

Effectiveness of Cross-Age Peer Tutoring on the Learning Achievement of B.Ed. Students

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ABSTRACT

This current study was conducted to assess the impact of cross-age peer tutoring on the learning achievement of B.Ed. first-year students for the topic of Audio-Visual Aids in the Hardcore paper- Educational Technology. The experimental research method with pre-test and post-test design was used. By adopting purposive sampling technique 46 First-year B.Ed. students of Sree Siddaganga College of Education constituted the sample of the study. Self-constructed tool was administered before and after the experiment to the students using Google Forms. The tool consisted of 20 multiple-choice questions for both pre-test and post-test. The data collected were analyzed using Mean, Standard Deviation and t-test. The results showed that there was a considerable increase in the learning achievement of students irrespective of their gender, medium of instruction and discipline following the use of cross-age peer tutoring. This study suggests that cross-age peer tutoring is an effective teaching strategy for improving learning achievement and encouraging collaborative learning of B.Ed. students.

Keywords: Cross-Age Peer Tutoring, Learning Achievement, B.Ed. Students, Educational Technology, Audio-Visual Aids, Experimental Research.

INTRODUCTION

The effectiveness of teacher education is largely influenced by the use of efficient instructional strategies, which actively engage the learners in the teaching and learning process. Recent years have seen growing focus on learner-centred instructional approaches that foster collaborative, critical and meaningful learning. One such approach that has proven to be effective involves cross-age peer tutoring, whereby senior learners facilitate the juniors in the understanding of academic concepts. The strategy not only improves the experience of learning of the learners but also improves the teaching skills and subject knowledge of the tutors. Thus, it is highly applicable in teacher education programs.

Educational Technology is an important component of the B.Ed. program that prepares the teachers-in-training for appropriate use of instructional strategies and teaching aids. One of the important topics that is included in Educational Technology is Audio-Visual Aids, which provides the students with knowledge of how the various teaching aids will make the teaching process in the class interesting and effective. It is important for the future teachers to know how to use the aids efficiently in their profession and hence they need to learn about the concept through active learning approaches.

Taking this into consideration, this research investigates the effect of cross-age peer tutoring on the learning achievement of B.Ed. students. In this research, the second-year B.Ed. student teachers tutor the first-year B.Ed. student teachers on the subject matter "Audio-Visual Aids in Educational Technology." The objective of this research is to compare the achievement level of the students before and after exposure to the cross-age peer tutoring program in order to find out its effectiveness as an instructional approach.

Objectives of the Study

1. To evaluate the learning achievement of the first-year B.Ed. students before and after the cross-age peer tutoring.
2. To find out the effectiveness of cross-age peer tutoring in enhancing the learning achievement of first-year B.Ed. students.
3. To compare the learning achievement of first-year B.Ed. students according to their gender, language, and discipline.

REVIEW OF RELATED LITERATURE

Ikwuka, Anyima, and Akudolu (2026) conducted research on the impact of Think–Pair–Share and peer tutoring on students' academic performance. It was found that peer tutoring contributed in enhancing the learning process of students and encouraged classroom participation.

Ali, Tahseen, and Malik (2026) investigated the impact of peer tutoring on the improvement of secondary school students' performance in Chemistry. It was found that peer tutoring helped enhance the academic performance and conceptual understanding of students.

Gao et al. (2025), through a meta-analysis on cross-age tutoring, discovered that cross-age tutoring positively affected the academic achievement of both tutors and tutees. The study found that cross-age peer tutoring is an effective method of collaborative learning.

Dada et al. (2023) have researched the influence of peer tutoring and cross-age peer tutoring on the academic achievement of gifted students in mathematics. According to the results of the study, cross-age peer tutoring had a positive impact on the student's achievement and interest in mathematics.

Tenvikrita et al. (2022) have conducted a study of cross-age peer tutoring within a technology-enhanced STEAM project. The study showed that cross-age peer tutoring stimulated the process of collaborative learning, participation and concept understanding.

Thus, the literature review proves that peer tutoring and cross-age peer tutoring have positive effects on the learning achievements of students. Nevertheless, there is a lack of research on the efficiency of cross-age peer tutoring for B.Ed. student teachers studying Educational Technology, specifically the Audio-Visual Aids topic. Hence, the researchers intend to study the effect of cross-age peer tutoring for B.Ed. student teachers.

METHODOLOGY

Variables of the Study

The following variables have been identified for this research study:

- Independent Variable: Cross Age Peer Tutoring
- Dependent Variable: Learning Achievements of First Year B.Ed. Students
- Moderator Variables: Gender, Medium of Instruction, Discipline.

Sample and Sampling technique:

For the current research, the sample used was 46 **first year B.Ed. students**

from **Sree Siddaganga College of Education**. This was done by adapting purposive sampling methodology.

Tool of the study:

The Instrument used for data gathering is the Achievement Test developed by the researchers. The Achievement Test contained 20 multiple choice items that covered the topic, Audio Visual Aids in Educational Technology. The same test was utilized as pre and posttest using Google Forms to measure the learning achievement of the respondents.

Statistical technique:

The data gathered was analyzed using appropriate methods of statistics. The mean and standard deviation were utilized for summarizing the data while t-test was utilized for analyzing the pre-test and post-test scores in relation to gender, medium of instruction, and discipline.

Hypotheses of the Study

1. There is no significant difference in the pre and post-test achievement scores of the first-year B.Ed. students exposed to Cross age peer tutoring.
2. There is no significant difference in the post-test achievement scores of the male and female first-year B.Ed. students exposed to Cross age peer tutoring.
3. There is no significant difference in the post-test achievement scores of the Kannada and English medium first-year B.Ed. students exposed to Cross age peer tutoring.
4. There is no significant difference in the post-test achievement scores of the Arts & Science first-year B.Ed. students exposed to Cross age peer tutoring.

FINDINGS AND DISCUSSION

Table 1 : Mean And Standard Deviation Of Student-Teachers Responses

	Variable	N	Mean	SD
Test	Pre test	46	7.83	2.44
	Post test	46	11.52	3.59
Gender	Female	32	11.63	4.16
	Male	14	11.57	2.79
Discipline	Humanities	27	11.37	3.79
	Science	19	11.74	3.36
Medium of instruction	Kannada	26	11.46	3.84
	English	20	11.60	3.33

Table 2 : t-test values of scores from test

	Variable	N	Mean	SD	t-value	Df	Critical Value (0.05)	Result
Test	Pre test	46	7.83	2.44	8.07	45	2.014	Significant
	Post test	46	11.52	3.59				
	Female	32	11.63	4.16	0.04	44	2.015	Not Significant

Gender	Male	14	11.57	2.79				
Discipline	Humanities	27	11.37	3.79	0.34	44	2.015	Not Significant
	Science	19	11.74	3.36				
Medium of instruction	Kannada	26	11.46	3.84	0.13	44	2.015	Not Significant
	English	20	11.60	3.33				

The above statistical analysis reveals the following:

Test (Pre-test and Post-test)

It was discovered that the t-value (8.07) is greater than the critical value (2.014) at 0.05 level of significance. Thus, the null hypothesis was rejected. This implies that there is a significant difference between the pre-test and post-test achievement scores of first-year B.Ed. students who received cross-age peer tutoring.

Gender (Male and Female)

The t-value (0.04) was found to be less than the critical value (2.015) at 0.05 level of significance. Thus, the null hypothesis was accepted. It implies that there is no significant difference in the achievement scores of male and female first year B.Ed. students who have undergone cross age peer tutoring.

Discipline (Science and Humanities)

The t-value (0.34) was found to be less than the critical value (2.015) at 0.05 level of significance. Thus, the null hypothesis was accepted. It implies that there is no significant difference in the achievement scores of Science and Humanities first year B.Ed. students who have undergone cross age peer tutoring.

Medium of Instruction (Kannada and English)

The t-value (0.13) was found to be less than the critical value (2.015) at 0.05 level of significance. Thus, the null hypothesis was accepted. It implies that there is no significant difference in the achievement scores of Kannada and English medium first year B.Ed. students who have undergone cross age peer tutoring.

RESULT

From the analysis of the data collected, the following important results were found:

- There was a significant difference between the achievement scores of the first-year B.Ed. students who were exposed to cross-age peer tutoring before and after the test.
- There was no significant difference between the achievement scores of male and female first-year B.Ed. students who were exposed to cross-age peer tutoring.
- There was no significant difference between the achievement scores of Kannada and English medium first-year B.Ed. students who were exposed to cross-age peer tutoring.
- There was no significant difference between the achievement scores of Science and Humanities first-year B.Ed. students who were exposed to cross-age peer tutoring.
- The results show that cross-age peer tutoring enhanced the achievement of first-year B.Ed. students irrespective of their gender, medium of learning and disciplines.

CONCLUSION

In conclusion, this study proves that cross-age peer tutoring is an effective pedagogical tool which can contribute to increased academic performance of first year B.Ed. students. The results of the paired t-test proved the existence of a significant increase in achievement performance from pre-test to post-test among first year B.Ed. students who had been under cross-age peer tutoring. The study also proved that there are no significant differences in post test achievements based on gender, Medium of instruction and disciplines of learners. This means that cross-age peer tutoring is equally effective for all categories of student teachers.

Educational Implications

There are several educational implications of the findings of the present study. These are as follows:

1. Cross-age peer tutoring can be effectively implemented as an instructional method to improve the learning achievement of B.Ed. students.
2. Teacher educators can adopt cross-age peer tutoring to facilitate active learning, collaboration and peer interaction in the classroom.
3. The peer tutoring activity can be promoted at B.Ed. institution to help students understand concepts and improve their teaching skills.
4. It is an inclusive instructional method as it benefits students of all genders, medium of instruction and disciplines.
5. It can be incorporated in teacher education programs to increase the academic achievement and cooperation of student teachers.

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