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Effectiveness of Cooperative Learning Strategies in Enhancing Thinking Skills among Prospective Teachers

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Abstract

The present study examined the effectiveness of cooperative learning strategies in enhancing thinking skills among prospective teachers. In contemporary teacher education, the development of thinking skills such as critical thinking, analytical thinking, creative thinking, and problem-solving has become essential for preparing competent and reflective teachers. The study adopted an experimental method with a pre-test and post-test design. A sample of prospective teachers was selected from teacher education institutions using an appropriate sampling technique. Cooperative learning strategies were implemented for the experimental group, while the control group was taught through conventional teaching methods. Standardized tools were used to assess the thinking skills of the participants before and after the intervention. The findings of the study revealed a significant improvement in the thinking skills of prospective teachers exposed to cooperative learning strategies compared to those taught through traditional methods. The results indicated that cooperative learning promoted active participation, collaborative problem-solving, idea sharing, and reflective thinking among learners. The study highlights the educational significance of learner-centered instructional approaches in teacher education programs. The study concludes that cooperative learning strategies are effective in enhancing thinking skills among prospective teachers and recommends their integration into teacher education curricula to foster higher-order cognitive abilities and professional competencies among future teachers.

Keywords: Cooperative Learning Strategies, Thinking Skills, Prospective Teachers.

Introduction

In the twenty-first century, education gives importance not only to the acquisition of knowledge but also to the development of higher-order thinking skills such as critical thinking, creativity, problem-solving, and decision-making. Teacher education institutions therefore have the responsibility of preparing prospective teachers who can think independently and promote meaningful learning in classrooms.

Traditional teacher-centered methods often limit active participation and reflective learning among students. As a result, learner-centered approaches like cooperative learning have gained importance in modern education. Cooperative learning is an instructional approach in which learners work together in small groups to achieve common learning goals through discussion, interaction, and shared responsibility. Such collaborative experiences help learners develop thinking skills, communication abilities, and social competence.

For prospective teachers, cooperative learning is especially important because teaching requires collaboration, reflection, and problem-solving abilities. Through cooperative learning activities, future teachers can improve their critical thinking, analytical reasoning, and decision-making skills. Earlier studies have also shown that cooperative learning positively influences academic achievement, participation, and cognitive development.

Although many studies have examined the educational benefits of cooperative learning, limited research has focused specifically on its role in enhancing thinking skills among prospective teachers. Therefore, the present study aims to investigate the effectiveness of cooperative learning strategies in enhancing thinking skills among prospective teachers.

Review of Related Literature

The review of related literature provides a basis for understanding the role of cooperative learning strategies in developing thinking skills among prospective teachers. Earlier studies have examined the influence of cooperative learning on academic achievement, critical thinking, learner participation, and cognitive growth.

Johnson and Johnson (1999) stated that cooperative learning encourages positive interdependence and individual responsibility among learners. Their findings showed that students learning through cooperative methods demonstrated better achievement, social relationships, and higher-order thinking skills than those learning individually.

Slavin (2014) reported that cooperative learning strategies improve academic performance and intellectual development. The study highlighted that group discussions and collaborative activities help learners analyze, interpret, and organize ideas effectively, thereby strengthening critical thinking abilities.

Sharan (2010) observed that cooperative learning enhances both academic and social development. According to the study, collaborative classroom activities increase learner motivation, participation, and reflective thinking, which contribute to meaningful learning experiences.

Abrami et al. (2008) found that collaborative learning approaches significantly improve critical thinking and reasoning abilities. Their meta-analysis showed that discussion-based and interactive instructional methods support cognitive development among learners.

Prince (2004) concluded that active learning methods, including cooperative learning, positively influence understanding, retention, and critical thinking. The study emphasized that learners construct knowledge more effectively through participation and interaction than through passive learning.

Tran (2014) examined the impact of cooperative learning on academic achievement and reported that students exposed to cooperative learning strategies demonstrated better performance, improved confidence, and stronger critical thinking skills.

The reviewed studies indicate that cooperative learning strategies contribute positively to cognitive development, learner engagement, and higher-order thinking skills. However, only a limited number of studies have focused specifically on prospective teachers. Therefore, the present study attempts to examine the effectiveness of cooperative learning strategies in enhancing thinking skills among prospective teachers.

Need and Significance of the Study

Modern education requires teachers who possess critical thinking, creativity, problem-solving ability, and effective decision-making skills. Therefore, teacher education institutions must provide learning

experiences that help prospective teachers develop higher-order thinking skills necessary for successful teaching and professional growth.

Traditional teaching methods often focus on memorization and passive learning, giving limited opportunities for interaction, reflection, and active participation. In contrast, cooperative learning strategies encourage discussion, collaboration, peer interaction, and shared responsibility among learners. Such learner-centered approaches help prospective teachers improve their thinking skills, communication abilities, and confidence.

The present study is important because only limited research has been conducted on the effectiveness of cooperative learning strategies in enhancing thinking skills among prospective teachers. The findings of the study may help teacher educators and curriculum planners understand the value of cooperative learning in teacher education programs.

The study is significant as it promotes innovative teaching practices and contributes to improving the quality of teacher education by developing thinking skills among prospective teachers.

Statement of the Problem

In the present educational scenario, the development of thinking skills has become an essential objective of teacher education. Prospective teachers are expected to possess abilities such as critical thinking, reasoning, creativity, decision-making, and problem-solving in order to manage modern classroom situations effectively. The quality of future education largely depends on how well teacher education programs prepare student teachers to think independently and act professionally.

Despite these expectations, many teacher education institutions still rely heavily on traditional teaching methods that encourage passive learning and memorization. Such methods often provide limited opportunities for discussion, collaboration, and reflective learning, which are necessary for the development of higher-order thinking skills. As a result, prospective teachers may not receive sufficient learning experiences that stimulate intellectual growth and active participation.

Cooperative learning strategies have emerged as innovative instructional approaches that promote interaction, shared learning, and collaborative problem-solving among learners. These strategies encourage students to participate actively in the learning process, exchange ideas, and develop deeper understanding through group activities. Educational researchers have pointed out that cooperative learning can positively influence cognitive and social development. However, studies focusing specifically on the enhancement of thinking skills among prospective teachers through cooperative learning strategies remain limited.

In view of the growing importance of learner-centered approaches in teacher education, there is a need to examine the effectiveness of cooperative learning strategies in improving the thinking skills of prospective teachers. Therefore, the investigator has undertaken the present study entitled:

“Effectiveness of Cooperative Learning Strategies in Enhancing Thinking Skills among Prospective Teachers.”

Operational Definition of Key Terms

1. Cooperative Learning Strategies

For the purpose of the present study, cooperative learning strategies refer to learner-centered instructional approaches in which prospective teachers learn in small groups by participating in shared academic tasks.

These strategies involve cooperation, active interaction, exchange of ideas, joint responsibility, and collective problem-solving to achieve common learning goals.

2. Thinking Skills

In this study, thinking skills denote the mental abilities used by prospective teachers to understand, analyze, interpret, evaluate, and apply knowledge in different learning situations. It includes abilities such as critical thinking, creative thinking, reasoning, decision-making, and problem-solving that support effective learning and intellectual development.

3. Prospective Teachers

Prospective teachers refer to students enrolled in teacher education programs who are preparing themselves for the teaching profession. In the present study, the term specifically refers to B.Ed. student teachers undergoing professional training in teacher education institutions.

Research Questions

- What is the level of thinking skills among prospective teachers before the implementation of cooperative learning strategies?
- Is there a significant difference between the pre-test and post-test scores of prospective teachers taught through cooperative learning strategies?
- Is there a significant difference in the post-test thinking skills of prospective teachers taught through cooperative learning strategies and those taught through conventional teaching methods?

Objectives of the Study

- To prepare an instructional package based on cooperative learning strategies for prospective teachers.
- To compare the mean pre-test scores on thinking skills of prospective teachers in the experimental group and the control group.
- To compare the mean post-test scores on thinking skills of prospective teachers in the experimental group and the control group.
- To study the effectiveness of cooperative learning strategies in enhancing thinking skills among prospective teachers.

Hypotheses of the Study

- There is a significant difference between the mean pre-test scores on thinking skills of prospective teachers in the experimental group and the control group.
- There is a significant difference between the mean post-test scores on thinking skills of prospective teachers in the experimental group and the control group.
- Cooperative learning strategies are more effective than conventional teaching methods in enhancing thinking skills among prospective teachers.

Methodology

Method of the Study

The study aimed to find out the effectiveness of cooperative learning strategies in enhancing thinking skills among prospective teachers. The participants of the study were 60 prospective teachers. The experimental method was adopted for the study. To examine the effectiveness of cooperative learning strategies in enhancing thinking skills among prospective teachers, the samples were randomly divided

into two groups, namely the experimental group and the control group, with 30 prospective teachers in each group. The experimental group was taught through cooperative learning strategies, whereas the control group was taught through the conventional teaching method. The study was conducted for 36 working days with forty-five minutes of instruction per day during the academic year 2025.

Sample of the Study

Sample

The sample of the study consisted of 60 prospective teachers from teacher education institutions in Thiruvananthapuram district. The experimental group was taught using cooperative learning strategies, while the control group was taught through the traditional teacher-centered method.

Tools of the Study

For the present study, the researcher prepared lesson plans based on cooperative learning strategies and developed pre-test and post-test tools to measure the thinking skills of prospective teachers. The lesson plans and test items were prepared based on the B.Ed. curriculum and learning objectives related to thinking skills. The tools were validated after consultation with experts in education and pedagogy. The finalized lesson plans and thinking skills test were used for collecting data for the study. A total of 11 lessons were selected and taught to both the experimental and control groups. The researcher personally handled the instructional process for both groups.

Data Collection Procedure

The researcher selected prospective teachers from teacher education institutions with the assistance of teacher educators to conduct the study. The participants were informed about the purpose of the study, which included a pre-test, instructional intervention, and post-test. However, they were not informed in advance about the details of the post-test in order to avoid memorization and practice effects.

During the first week, the participants were divided into two groups, namely the control group and the experimental group, based on their previous academic performance. Each group consisted of prospective teachers from different socio-economic and educational backgrounds, with 30 participants in each group. A pre-test on thinking skills was administered to all participants to assess their initial level of thinking skills.

After the administration of the pre-test, the researcher began the instructional intervention using prepared lesson plans. The control group was taught through the conventional teaching method, while the experimental group was taught using cooperative learning strategies involving group discussion, collaborative activities, peer interaction, and shared problem-solving tasks.

In the second week, the researcher continued teaching the selected lessons to both groups according to their respective instructional methods. In the third week, the researcher completed the instructional programme and administered the post-test on thinking skills to all participants to determine the effectiveness of cooperative learning strategies and to compare the performance of the experimental and control groups.

Results and Data Analysis

Tenability of Hypothesis I

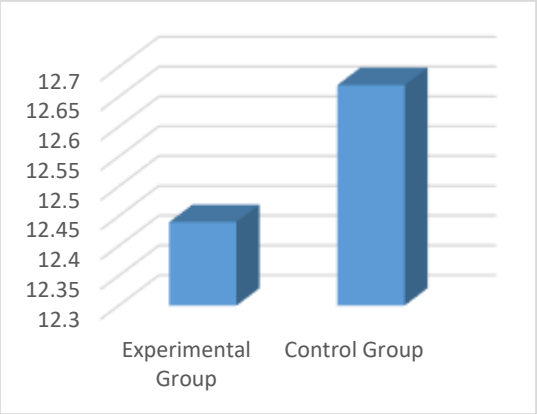
Hypothesis I

There is a significant difference between the mean pre-test scores on thinking skills of prospective teachers in the experimental group and the control group.

Table 1
Comparison of the Mean Pre-Test Scores on Thinking Skills of the Experimental Group and the Control Group

Group	N	Mean	Standard Deviation	Calculated t value	Remarks
Control Group	30	12.44	3.35	0.028	NS
Experimental group	30	12.67	3.12		

Figure 1



The analysis of the mean pre-test scores on thinking skills using the test of significance of the difference between the experimental group and the control group revealed that the obtained t-value (t = 0.028) was not significant at the 0.05 level. This indicates that there was no significant difference between the mean pre-test scores of the experimental group and the control group. Hence, it is concluded that both groups were equivalent with regard to their thinking skills before the implementation of cooperative learning strategies.

Tenability of Hypothesis II

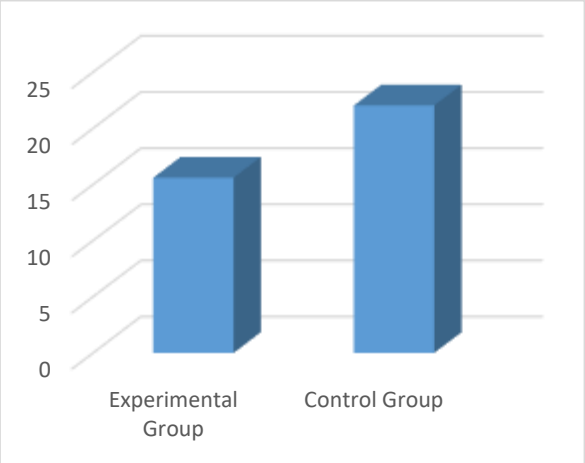
Hypothesis II

There is a significant difference between the mean post-test scores on thinking skills of prospective teachers in the experimental group and the control group.

Table 2
Comparison of the Mean Post-Test Scores on Thinking Skills of the Experimental Group and the Control Group

Group	N	Mean	Standard Deviation	Calculated t value	Remarks
Control Group	30	15.6	3.81	7.92	Significant
Experimental group	30	22.03	3.52		

Figure 2



The analysis of the mean post-test scores on thinking skills using the test of significance of the difference between the experimental group and the control group revealed that the obtained t-value (t = 7.92) was significant at the 0.01 level. This indicates that there was a significant difference between the mean post-test scores of the experimental group and the control group. Hence, it is concluded that cooperative learning strategies produced a significant improvement in the thinking skills of prospective teachers in the experimental group when compared to the control group.

Tenability of Hypothesis III

The prospective teachers exposed to cooperative learning strategies showed enhanced thinking skills when compared to those who were taught through the traditional teaching method. This indicates the effectiveness of cooperative learning strategies in enhancing thinking skills among prospective teachers.

Discussion of Results

The present study was conducted to examine the effectiveness of cooperative learning strategies in enhancing thinking skills among prospective teachers. The findings of the study revealed meaningful differences between the experimental group and the control group with respect to the development of thinking skills.

The analysis of the pre-test scores showed that there was no significant difference between the experimental and control groups before the intervention. This indicates that both groups possessed a similar level of thinking skills at the beginning of the study. The equivalence of the two groups ensured that the changes observed in the post-test scores could be attributed mainly to the instructional treatment provided during the experiment.

The post-test analysis revealed a significant difference between the experimental group and the control group in favor of the experimental group. Prospective teachers who were taught through cooperative learning strategies performed better in thinking skills than those taught through the conventional teaching method. The improvement in the performance of the experimental group may be due to the active involvement of learners in collaborative tasks, group discussions, idea sharing, and problem-solving activities provided through cooperative learning.

Cooperative learning strategies created opportunities for prospective teachers to interact with peers, exchange viewpoints, analyze information collectively, and reflect on learning experiences. Such learner-centered activities may have strengthened critical thinking, analytical reasoning, creativity, and decision-

making abilities among the participants. The findings of the study support the view that active participation and social interaction contribute positively to cognitive development and meaningful learning.

The results of the present study are also in agreement with earlier research findings which reported that cooperative learning enhances higher-order thinking skills, academic achievement, communication skills, and learner engagement. The study therefore highlights the educational value of cooperative learning strategies in teacher education programs.

Conclusion

The study clearly indicates that cooperative learning strategies are effective in enhancing thinking skills among prospective teachers. The findings revealed that prospective teachers exposed to cooperative learning demonstrated better performance in thinking skills compared to those taught through conventional teaching methods.

The study emphasizes the importance of learner-centered instructional practices in teacher education. Cooperative learning strategies not only improve intellectual abilities but also encourage interaction, participation, teamwork, and reflective learning among prospective teachers. These experiences are essential for preparing future teachers who can effectively handle modern classroom situations and promote active learning among students.

The findings of the study suggest that teacher education institutions should incorporate cooperative learning strategies into their regular instructional practices to develop higher-order thinking skills among prospective teachers. The study also provides valuable insights for teacher educators, curriculum planners, and educational policymakers regarding the use of innovative teaching methods in teacher education programs.

Thus, the present study concludes that cooperative learning strategies can play a significant role in improving the quality of teacher education by fostering thinking skills and promoting meaningful learning experiences among prospective teachers.

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