their experiences and understand their reactions to various situations. This reflection fosters personal growth and resilience, essential traits for academic and personal success.

Empathy is the ability to understand and share the feelings of others. It plays a crucial role in building strong interpersonal relationships and fostering a supportive community. Empathetic students are more likely to engage in prosocial behaviors, reduce instances of bullying, and create inclusive environments. Incorporating empathy into the curriculum through activities like role-playing, group discussions, and community service projects helps students appreciate diverse perspectives and develop compassion.

Critical Thinking and Problem-Solving

Critical thinking is the capacity to analyze information objectively, evaluate arguments, and make reasoned judgments. It enables students to question assumptions, identify biases, and consider alternative viewpoints. These skills are vital for academic success and informed citizenship. Educators can cultivate critical thinking by encouraging inquiry-based learning, debates, and analytical writing. Such practices empower students to become independent thinkers and lifelong learners.

Problem-solving involves identifying challenges, generating solutions, and implementing effective strategies. It is essential for overcoming obstacles in academic settings and everyday life. Students who develop strong problem-solving skills are better equipped to handle stress and make constructive decisions. Classroom activities that simulate real-life problems, such as project-based learning and collaborative tasks, enhance students' ability to think critically and devise practical solutions.

Creative Thinking: Creative thinking is the ability to generate innovative ideas and approach situations with originality. It encourages students to explore multiple solutions and think outside the conventional frameworks. Creativity is not limited to the arts; it is integral to scientific discovery, technological advancement, and problem-solving.

Fostering creative thinking in education involves providing opportunities for students to engage in brainstorming sessions, open-ended projects, and interdisciplinary learning. Such experiences promote flexibility, adaptability, and a willingness to take intellectual risks.

Integrating life skills education into the curriculum is imperative for preparing students to navigate the complexities of modern life. By focusing on self-awareness and empathy, critical thinking and problem-solving, and creative thinking, educators can equip students with the tools necessary for personal and academic success. These skills foster resilience, adaptability, and a proactive approach to challenges, laying the foundation for well-rounded individuals capable of contributing positively to society.

1. To study the effect of the CTCR Model on students' Self-Awareness and Empathy.
2. To study the effect of the CTCR Model on students' Critical Thinking and Problem-Solving skills.
3. To study the effect of the CTCR Model on students' Creative Thinking.

Descriptive Analyses of Variables

Descriptive									
Variables	N	Mean	SD	Skewness		Kurtosis		Shapiro-Wilk	
				Skewness	SE	Kurtosis	SE	W	p
Pre-Self Awareness and Empathy	90	32	4.6	0.3067	0.254	0.392	0.503	0.98	0.177
Post-Self Awareness and Empathy	90	39.4	6.55	-0.2768	0.254	-0.791	0.503	0.969	0.059
Pre-Critical Thinking and Problem Solving	90	31.8	5.13	0.1404	0.254	-0.15	0.503	0.991	0.809
Post-Critical Thinking and Problem Solving	90	39.9	5.82	-0.1117	0.254	-0.711	0.503	0.977	0.116
Pre-Creative Thinking	90	32.4	5.36	0.135	0.254	-0.248	0.503	0.989	0.689
Post-Creative Thinking	90	39.4	5.93	-0.1659	0.254	-0.621	0.503	0.979	0.164

Self-Awareness and Empathy: Pre-intervention, the mean score was 32.0 with a standard deviation of 4.60, indicating a moderate spread of scores. The distribution was slightly positively skewed (skewness = 0.31), suggesting a few lower scores, while the kurtosis value (0.39) pointed to a near-normal distribution. The Shapiro-Wilk test ($W = 0.980$, $p = 0.177$) confirmed the data's normality. Post-intervention, the mean increased substantially to 39.4, reflecting a significant improvement in self-awareness and empathy. The distribution showed a slight negative skew (skewness = -0.28), indicating more students scored above the mean, and the kurtosis (-0.79) suggested a flatter curve than normal. The Shapiro-Wilk value ($W = 0.969$, $p = 0.059$) was slightly above the threshold of 0.05, indicating marginal but still acceptable normality. The intervention appears to have positively impacted self-awareness and empathy, as evidenced by both the increased mean and changes in distribution characteristics.

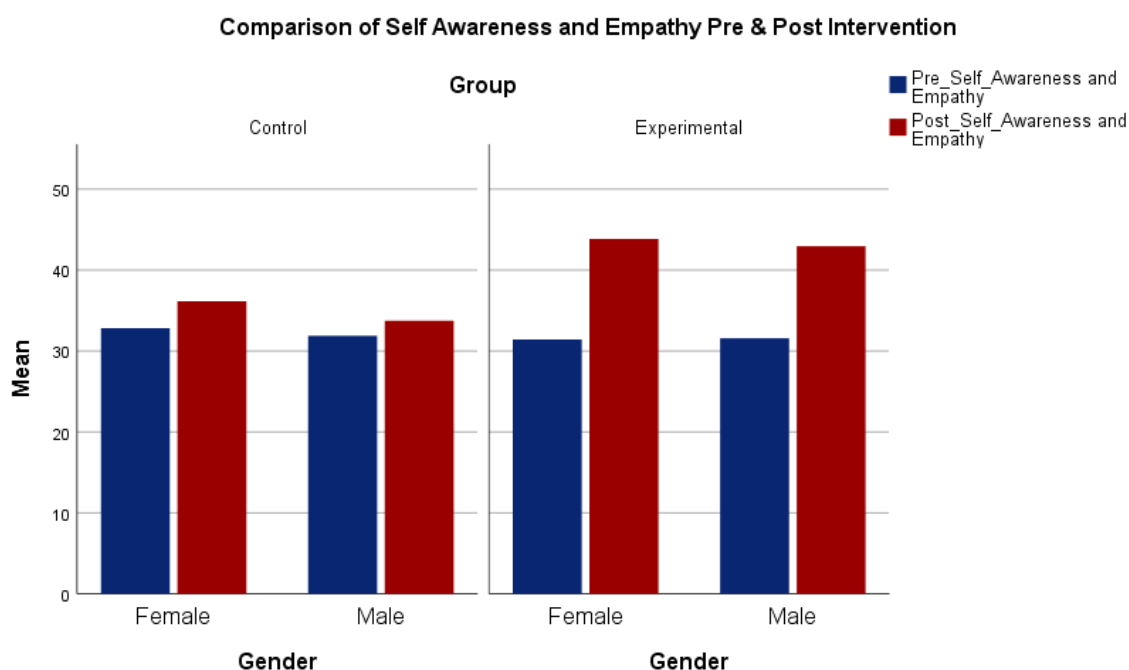
Critical Thinking and Problem Solving: Pre-intervention, the mean score was 31.8 with a standard deviation of 5.13, reflecting moderate variability. The distribution was nearly symmetrical (skewness = 0.14) and slightly flatter than normal (kurtosis = -0.15). The Shapiro-Wilk test ($W = 0.991$, $p = 0.809$) confirmed a strong normal distribution. Post-intervention, the mean increased notably to 39.9, indicating

enhanced critical thinking and problem-solving abilities. The distribution showed a slight negative skew (skewness = -0.11), suggesting more students scored above the mean, while kurtosis remained mildly negative (-0.71), consistent with a somewhat flatter curve. The Shapiro-Wilk test ($W = 0.977$, $p = 0.116$) again confirmed normality. These results suggest that the intervention effectively improved students' critical thinking and problem-solving skills, as evidenced by the significant rise in mean scores and consistent distribution patterns.

Creative Thinking: Pre-intervention, the mean score was 32.4 with a standard deviation of 5.36, suggesting average performance and moderate variability. The distribution showed minimal skewness (0.14) and slightly negative kurtosis (-0.25), indicating near-normal characteristics. This was confirmed by the Shapiro-Wilk test ($W = 0.989$, $p = 0.689$), which demonstrated a strong normal distribution. Post-intervention, the mean increased significantly to 39.4, reflecting improvement in creative thinking. The distribution shifted slightly leftward (skewness = -0.17) and became mildly flatter (kurtosis = -0.62), but remained well within normal limits. The Shapiro-Wilk test ($W = 0.979$, $p = 0.164$) supported continued normality. The data indicate that the intervention positively impacted creative thinking, with consistent distributional characteristics pre- and post-intervention.

Level of Self-Awareness and Empathy among boys and girls before and after the treatment

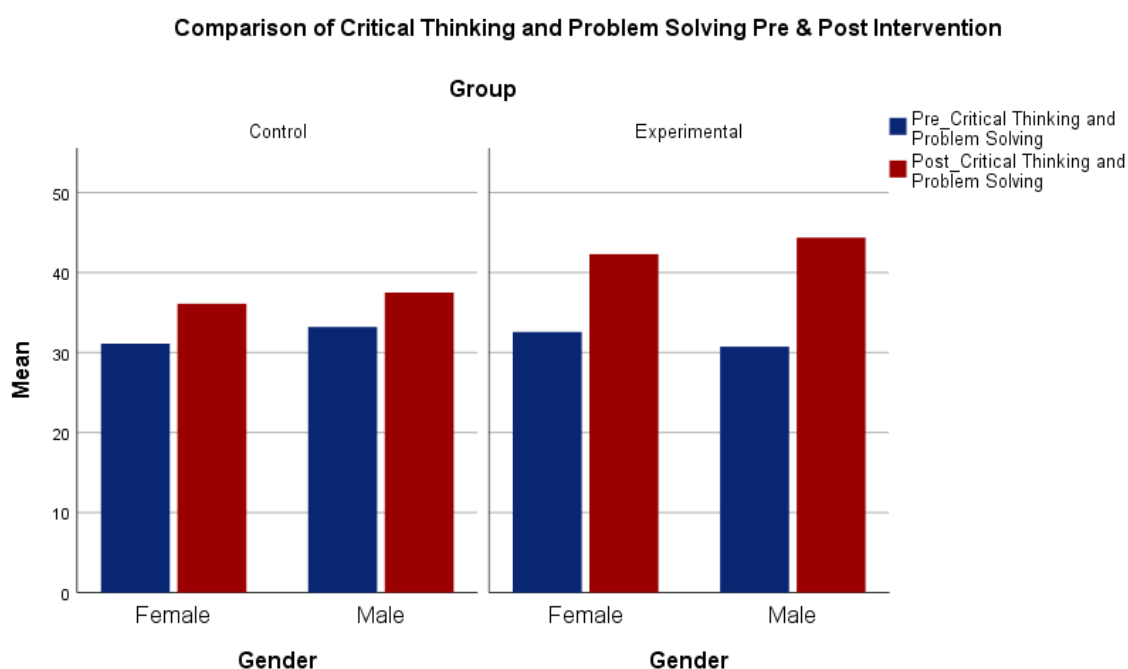
The present analysis explores the effectiveness of the CTCR teaching model in enhancing Self-Awareness and Empathy among students. To assess the model's impact, participants were divided into a control group (no intervention) and an experimental group (received CTCR-based teaching). This aimed to compare their levels of self-awareness and empathy before and after the intervention. The following graph presents these comparisons, offering insight into the CTCR model's influence on Self-Awareness and Empathy.



The above figure shows the mean scores of self-awareness and empathy before and after an intervention using the CTCR teaching model, across male and female participants in both control and experimental

groups. The figure illustrates a clear distinction in the outcomes between participants who underwent the intervention (experimental group) and those who did not (control group). In the control group, both female and male participants showed only a slight increase in their post-intervention scores. Female participants' mean score increased marginally from approximately 33 to 36, while male participants' scores moved from around 32 to 34. This suggests that without the CTCR intervention, changes in self-awareness and empathy were minimal and likely due to natural fluctuations or external factors unrelated to the teaching method. The experimental group, which received the CTCR-based teaching intervention, exhibited a significant improvement in both male and female participants. Female participants' scores rose sharply from about 32 to 44, while male participants' scores increased from roughly 32 to 43. These results indicate that the CTCR model was highly effective in enhancing the participants' levels of self-awareness and empathy. The figure demonstrates that the CTCR model had a substantial positive impact on the development of self-awareness and empathy. While the control group showed minimal change, the experimental group's marked improvement highlights the effectiveness of this intervention in promoting important emotional and psychological competencies across genders.

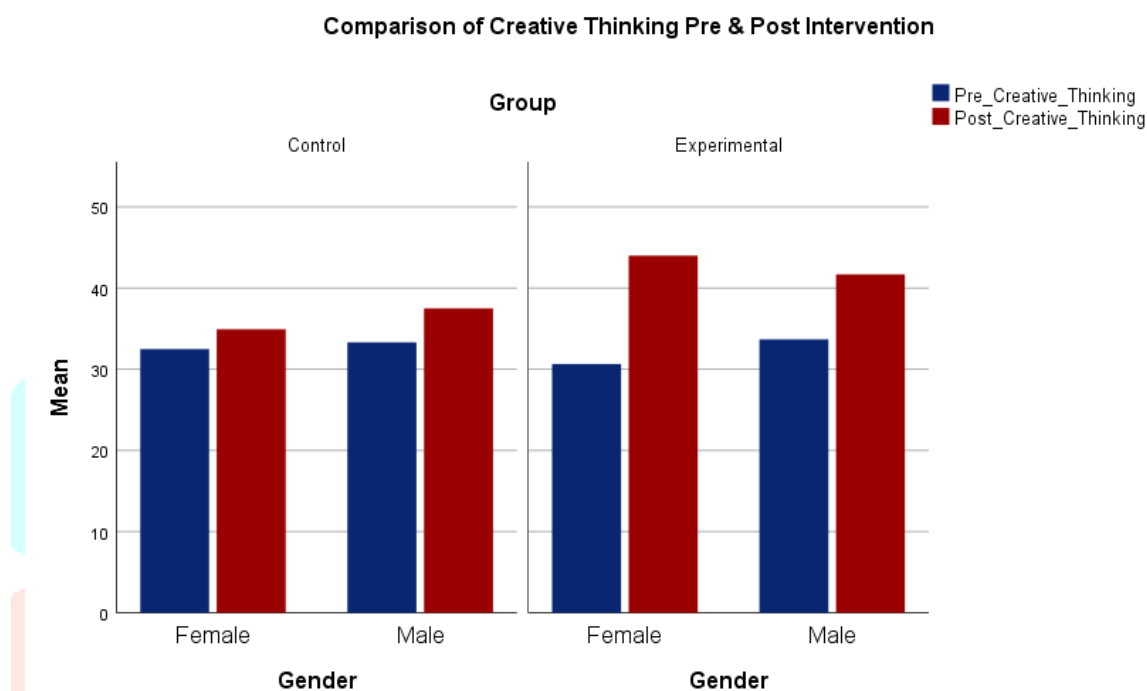
Level of Critical Thinking and Problem Solving among boys and girls before and after the treatment



The graph presents a comparison of Critical Thinking and Problem Solving skills before and after a CTCR model-based teaching intervention, across male and female participants in both control and experimental groups. The objective is to measure the effectiveness of the intervention in enhancing these cognitive skills. In the control group, where no intervention was applied, female participants showed a modest increase from a pre-intervention mean of around 31 to a post-intervention mean of 36. Male participants showed a slightly higher improvement from 33 to 38. These gains are limited and likely due to normal academic exposure or unrelated factors. In the experimental group, where the CTCR model was used,

there was a significant improvement. Female participants' scores increased sharply from around 33 to 43, while male participants improved from about 31 to 45. These results indicate a substantial enhancement in critical thinking and problem-solving abilities due to the structured intervention. The graph clearly demonstrates that the CTCR teaching model had a strong positive impact on developing higher-order cognitive skills in both genders. While the control group showed only minimal progress, the experimental group's scores reflect the effectiveness of the CTCR model in promoting analytical and decision-making capabilities.

Level of Creative Thinking among boys and girls before and after the treatment



The graph illustrates the impact of a CTCR model-based teaching intervention on Creative Thinking abilities among male and female participants in control and experimental groups. The aim was to assess the development of creative thinking before and after the intervention. In the control group, where no special intervention was given, both female and male participants showed only a slight increase. Females improved from a mean score of around 33 to 36, and males from 34 to 38, indicating minimal natural progression. In contrast, the experimental group, which received the CTCR intervention, showed a marked improvement. Female participants improved significantly from approximately 31 to 44, while males increased from about 34 to 42, highlighting the CTCR model's effectiveness. These findings suggest that the CTCR teaching model significantly enhances creative thinking in both genders. Compared to the control group, the experimental group's higher post-intervention scores demonstrate that intentional, reflective, and creative learning strategies foster innovation and idea generation among students.

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