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EFFECTIVENESS OF INTEGRATED STRATEGY AMONG D.EL.ED., STUDENTS

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ABSTRACT

The researcher is interested to examine the effectiveness of Integrated Strategy among D.El.Ed., students. For this study, the Experimental research method with equivalent group design was followed. Integrated strategy for the unit 'Algebra' in Mathematics of standard VI to VIII, Achievement Test in Mathematics and Mathematics Interest Inventory was used to collect the data. The researcher used purposive sampling technique for the selection of the sample. The sample consisted of 90 D.El.Ed., students. The appropriate statistical techniques were employed in the analysis part. The main finding is that the effectiveness of integrated strategy on Achievement in Mathematics (AM) is higher compared to traditional method.

Keywords: *Effectiveness, Integrated Strategy, D.El.Ed., Students, Interest, Achievement and Mathematics.*

Introduction

Integrated Strategy means group of strategies are organized and linked with real life situation that includes learners' interest and needs creating a variety of meaningful activities and learning experience. D.El.Ed., students are the students studying two years Diploma in Elementary Education Programme (D.El.Ed.,), enrolled in District Institute of Education and Training and qualified to become elementary teachers after obtaining a certificate of D.El.Ed.

Teachers focused on content, schedule and standard, not the needs of the students. To rectify the weakness, deficiency and learning difficulty in the acquisition of knowledge, the concepts should be taught by the teacher adopting suitable strategy. **Cornell** (1999) found that students become disinterested with instruction that is highly focused on rote memorization rather than on the study of concepts. Therefore, the teacher should adopt innovative instructional strategy in teaching Mathematics. Hence, the investigator intended to use Integrated Strategy to overcome the problem of poor performance of D.El.Ed., Students in Mathematics.

Objectives of the Study

- To examine if there exists any significant difference between the Pre-test and Post-test mean scores of the Achievement in Mathematics (AM) of the experimental group and control group.
- To examine if there exists any significant difference between the Pre-test and Post-test mean scores of the Interest in Mathematics (IM) of the experimental group and control group.
- To examine if there exists any significant difference between the Post-test mean scores of the achievement and Interest in Mathematics (IM) of the experimental group based on gender and age.
- To examine if there exists any relationship between the Achievement in Mathematics (AM) and Interest in Mathematics (IM) of the experimental group in the Post-test.

Hypotheses of the Study

- There exists no significant difference between the Pre-test and Post-test mean scores of the Achievement in Mathematics (AM) of the experimental group and control group.
- There exists no significant difference between the Pre-test and Post-test mean scores of the Interest in Mathematics (IM) of the experimental group and the control group.

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- There exists no significant difference between the Post-test mean scores of the achievement and Interest in Mathematics (IM) of the experimental group based on gender.
- There exists no significant difference between the Post-test mean scores of the achievement and Interest in Mathematics (IM) of the experimental group based on age.
- There exists no relationship between Achievement in Mathematics (AM) and Interest in Mathematics (IM) of the experimental group in the Post-test.

Research Procedure

In the present study, Experimental research method with equivalent group design was followed. Two group of students, namely the experimental and the control group were taken for the study. The control group was taught through conventional method of teaching and Integrated strategy was used for teaching the experimental group.

Variables

Integrated strategy has adopted as the independent variable and achievement and Interest in Mathematics (IM) have adopted as the dependent variables and, gender and age are adopted as the sub-variables of the study.

Sample

The sample selected for the experiment was purposive sample. Forty five students for e*xperimental group* was selected from District Institute of Education and Training (DIET), Pudukkottai district and forty five students for control group was selected from District Institute of Education and Training (DIET), Palayampattai in Virudunagar District.

Tools used for the Study

- Integrated strategy for the unit 'Algebra' in Mathematics of standard VI to VIII

It was constructed and standardized by the investigator. Activities, PowerPoint presentation, demonstration or modelling, guided practice, independent practice and self-learning integrated with CSA-SI-Instruction using STAR mnemonic devise is used as an integrated strategy for the students to solve mathematics word problems effectively.

- Achievement Test in Mathematics (ATM)

It was constructed and standardized by Thilagavathy, M. and the investigator. It consists of 50 questions. Test-Retest method was adopted to find the reliability of the test. The content validity of the test was established.

- Mathematics Interest Inventory (MII)

It was constructed and standardized by Muthaiyan, R. and the investigator. It consists of 40 Yes/No type statements. In 40 statements, 21 statements are positive and 19 statements are negative. Spilit-half method was adopted to find the reliability of the inventory. The content validity of the inventory was established.

Statistical Techniques

The data obtained were analyzed by using appropriate statistical techniques such as mean, standard deviation, 't'-test, 'F'-test and co-efficient of correlation.

Results and Interpretation

The hypotheses were formulated for the present study and applied statistical techniques with the help of SPSS (Statistical Package for Social Sciences) Computer Software.

Table 1

Pre-test						
Group	**No. of Samples**	**Mean Value**	**S.D Value**	**df**	**t**	**Significant Level**
Control	45	17.4322	4.0145	88	0.0741	Not Significant
Experimental	45	17.3671	4.3106			
Post-test						
Group	**No. of Samples**	**Mean Value**	**S.D Value**	**df**	**t**	**Significant Level**
Control	45	19.9186	3.9472	88	17.9736*	Significant (5 % level)
Experimental	45	38.4682	5.6877			

The value (t) which is calculated in the above-mentioned table (0.0741) between the *experimental group* and the *control group* with respect to the Pre-test is not greater than the value 1.99 (table value) at 5% significant level. It is hence, not significant. Thus, the hypothesis is not to be rejected and it can be stated that the Pre-test mean scores of the Achievement in Mathematics (AM) does not significantly differ based on groups.

The value (t) which is calculated in the above-mentioned table (17.9736) between the *experimental group* and the *control group* with respect to the Post-test is not less than the value 1.99 (table value) at 5% significant level. It is hence, significant. Thus, the hypothesis is to be rejected and it can be stated that the Post-test mean scores of the Achievement in Mathematics (AM) differs significantly based on groups. Hence, the effectiveness of integrated strategy is higher compared to traditional method.

Table 2

Pre-test						
Group	**No. of Samples**	**Mean Value**	**S.D Value**	**df**	**t**	**Significant Level**
Control	45	22.4471	5.8906	88	0.0215	Not Significant
Experimental	45	22.4756	6.6514			
Post-test						
Group	**No. of Samples**	**Mean Value**	**S.D Value**	**df**	**t**	**Significant Level**
Control	45	24.8799	8.2734	88	4.4989*	Significant (5 % level)
Experimental	45	31.2453	4.6512			

The value (t) which is calculated in the above-mentioned table (0.0215) between the *experimental group* and the *control group* with respect to the Pre-test is not greater than the value 1.99 (table value) at 5% significant level. It is hence, not significant. Thus, the hypothesis is not to be rejected and it can be stated that the Pre-test mean scores of the Interest in Mathematics (IM) does not significantly differ based on groups.

The value (t) which is calculated in the above-mentioned table (4.4989) between the *experimental group* and the *control group* with respect to the Post-test is not less than the value 1.99 (table value) at 5% significant level. It is hence, significant. Thus, the hypothesis is to be rejected and it can be stated that the Post-test mean scores of the Interest in Mathematics (IM) differs significantly based on groups. Hence, the Mathematics interest is increased by the integrated strategy.

Table 3

Variable	**Gender**	**No. of Samples**	**Mean Value**	**S.D Value**	**df**	**t**	**Significant Level**
AM	Male	20	31.4511	3.4361	43	7.4077*	Significant (5 % level)
	Female	25	40.6723	4.8970			
IM	Male	20	30.7561	4.5612	43	0.4549	Not Significant
	Female	25	31.4562	5.7634			

The value (t) which is calculated in the above-mentioned table (7.4077) is not less than the value 1.99 (table value) at 5% significant level. It is hence, significant. Thus, the hypothesis is to be rejected and it can be stated that the post-test mean score of the Achievement in Mathematics (AM) differs significantly based on gender, and female students have achieved more than male students.

The value (t) which is calculated in the above-mentioned table (0.4549) is not greater than the value 1.99 (table value) at 5% significant level. It is hence, not significant. Thus, the hypothesis is not to be rejected and it can be stated that the post-test mean score of the Interest in Mathematics (IM) does not significantly differ based on gender.

Table 4

Variable	**Sum of Squares (MS)**	**Sum of Squares (MS)**	**df**	**Mean Variance of Squares (MVS)**	**F**	**Significant Level**
AM	Between groups	31.901	2	15.9505	0.4550	Not Significant
	Within groups	1472.262	42	35.0539		
IM	Between groups	17.604	2	8.802	0.4732	Not Significant
	Within groups	781. 157	42	18.5990		

The value (F) which is calculated in the above-mentioned table (0.4550) is not greater than the value 3.23 (table value) at 5% significant level. It is hence, not significant. Thus, the hypothesis is not to be rejected and it can be stated that the post-test mean score of the Achievement in Mathematics (AM) does not significantly differ based on age.

The value (F) which is calculated in the above-mentioned table (0.4732) is not greater than the value 3.23 (table value) at 5% significant level. It is hence, not significant. Thus, the hypothesis is not to be rejected and it can be stated that the post-test mean score of the Interest in Mathematics (IM) does not significantly differ based on age.

Table 5

		Achievement in Mathematics (AM)	**Interest in Mathematics (IM)**
Achievement in Mathematics (AM)	Pearson Correlation	1	0.299*
	Sig. (2-tailed)		0.052
	N	45	45
Interest in Mathematics (IM)	Pearson Correlation	0.299*	1
	Sig. (2-tailed)	0.052	
	N	45	45

*- Significant (5 % level)

The value (r) which is calculated in the above-mentioned table (0.299) is not less than the value 0.298 (table value) at 5% significant level. It is hence, significant. Thus, the hypothesis is to be rejected and it can be said that, the Achievement in Mathematics (AM) and Interest in Mathematics (IM) of D.El.Ed., students have low positive relationship with one another.

Conclusion

The results revealed that Mnemonic Instruction using STAR strategy has the higher mean score than the control group students taught by the conventional method of teaching. The reason is that STAR strategy enables students to remember factual information, provide a visual or verbal prompt for students who may have difficulty retaining information. Hence, it has been recommended that teachers should facilitate the use of integrated strategies to teach mathematics for developing interest and improve their Achievement in Mathematics (AM). They should also include varieties of Mnemonics into their instructional strategies to effectively cater for the diverse abilities of students within their classrooms.

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