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Effect of spaced learning for developing the listening skill of attention deficit hyperactive students

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ABSTRACT

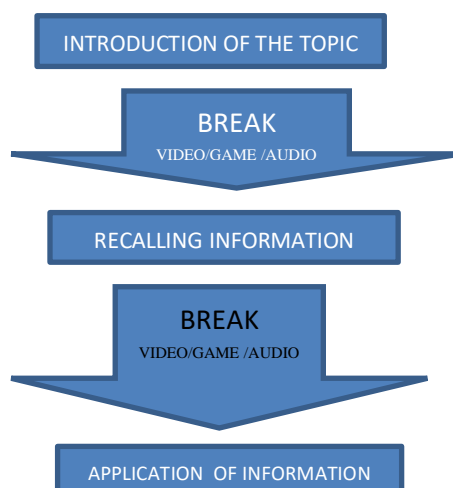
Spaced learning is an innovative teaching-learning process. The main objective of this study was to test the effect of spaced learning for enhancing the listening skill of attention deficit hyperactive students. Four students were selected as the sample from the primary grade of Kerala state syllabus school. An experimental procedure was adopted for the study. Listening skill test and lesson transcripts based on spaced learning were used as the tools for the study. The obtained data were analyzed using Analysis of Covariance. The major findings of the study were that spaced learning is an effective strategy for enhancing the listening skill of attention deficit hyperactive students at the primary grade

Keywords: Spaced Learning, Listening Skill, Attention Deficit Hyper Active Students

1. INTRODUCTION

Spaced Learning is an innovative method introduced in the field of education. The basic theory behind spaced learning claims that learning is much more effective when it is arranged with systematic 5 to 10 minutes intervals in between highly condensed learning content. It was the British neuroscientist and educator Paul Kelly (2013) who developed and formalized the application of spaced learning. Usually three or four intervals are arranged in between a class of content transaction. The educator compartmentalizes the pre-determined content into meaningful sessions. The educator conducts revisions and memorizes the previously taught content into meaningful intervals. The content formation in the learner's mind happens easily due to the frequent revisions and repetitions of the same content. Moreover, these constructed contents will last in the learner's memory for a long time. Spaced learning method has developed in contrast to the theory of massed learning approach. Spaced learning method got established against the concept of making learning tiresome by information overloading and lack of repetition.

Paul Kelly has formalized the application of spaced learning on the basis of the theoretical study conducted by American Neuroscientist R. Douglas. Douglas put forward the concept of content-based classes of 15-20 minutes duration encompassing three intervals for compartmentalizing classes into these sessions. These intervals provide knowledge-nourishing time for the human brain to combine the previous knowledge with that of the new information. Repetition of the new concepts helps in the accommodation of new knowledge in the cognitive structure of the learner. Given below are the different progressive stages through which spaced learning progresses:



2. REVIEW OF LITERATURE

Kanj (2016) conducted a study on *spaced repetition promotes efficient and effective learning :policy implications for instruction* and he proved that spaced repetition is a solution to all the major learning barriers faced by students. He also stated that Spaced practice enhances memory, problem solving, and transfer of learning to new contexts and Spaced practice offers great potential for improving students' educational outcomes.

Will Thalheimer(2006) published an article on *Spacing Learning Events Over Time: What the Research Says. The research shows that spacing learning over time produces substantial learning benefits*. These benefits result from different mechanisms, including those based on repetitions and those based on other factors. Spaced-repetition effects are particularly noteworthy given the enormous research literature supporting their use. The following findings are highlighted in the report: 1. Repetitions—if well designed—are very effective in supporting learning. 2. Spaced repetitions are generally more effective than non-spaced repetitions. 3. Both presentations of learning material and retrieval practice opportunities produce benefits when utilized as spaced repetitions. 4. Spacing is particularly beneficial if long-term retention is the goal—as is true of most training situations. Spacing helps minimize forgetting. 5. Wider spacings are generally more effective than narrower spacings, although there may be a point where spacings that are too wide are counterproductive. A good heuristic is to aim for having the length of the spacing interval be equal to the retention interval.

3. RATIONALE OF STUDY

Spaced learning method is most effective for sustaining the listening skill of attention deficit hyper active learners. Students with attention deficiency found to be backward in studies since they are unable to focus on same content for long time. The repetitive strategy followed in spaced learning helps the hyper active learners and learners with attention deficiency to sustain their interest or attention span.

4. OBJECTIVES OF THE STUDY

- (1) To develop spaced learning strategy for attention deficit hyper active students for enhancing listening skill
- (2) To test the effectiveness of spaced learning strategy for enhancing listening skill of hyper active students

5. HYPOTHESIS OF THE STUDY

There will be significant difference between experimental group and control group when the treatment groups are exposed to experimental treatment

6. METHODOLOGY

Experimental method was adopted for the study. Two groups were selected as experimental group and control group

7. SAMPLE

Sample selected from primary grade students. Total of 40 students possessing hyperactivity were selected. Among 40, twenty were selected as experimental group and twenty were selected as control group

8. TOOLS EMPLOYED

- (1) Spaced learning strategy based lesson plans
- (2) Listening skill test

9. PROCEDURE OF DATA COLLECTION

Listening skill test was administered as pre test for both experimental group and control group. Then experimental group was treated with spaced learning strategy and control group was treated with present teaching method. The same content was taught to both the groups. After treatment the same listening skill test was administered as post test. Scores of pre test and post test were computed for analysis

10. STATISTICS TECHNIQUES EMPLOYED

The sample were not equated groups. Nullifying the effect of extraneous variables the investigator applied analysis of covariance for analysing the data

11. RESULT AND DISCUSSION

In the present study, the sample of the study is attention deficit hyper active primary school students. So it is inconvenient to sort out the students into two different equated groups. So the investigator selected two non – equated intact class groups for the study. Hence it is necessary to analyse the data by using Analysis of Co – variance (ANCOVA)(Garrett). Thus the difference in the initial status was removed statistically (Glass & Hopkins, 1996). ANOVA was done before proceeding to ANCOVA (Garrett) and the F ratios for the pre test and post test was computed. The summary of F ratio of listening skill test of attention deficit hyper active primary school students is given in Table 1.

Table 1: F ratio of pre test and post test scores of listening skill test of attention deficit hyper active primary school students

Source of variation	df	SSx	SSy	MSx	MSy	Fx	Fy
Among means	1	0.16	95.20	0.16	95.20		
Within groups	48	304.72	205.12	6.35	4.27	0.03	22.28**
Total	49	304.88	300.32				

From Table 1, it is clear that there exists no significant difference in the pre score of listening skill test of attention deficit hyper active primary school students of experimental and control groups as the obtained F_x value ($F_x = 0.03, p > .05$) is not significant at .05 level of significance. From Table 1, it is given that the obtained F_y value ($F_y = 22.28, df = (1,48), p < .01$) is significant at .01 level of significance. It indicates that there exists significant difference in the post test scores of listening skill test of attention deficit hyper active primary school students of experimental and control groups.

In ANCOVA, the adjusted sum of squares for post test scores was computed (Winer, 1971). The F ratio was computed by using ANCOVA and the summary of result is given in Table 2

Table 2: F ratio of adjusted post test scores of listening skill test of attention deficit hyper active primary school students

Source of variation	df	SSx	SSy	SSy.x	MSy.x	Fy.x
Among Means	1	0.16	95.20	97.65	97.65	
Within Groups	47	304.72	205.12	174.88	3.72	26.24**

The obtained F_{yx} ratio was significant at .01 level of significance as the obtained F_{yx} ($F_{yx} = 26.24, p < .01$) is significant. Hence it is clear that the adjusted post test means differ significantly by using the initial difference on pre test.

The adjusted post test means of listening skill test of attention deficit hyper active primary school students of experimental and control groups were compared and this difference was tested for significance. The result of comparison of adjusted post test scores of listening skill test of attention deficit hyper active primary school students of experimental and control groups is given in Table 3

Table 3: Result of comparison of adjusted post test scores of listening skill test of attention deficit hyper active primary school students of experimental and control groups

Groups	N	M_x	M_y	$M_{y.x}(\text{Adjusted})$	SE_M	t
experimental	30	14.37	20.57	20.58		
Experimental	30	14.25	17.75	17.73	0.56	5.12**

Table 3 gives that the obtained value of t ($t = 5.12, p < .01$) is significant at .01 level of significance. It implies that the attention deficit hyper active primary school students of experimental and control groups differ significantly in their post test scores of listening skill as they were adjusted to pre test. Table 3 also gives that the mean scores of post test scores of listening skill test of attention deficit hyper active primary school students of experimental ($M = 20.58$) is significantly higher than that of control group ($M = 17.73$). Hence it can be concluded that Spaced Learning is effective for enhancing listening skill of attention deficit hyper active primary school students. This result is graphically represented through the Figure 1

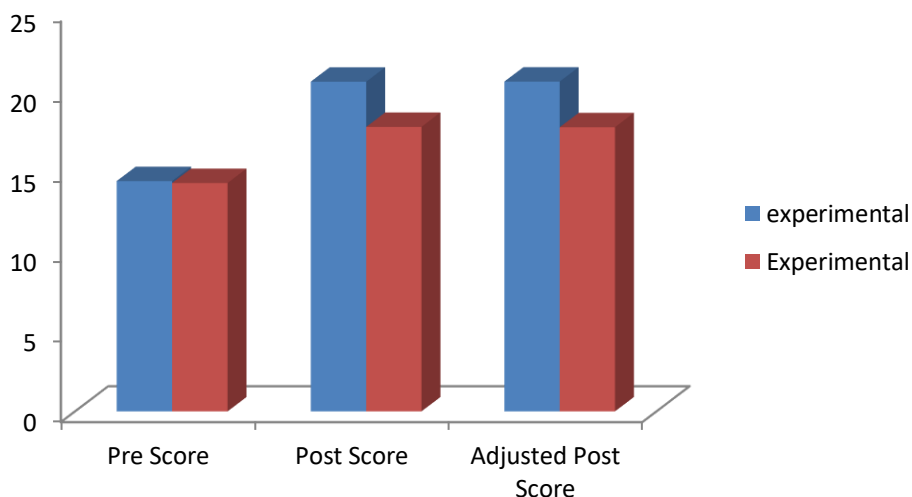


Fig. 1: Graphical representation of mean scores of listening skill test of attention deficit hyper active primary school students of experimental and control groups

12. FINDINGS AND CONCLUSIONS

- The study revealed that spaced learning is an effective strategy for enhancing listening skill of attention deficit hyper active students at primary grade
- This method can be included in the school curriculum for enhancing listening skill of students

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