Developing a model for resource room training for slow learners in normal schools

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ABSTRACT

Background: A significant number of children with scholastic backwardness in normal schools are slow learners. The aim of the present study was to evaluate the effectiveness of an individualized education program (IEP) for slow learners, modeled on resource room training in normal schools.

Materials and Methods: 15 children with IQ in the 70–90 range were given individualized education for a period of 4 months. The children were divided into three equal groups and were given individualized training in reading, writing and mathematics for 5 hours a week in two sessions. The academic level of each child was rated before and after the training program by independent assessors.

Results: After the training, 87% of children had improvement in either mathematics, reading or writing and 47% had improvement in all the three areas. The overall academic improvement was statistically significant.

Conclusion: IEP will lead to improvement in academic functioning of children who are slow learners.

Key words: Individualized education, scholastic backwardness, slow learner, resource room training

INTRODUCTION

Kerala is one of the states with the highest literacy rates in India. Children’s education is a major concern and scholastic backwardness forms an important cause for referral to child guidance clinics in Kerala. A considerable percentage of children with scholastic backwardness who are referred for evaluation have no mental retardation, but score below average in standard IQ tests and may be grouped as slow learners.[1] A school-based study from Kerala found that 8–9% of primary school children scored below average in standard IQ tests.[2]

Recently, the state government appointed special teachers to government schools in Kerala to provide inclusive education to children with special needs. The effectiveness of the inclusive education program has not been fully evaluated. Effective utilization of the services of special teachers in normal schools will go a long way to improve academic functioning of children who are slow learners.

The aim of the present study was to evaluate the effectiveness of an individualized education program (IEP) modeled on resource room training for children who are slow learners.

MATERIALS AND METHODS

The study was conducted at the Child Development Services wing of the institute of mental health and neurosciences (IMHANS-CDS), Kozhikode, and the Prasanthi Center for Developmental Disabilities, Kozhikode. The prasanthi centre caters to the needs of children with developmental disabilities...
and is managed by a voluntary organization. The study was conducted with the support of the child development centre (CDC), Thiruvananthapuram, over a period of 4 months from December 1, 2008 to March 31, 2009.

Children attending IMHANS-CDS with scholastic backwardness, who satisfied the inclusion and exclusion criteria, were taken up for the study. Scholastic backwardness for this study was defined as repeated failures in all subjects or academic performance two classes below the class in which the child was studying at the time. The children were identified based on teacher’s reports and parents’ opinions.

The inclusion criteria were the following: 1) Children should be regular students attending normal schools. 2) Their IQ level should be between 70 and 90. 3) Parents should give consent for inclusion in the study and they should make arrangements to bring the child to the training center regularly during the training period.

Following children were excluded: 1. Children with emotional disorders like anxiety disorders or depressive disorders. 2. Children with hearing or visual defects and those with physical illnesses that may affect the training program.

The IQ level was determined by the Seguin Form Board test.\(^{[3]}\) A 5-level scale was designed to assess academic functioning [Table 1]. It included assessment of reading, writing and mathematical abilities.

Selected children were divided into three equal groups depending upon their academic functioning. They were given individualized education at the Prasanthi Center for Developmental Disabilities by a teacher with diploma in special education. Each child was given individualized education for 5 hours a week in two sessions. Training was given in reading, writing and mathematics, and classes were arranged in such a way that children could get sufficient time for leisure and rest in between.

The module of the IEP was chosen based on the current level of academic functioning of the child and the state school syllabus so that the same could be done in the resource room in normal schools by a special teacher. Normal school textbooks were used for teaching based on the academic level of the student. It is assumed that if a special teacher is appointed to a school, she will get at least 1 hour a day or 5 hours a week to give resource room training to children who are slow learners.

A parents’ meeting was convened at the beginning of the training and problems of each child were discussed. An awareness class dealing with scholastic backwardness and remedial measures to be taken at home was conducted. The level of academic functioning of all children were recorded using the academic evaluation scale for slow learners. The special teacher was not aware of the scores given by the initial assessor. At the end of 4 months of training, tests in reading, writing and mathematics were conducted and rated by a teacher who was blind to the initial scores.

Paired \(t\)-test was used to compare the academic functioning before and after the IEP.

### RESULTS

Although 25 children enrolled for the study, 10 of them dropped out and only 15 children completed the 4-month training program. Among them, 14 were boys and there was only 1 girl. The children were between 7 and 9 years of age. All children were regular attendees of primary school classes (between 1\(^{st}\) and 4\(^{th}\) standards) and the duration of schooling varied from 1 to 4 years with a mean of 2.8 years. Among the fathers, 6 (40%) had primary school education, 5 (33%) had secondary level education, 3 (20%) had completed pre-university education and only 1 (7%) was a graduate. Among the mothers, 8 (53%) had primary school education, 4 (27%) had secondary level education and 1 (7%) had completed

| Level | Reading | Writing | Mathematics |
|-------|---------|---------|-------------|
| 0     | Not able to read | Not able to write | Not able to write or read numbers. No concept about numbers |
| 1     | Can read letters only (child is able to read letters like “A, B, C, …”) | Can write letters only (child is able to write letters like “A, B, C …”) | A. Can count up to 10 or more but no number concept, but recite from memory |
| 2     | Can read simple words like cat, apple, amma, etc. | Can write simple words like apple, amma, etc. | B. Can write up to 10 or more from memory |
| 3     | Can read simple sentences (three- or four-word sentences like “I want milk”) | Can write simple sentences (three- or four-word sentences like “My name is Raju”) | C. Knows the concept of numbers (able to answer questions like “How many pencils are there?”) |
| 4     | Can read with difficulty (can read sentences but makes mistakes) | Can write but makes spelling mistakes and grammar mistakes | Can do simple (single-digit) calculations (like 5+6=11; 6-5=1) |
| 5     | Reading appropriate to the age | Writing appropriate to age | Can do two-digit additions and subtractions (like 15+16=31; 24–5=19) |
|       |         |         | Can do additions and subtractions and multiplications appropriate to the age, but makes mistakes |
|       |         |         | Age/class appropriate mathematical ability |
pre-university education. Only one was a graduate and one had professional education. One family belonged to the upper middle class group, 7 (47%) families to the lower middle class group and 7 (47%) families belonged to the upper lower class, as per modified Kuppuswami’s scale.\[4\]

Academic functioning at intake and after the training program is shown in Table 2. After the intervention, 87% of children showed improvement in either reading, writing or mathematics and 47% had improvement in all three areas [Table 3]. Paired t-test was done to compare the academic score before and after the training program. It showed significant improvement in reading ($P=0.001$), mathematics ($P=0.002$) and overall academic functioning ($P=0.001$) [Table 4].

**DISCUSSION**

Children who are slow learners struggle to cope with the academic demands of the regular classroom and have difficulty in writing, reading and mathematics.\[5\] Studies have shown that their academic functioning could be improved by structured individualized training programs.\[1,6\] The most important limitation of such training programs organized outside the school is that the academic improvement could not be replicated or sustained at school. To be sustainable, individualized training programs should be integrated with mainstream education.

In the present study, the training module was based on the normal school curriculum and the program was designed so that it could be replicated in normal schools. It is suggested that every school should have a resource room with facilities to provide remedial education to children with learning problems.\[7,8\] Resource room should provide appropriate remedial education to the child, taking into consideration his/her strengths and weaknesses. Seguin form board test is a simple test which could be used by a trained class teacher to assess the intelligence level of the child. Children identified as slow learners by the class teacher can be given remedial education in the resource room for fixed hours.

The present study shows that significant improvement in academic functioning could be obtained if the special teacher could give individualized training for at least 1 hour a day or 5 hours a week to each child.

**CONCLUSION**

IEP will lead to improvement in academic functioning of children who are slow learners. To be sustainable, the IEP should be integrated with the normal school curriculum. The present experiment can be a model for resource room training in normal schools.

**ACKNOWLEDGMENT**

The authors thank Dr. Ramakrishnan Palat, Director, Prasanthi Centre for Developmental Disabilities, Calicut and Mr. Mujeeb Rehman, Principal, Prasanthi school, Calicut for their help in organizing the training program.

**REFERENCES**

1. Krishnakumar P, Geeta MG, Palat R. Effectiveness of individualized education program for slow learners. Indian J Pediatr 2006;73:11-3.
2. Nair MK, Pejaver RK. Child development 2000 and beyond. Bangalore: Prism Books; 2000. p. 99-107
3. Bharath R. AIISH norms on SFB with Indian children. J AIISH 1971; 2:34-9.
4. Kumar N, Shekhar C, Kumar P, Kundu AS. Kuppuswamy’s socioeconomic status scale-updating for 2007. Indian J Pediatr 2007;74:1131-2.
5. Karande S, Kanchan S, Kulkarni M. Clinical and psychoeducational profile of children with borderline intellectual functioning. Indian J Pediatr 2008;75:795-800.
6. Malik S. Effect of intervention training on mental abilities of slow learners. Int J Educ Sci 2009;1:61-4.
7. Senf GM. Learning Disabilities. In: Grossman HJ, editor. Pediatric clinics of north America. symposium on learning disorders. Vol. 20. Philadelphia: WB Saunders Company; 1973. p. 607-38.
8. John P, George SK, Mampilly A. Handbook on poor school performance, New Delhi: Central Board of Secondary Education; 2001. p. 50-6.

**Source of Support:** The study was conducted with financial support from the Child Development Centre, Thrusvananthapuram,

**Conflict of Interest:** None declared