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**IMPACT OF REMEDIAL TRAINING INTERVENTION ON
ARITHMETIC ABILITY AND PSYCHOLOGICAL WELL-BEING OF
ACADEMIC POOR PERFORMERS STUDYING IN HIGH SCHOOL.**



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ABSTRACT:

To examine the effect of remedial training on arithmetic ability and psychological wellbeing of academic poor performer from high school. 100 eighth and ninth-grade students participated in a one year intervention program. The selection of the high school children is decided to investigate the effectiveness of the program in government schools. Objective of this programme was to investigate the effect of remedial training intervention on academic poor performers and to recommend possible actions to be carried out for improvement.

The group received a remedial program in addition to their regular classroom teaching (every day). Implemented remedial program proved to be effective with recovering mean score from 61.5, to 205.6 and SD 15.8 to 37.1 in arithmetic ability and $t = 36.7$, which is significant at 0.001 level.

In psychological well-being the mean score increased from 11.23 to 19.88 with SD, 2.4 to 3.81

and $t = 22.7$, is significant at 0.001 level.

The results of post test after remedial training intervention showed that students, made more progress in arithmetic ability. In addition, remedial intervention strengthened symptoms of psychological well being, than regular class room instructions. This implies that the remedial instruction had a more positive effect on students' arithmetic ability and psychological well being than the textbook-based instructions. This finding clearly indicates that remedial training intervention has positive impact on students arithmetic ability and psychological wellbeing.

KEYWORDS: Academic poor performer, remedial training, arithmetic ability, psychological wellbeing.

INTRODUCTION:

Academic performance is considered as a key criterion to judge one's total potentialities and capabilities. Therefore it is more pressing for the individuals/ students to have high academic performance. Good academic performance generally indicates the learning outcomes of pupil. Performance of those learning outcomes requires a series of planned and organized experiences. Good (1973), has defined, academic achievement as knowledge attitude or skill developed in the school subject usually designed by test scores or by marks assigned by teacher or by both. Consequently, academic achievement could be defined as self perception and self evaluation of one's objective success. Students with a weak foundation of mathematical understanding often demand more time and attention, and require supplemental instruction to ensure later successful learning (Burns, 2007). Remedial instruction should be provided to ensure students' academic success (Finnish National Board of Education, 2009). Therefore, appropriate remedial instruction is necessary for those students who tend to have learning difficulties. Moreover, better development in number sense may prevent children from having trouble learning future mathematics content (Jordan, Kaplan, Locuniak & Ramineni, 2007; Sood & Jitendra, 2007; Verschaffel et al., 2007; Yang & Wu, 2010). At the same time, several studies have indicated that many students lack number sense (Alajmi & Reys, 2007; Menon, 2004; Reys & Yang, 1998; Yang & Li, 2008).

Given the significance of remediation, a few late studies have attempted to set up the causal impacts of remediation utilizing semi test plans. Every study concentrates on understudies at the edge of going out of remediation.

Good academic record has by many researchers been found to increase the level of psychological Well-being and has the ability to energize and produce more positive mood. In a popular statement we can say that "achievement makes you feel good". If this would be the case we might expect that school children report higher levels of well-being. Ryff(1991) states that convergence of similar features of positive psychological functioning constitutes the core dimensions of psychological well being. Carol Ryff believes wellbeing can be described through a number of components: self-acceptance, personal growth, purpose in life, environmental mastery, autonomy, positive relations with others.

Psychological well-being is another describing important aspect of human functioning ranging from positive relationships, to feelings of competence, to having meaning and purpose in life (Diener et. al., 2010). Whereas the concept of emotional self-efficacy is related to the effective use of emotions by an individual. Emotional self-efficacy is a multidimensional concept and is composed of emotion regulation, understanding the emotions of oneself and others, perception of emotions and use of emotions to support thoughts dimensions (Kirk, Schutte, & Hine, 2008). Positive affect is defined as enjoying many emotions and moods and negative balance is defined as enjoying less emotions and

moods whereas affect balance can be defined as the balance between enjoying and not enjoying the various positive and negative emotions (Diener, 2000; Diener et. al., 2010). The increase of affect balance signifies that the individual experiences negative emotions less and positive emotions more (Diener et. al., 2010). In the light of this inference, affect balance can be thought of as the skill for balancing emotions arising due to negative and positive experiences. Whereas psychological well-being contains the cognitive and affective evaluations of an individual and signifies that he/she is satisfied of the emotions that he/she has less negative emotions and is highly satisfied of life (Diener, Lucas, & Oishi, 2002). Hence, it is anticipated that affect balance and psychological well-being have direct effects on happiness.

Effective scholastic execution improves self-regard (Bills, 1959; Carlton and Moore, 1966; Diller, 1954; Robinson, Kehle, and Jenson, 1986). Additionally, poor scholastic execution tends to crush down understudies' level of self-regard (Centi, 1965; Gibby and Gibby 1967). Self-regard assumes a pivotal part in mental wellbeing. People who are high in self-regard have a tendency to be at less hazard for discouragement (Crandall, 1973) and sadness (Abramson, Metalsky, and Alloy, 1989). Self-regard is a superior indicator of fulfillment with one's life than any target normal for people, for example, pay then again age (Diener, 1984). High self-regard has been involved in great psychological wellness (Baumeister, 1991; Bednar et al., 1989; Taylor Taylor & Brown, (1988).

Given this discussion, it is reasonable to believe that remedial instruction should be a good approach to help children improve self esteem, well being, confidence, and academic performance. The goal of remedial instruction was to study the effect of remediation on children with poor academic performance.

Objective:

The objective of the present study is to examine the impact of arithmetic remedial program on arithmetic ability and psychological well-being of high school students who were academically poor performers.

Hypotheses:

There is no significant difference in arithmetic ability of academic poor performers before and after remedial training intervention.

There is no significant difference in Psychological well-being of academic poor performers before and after remedial training intervention.

Sample:

A total of 100 (50 boys and 50 girls) high school students studying in grade 8th and 9th children with age ranging from 12 to 16 years who were poor at academics were selected for the present study. All the subjects were from government schools in and around Bangalore, Karnataka, India and poor academic performers were chosen based on their examination records (marks sheet). Apart from this information from teachers were also gathered in regard to their performance.

TOOLS:

Arithmetic Diagnostic Test: Developed by Ramaa (1994) was used to measure basic Arithmetic Ability. The test covers four major areas of arithmetic, namely number concept, arithmetic processes (operations)-Addition, Subtraction, Multiplication, Division, and Arithmetic Reasoning. The test-retest reliability was found to be..

Psychological wellbeing scale: Developed by Sudha Bhogle and Indira Jai Parkash (1993). It has Twenty eight items with different components of well being assessed in PWB questionnaire items are: meaningless, somatic symptoms, self esteem, positive affect, daily activities, life satisfaction, suicidal ideas, personal control, social support, tension, wellness, general efficacy and satisfaction.

Procedure:

The study involves government high school students. The principal of the school was approached, nature and the significance of the study was explained. Later permission was taken to conduct the study. Subsequently teachers of grade 8th and 9th were also explained the purpose of the study and information about poor academic performers was collected. Purposive sampling method was used to select the subjects for the study. Suitable testing schedule was fixed and rapport was developed with all the subjects. All the subjects were distributed socio demographic data and instructed to fill the same. Pre-test administration, remedial training and post-test were done in three sessions/stages.

Arithmetic diagnostic test and psychological well being tests were administered individually in a quiet room in a school premises.

Stage 1: In this stage arithmetic diagnostic tool and psychological well being tests were administered. Each tool was administered in two sessions.

Stage 2: Arithmetic remedial program was done for one academic year. Subjects were divided into ten different batches. Each batch consisted of ten children. Remedial training was given all weekdays which last for 40 minutes.

Stage 3: Arithmetic diagnostic tool and psychological wellbeing tests were re administered individually to test the impact of remedial training.

RESULTS AND DISCUSSION:

Table 1 shows Mean, standard deviation and t-value of children on arithmetic test and psychological wellbeing.

Variables	Pre-test (N=100)		Post-test (N=100)		t
	Mean	SD	Mean	SD	
Arithmetic Test	61.5	15.8	205.6	37.1	36.7***
Psychological wellbeing	11.2	2.4	19.8	3.81	22.7***

***Significant at p<0.001 level

Above table shows the mean and SD score in pre and post-test scores of group were found to be mean 61.5 SD 15.8 and mean 205.6, SD 37.1 respectively. The result showed that performance in arithmetic ability in pre test was very poor, after remedial training intervention, students made good progress in arithmetic ability, t=36.7, which is significant at 0.001 level. Thus the significant improvement observed in the group that underwent remedial training proved the effectiveness of the remedial program employed in the study. The obtained results are supported by several earlier studies, Razario and Kapoor, 1992, they used intervention strategies to remediate problems in four basic operations and result showed significant improvement in the performance of arithmetic tests in post test after remediation.

Another study by Gowramma and Ramaa in 2002 on dyscalculics also supported our study findings. Structured remedial intervention is more effective and impacted on children performance. They suggested structured intervention will also be very helpful for other students for other reasons, other than dyscalculia. Post test performance showed effectiveness of remedial intervention.

The obtained t-value of Psychological well-being Mean and SD in pre and post test 11.23, 2.4 and 19.88, 3.81 respectively and $t=22.7$, which is found to be highly significant at 0.001 levels. It shows that remedial training has significant effect on psychological well-being.

Similarly, above result supported by earlier researchers results, students with the highest wellbeing at one time point demonstrated the strongest academic performance (grade point average) and lowest rates of school absences one year later (Suldo, Thalji, & Ferron, 2011).

Another study by Bryan and Bryan, 1996 also supported this study finding. They studied impact of positive mood, self efficacy and math performance and the finding was when children performed well, their positive mood and self efficacy will improve automatically.

CONCLUSION

From the above results we can conclude that significant differences were found in arithmetic ability and psychological wellbeing after remedial training. Performance is inter related with several factors. Academic performance is a complex behaviour. Research has consistently shown that academic achievement is not an outcome of any single factor; rather it is the result of the interplay of a large number of factors (Gupta, 1993).

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