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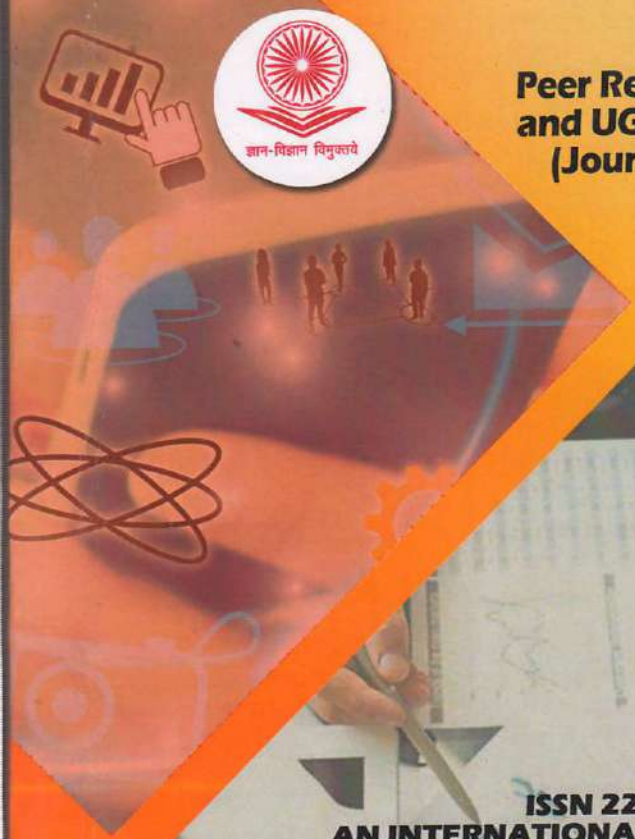

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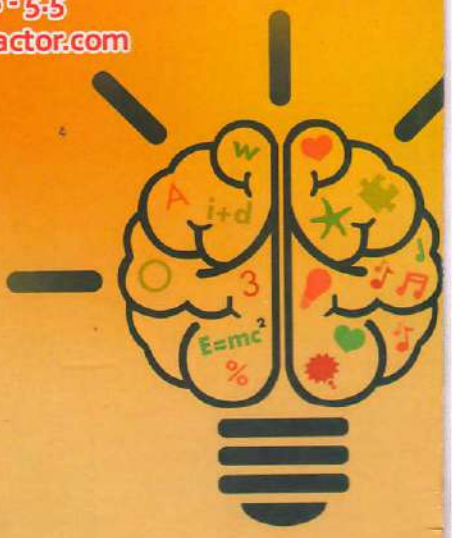

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10. Teaching Addition Skills to Children with Slow Learners

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Abstract

Teaching computation skills to students with slow learner is a very challenging task for many teachers. It needs certain strategies and techniques to make the learning process simpler. Direct Instruction (DI) is an instruction strategy typically focuses on accomplishing instructional objectives. It is a strategy where well planned, well-ordered and structured lessons are used. The effect of using DI for teaching addition skills was observed among students with Slow Learner at second standard. The sample size of the study was ten students with slow learners who are registered with Patina Inclusive School, Hyderabad and studying in the second standard. They were divided into twogroups, one group was assigned for the programme with Direct Instruction strategy and another for the conventional method. They were taught single digit addition for one month. Collected data were calculated for independent sample *t*-test and paired*t*-test scores. These results revealed that both the groups were showing significant improvement in their performance at the end of the intervention. However, degree of statistical significance is proven more with the group who received intervention with direct instruction strategy.

Key words – Slow Learner, Computation Skills, Direct Instruction

Background

Teaching computation skills to students with slow learner is a very challenging task for many teachers. But, if we level them as non-learner it will be wrong. They mayacquire the computation skills like others when we consider his/her abilities and learning style during plan and implement it accordingly. Problems in learning mathematic concepts by students with learning problems might be a difficult task to be solved with traditional methods of instruction and techniques (Dettori&Ott, 2006). Various techniques are available which can help students with slow learners in learning math concepts. Some of the techniques are giving enough time to

TEACHING ADDITION SKILLS TO CHILDREN WITH SLOW LEARNERS

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ABSTRACT

Teaching computation skills to students with slow learner is a very challenging task for many teachers. It needs certain strategies and techniques to make the learning process simpler. Direct Instruction (DI) is an instruction strategy typically focuses on accomplishing instructional objectives. It is a strategy where well planned, well-ordered and structured lessons are used. The effect of using DI for teaching addition skills was observed among students with Slow Learner at second standard. The sample size of the study was ten students with slow learners who are registered with Patina Inclusive School, Hyderabad and studying in the second standard. They were divided into two groups, one group was assigned for the programme with Direct Instruction strategy and another for the conventional method. They were taught single digit addition for one month. Collected data were calculated for independent sample *t*-test and paired *t*-test scores. These results revealed that both the groups were showing significant improvement in their performance at the end of the intervention. However, degree of statistical significance is proven more with the group who received intervention with direct instruction strategy.

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Background

Teaching computation skills to students with slow learner is a very challenging task for many teachers. But, if we level them as non-learner it will be wrong. They may acquire the computation skills like others when we consider his/her abilities and learning style during plan and implement it accordingly. Problems in learning mathematic concepts by students with learning problems might be a difficult task to be solved with traditional methods of instruction and techniques (Dettori & Ott, 2006). Various techniques are available which can help students with slow learners in learning math concepts. Some of the techniques are giving enough time to perform, creating a fun atmosphere of learning, using real examples, giving opportunities to do at their own and express their works, etc.

Many of the researchers are working are working on teaching strategies of students with learning problems predominantly focused on reading & writing, and

language related issues (Kinder et al., 2005). Conventional method helps students to perform a task which they need assistance. In this strategy, teachers are observing students closely and keeping them to be alert for discovering new ideas and concepts.

Direct Instruction is an instruction strategy typically focuses on accomplishing instructional objectives. It is a strategy where well planned, well-ordered and structured lessons are used. It relies on the behavioral approach, all the instructions are given clearly and sequentially when a skill is to be learned in a step by step manner. Students who trained using direction instruction strategy achieved mathematical skills better than students who trained using traditionally methods (Manalo, E. et.al. 2000).

Mackenzie A., et.al. 2004 conducted a study to examine the effectiveness of direct instruction strategy in linking KG mathematical concepts and claimed that developmentally retarded students showed improved in the performance on the mathematical concepts. Intervention with direct instruction strategy for the basic conceptual and cognitive numerical skills in mathematics among children with mathematics learning difficulties resulted in mastery of all computational operations (Kaufmann P., and Thony B., 2003).

Noticeably, students with slow learners are struggling to learn the concepts with traditional techniques. As a kind of support in this regard, researcher is attempting to examine the influence of direct instruction strategy in learning mathematics concepts by students with slow learners. By considering the present scenario, researcher has framed the problem of the study as to examine the effect of Direct Instruction strategy on single digit addition skills among students with slow learner of second standard.

Objectives

- To compare mean scores of achievement in single digit addition skills of student with slow learners who receives teaching through direct instruction and conventional method.

Methodology

To serve the objective of the present study the Experimental Research design – Independent Samples Design was engaged. A total of ten students with slow learner registered with Patina Inclusive School, Hyderabad and studying in the second standard were selected as sample of the present study. They were divided into two groups, one group was assigned for the programme with Direct Instruction strategy and another for the conventional method. For the present study researcher develop a tool called ‘Test of Single Digit Addition Skill’.

Tool: Test of Single Digit Addition Skill

The purpose of the tool is to assess the performance on single digit addition skills among students with slow learner. It consist of 16 items under four levels i.e. level I – Objects, level II – Abacus, level III – Lines and level IV – Numerals. Again under each domain there are four sub categories i.e. upto 6, 9, 12 and 18. The recording system of the tool is of five rating scale subjected to the mode of performance of the students i.e. accurately (2 pts.), with clue (1.5 pts.), with partial step by step instruction (1 pt.), with total step by step instruction (0.5 pt.) and not performed (0 pt.).Establishment of validity of the tool was conducted with the help of 15 professionals in the field of inclusive education who teaches mathematics.

Procedure

The research was conducted in the premise of Patina Inclusive School, Hyderabad. Prior to the study written permission was obtained from administrator of the institution and consent from parents of the sample. With the help of 'Test of Single Digit Addition Skill' two tests were conducted for both the groups at before and after implementation of the program. The tests were conducted individually on same day for both the groups i.e. Group I and Group II. All the observed data were entered onto a Performa. Researcher also developed a kit for programme implementation and named it as instructional kit which consists of different items, like Flash cards, Abacus, Blocks, Spoons, Real objects, Beads, Miniatures, etc. A total of continuous 30 sessions were carried out in five weeks for both the groups. The students in the group I was taught single digit addition skills through direct instruction strategies and for the group II with conventional method. Both the groups were taught by using the prepared kits. The activities were followed in a sequence which is promote from simple to complex, concrete to semi concrete and semi concrete to abstract level. The activities involved shorting & grouping, counting & bringing together, and increase the level of difficulty in learning of relating objects with numbers to addition of single digits.

Analysis and Interpretation

Objective 1: - To compare mean scores of achievement in single digit addition skills of student with slow learners who receives teaching through direct instruction and conventional method.

Hypothesis: - There is no significant difference between mean scores of achievement in single digit addition skills among students with slow learners who receives teaching through direct instruction and conventional method.

The data were analysed with the help of t-test and the results are given in four tables.

Table 1: Group wise Mean, SD and paired t-values of achievement in single digit addition skills at before and after the treatment with Direct Instruction strategy

Scheduled	N	Mean	SD	*df*	*t* - value
Before the Programme	5	12.33	1.7	4	32.5018
After the Programme	5	16.82	1.94		

The two-tailed P value is less than 0.0001
By conventional criteria, this difference is considered to be statistically significant.
The 95% confidence interval of this difference: From -4.86631964634 to -4.10034701646

From table 1, it can be seen that the t-value is 32.5018 which is significant at 0.0001 level with df=4. It reflects that the mean scores of achievement in single digit addition skills of children with slow learners of Class II do differ significantly from before to after teaching with direction instruction method. Thus, the null hypothesis, that there is no significant difference between mean scores of achievement in single digit addition skills among students with slow learners who receives teaching through direct instruction is rejected. Further the mean score of achievement in single digit addition skills before the treatment is 12.33 which is significantly lower than that of after treatment i.e. 26.79. It may, therefore, be said that Class II students with slow learner were found to have significantly improvement in single digit addition skills.

Table 2: Group wise Mean, SD and paired t-values of achievement in single digit addition skills at before and after the treatment with Conventional method

Scheduled	N	Mean	SD	*df*	*t* - value
Before the Programme	5	12.23	0.48	4	9.9228
After the Programme	5	13.57	0.25		

The two-tailed P value equals 0.0006
By conventional criteria, this difference is considered to be statistically significant.
The 95% confidence interval of this difference: From -1.7064070438 to -0.9602596242

From table 2, it can be seen that the t-value is 9.9228 which is significant at 0.0006 level with df=4. It reflects that the mean scores of achievement in single digit addition skills of children with slow learners do differ significantly from before to after teaching with conventional method. Thus, the null hypothesis, that there is no significant difference between mean scores of achievement in single digit addition skills among students with slow learners who receives teaching through conventional method is rejected. It may, therefore, be said that Class II students with slow learner were found to have statistically significant in improvement in single digit addition skills. Further the mean score of achievement in single digit addition skills before the treatment is 12.23 which is not much lower than that of after treatment i.e. 13.57. It may conclude that using conventional method for teaching single digit addition skill among children with slow learner may give improvement in some extent.

Table 3: Group wise Mean, SD and independent t-values of achievement in single digit addition skills before the treatment

Group	N	Mean	SD	*df*	*t* - value
Group I: Treated with Direct Instruction strategy	5	12.33	1.7	8	0.1263
Group II: Treated with conventional method	5	12.23	0.48		

The two-tailed P value equals 0.9026
By conventional criteria, this difference is considered to be not statistically significant.
The 95% confidence interval of this difference: From -1.72649748784 to 1.92649748904

From table 3, it can be seen that the t-value is 0.1263 which is not significant. It means that before the treatment mean scores of achievement in single digit addition among the student groups do not differ significantly. Thus, null hypothesis, before the treatment, there is no significant difference between mean scores of achievement in single digit addition skills among students with slow learners who receiving direct instruction and conventional method is not rejected. It may therefore be said that before the treatment is given both the groups of students with slow learner were found to have same level of achievement in single digit addition skills.

Table 4: Group wise Mean, SD and independent t-values of achievement in single digit addition skills after the treatment

Group	N	Mean	SD	*df*	*t* - value
Group I: Treated with Direct Instruction strategy	5	16.82	1.94	8	3.7239
Group II: Treated with conventional method	5	13.57	0.25		

The two-tailed P value equals 0.0058
By conventional criteria, this difference is considered to be very statistically significant.
The 95% confidence interval of this difference: From 1.2374681709 to 5.2625318251

From table 4, it can be seen that the t-value is 3.7239 which is significant at 0.0058 level with df=8. It reflects that after the treatment the mean scores of achievement in single digit addition skills among groups of children with slow learners of Class II do differ significantly between children taught with direct instruction and conventional method. Thus, the null hypothesis, that there is no significant difference between mean scores of achievement in single digit addition skills among students with slow learners who receives teaching through direct instruction and conventional method is rejected. Further the mean score of achievement in single digit addition skills for group taught with direct instruction is 16.82 which is significantly higher than that of group taught with conventional method i.e. 13.57. It may, therefore, be said that both the groups of Class II

students with slow learner were found to have significantly improvement in single digit addition skills after receiving classes with direct instruction and conventional method. However, more improvement in the mean score among children who were taught with direct instruction method was observed.

Discussion

From the result it is reveal that using Direct Instruction method gives more positive influence then conventional method in teaching single digit addition skills to students with slow learners of standard 3. This finding supports the findings of Manalo E. et.al. 2000, and Mackenzie A, et.al., 2004, who claims that students who taught using direction instruction strategy achieved mathematical skills better than students who trained using traditional methods. The result shows positive influence of direct instruction strategy in learning single digit addition by children with slow learners at 3rd standard, it also supports the findings of Kaufmann P., and Thony B., 2003 as they claimed that direct instruction strategy has an impact on children with special needs.

Educational implications

On the basis of the experiences and observation made during the intervention programme, and result the followings are the some of the important implication in education

- Children of standard 3 with slow learners may learn better when the content is organized systematically and present in step by step simple instructions.
- An only meaningful material helps students to gain a clear concept of a matter.
- Students are motivated with Direct instruction strategy in learning a concept in a better way.

Conclusion

The result of the present study support many findings from the previous studies. The result shows that both the groups were showing significant improvement in their achievement in single digit addition skill. However, degree of statistical significance is proven more with the group who received intervention with direct instruction strategy. Therefore, it can be concluded that direct instruction strategy gives more positive influence in learning process of single digit addition skills at lower primary level for students with slow learners.

References

Dettori, Giuliana, & Ott, Michela. (2006). Looking Beyond the Performance of Grave Underachievers in Mathematics. Intervention in School and Clinic. Vol.41, No 4, 201-208

Kinder. D., Kubina, R., & Marchand - martella, N. (2005). Special Education and Direct Instruction: An Effective Combination. Journal of Direct Instruction, 5 (1), 1-36

Manalo, E., Bunnell, K., & Stillman, A. (2000). The use of process mnemonics strategies in teaching students with math learning disabilities Learning Disabilities Quarterly. 23, 137-166. http://dx.doi.org/10.2307/1511142

Mackenzie, A., Marchand, R., Martella, E., Moore, M., & Mantella, RC. (2004). Teaching Basic Math Skills to Pre School Using Connecting Math Concepts Level K. Journal of Direct Instruction. 4, 85-94

Kaufmann. P., & Thony, B. (2003). Evaluation of a numeracy intervention program focusing on basic numerical knowledge and conceptual knowledge: a pilot study. Journal of Learning Disability. 36, 564-573. http://dx.doi.org/10.1177/00222194030360060701