

# Effectiveness of visual auditory kinesthetic tactile technique on reading level among dyslexic children at Helikx Open School and Learning Centre, Salem

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## Abstract

**Background:** Each and every child is special, born with a unique talent to explore this world. The word *dyslexia* is derived from the Greek language in which *dys* means “poor” or “inadequate” and *lexis* means “words” or “language”. Dyslexia describes about a different kind of mind, which is often gifted and productive, that learns the concept differently.

**Objectives:** The main aim of the study was to bring the positive outcome of the reading level by examining the effectiveness of visual, auditory, kinesthetic, and tactile (VAKT) technique on reading level among children with dyslexia studying at Helikx Open School and Learning Centre.

**Materials and Methods:** A Quasi-experimental one-group pretest–posttest design was adopted for this study. The reading level was assessed by using the Schonell Graded Word Reading Test. Thirty subjects were drawn by using purposive sampling technique and the intervention VAKT technique was used for children with dyslexia for 30 consecutive days followed by the post-reading level assessment, which revealed the improvement in the mean score value by 12%.

**Results:** Multisensory (VAKT) teaching uses all learning pathways in the brain (visual, auditory, kinesthetic, and tactile) to enhance memory and learning and the ability of uplifting emotional, physical, and societal dimensions.

**Conclusion:** VAKT is an effective method to improve the reading skill of the children with dyslexia, which ensures the enormous significance of learning, thereby influencing the wholesomeness of the child’s life.

**KEY WORDS:** Visual-auditory-kinesthetic-tactile technique, reading level, dyslexic children

## Introduction

The word *dyslexia* is derived from the Greek language in which *dys* means “poor” or “inadequate” and *lexis* means “words” or “language.” Dyslexia is a specific learning disability that is characterized by problems in expression or reception, oral or written work, which may emerge in reading, speaking, spelling, listening, and writing. Dyslexia describes about a different kind of mind, which is often gifted and productive, that learns the concept differently. It is neurological in origin, characterized by difficulties in accuracy of words, in identification or fluency of word recognition, and poor spelling and decoding abilities.<sup>[1,2]</sup>

Research indicates that dyslexia is caused by biological factors and leads to frustration and discouragement, which in turn may become responsible for poor social relationships and affect the individual’s personality due to anxiety, anger, disturbed self-image, low self-esteem, and depression (International Dyslexia Association).<sup>[3]</sup>

Various researches proved that multi-sensory (visual, auditory, kinesthetic, and tactile (VAKT)) teaching uses all learning pathways in the brain (visual, auditory, kinesthetic, and tactile) to enhance memory and learning.<sup>[2]</sup>

The prevalence rate is more among males than in the female due to the biological basis, but there is also strong evidence that suggest that it is genetic in origin. There is literally a difference in brain architecture that produces changes in functional organization of the brain for language.<sup>[4]</sup>

In the world, 15% of the children have dyslexia, of which 4% have a severe disorder and 10% have mild form. Every year 120,000 additional children are found to have learning disability. In India, it is 3%–17.5% among the school-going children. Other studies have also reported that males are more affected than females (1.6:1).<sup>[3]</sup>

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The problem includes emotional, physical, and societal dimensions. At home, it arises when the comparison of a dyslexic child is made with a normal child, and there is lack of parental support. In schools, it may be attributed to inferiority complex and poor academic performance. Building a negative self-image, feeling of powerlessness and incompetence, and teasing by other children in the class also lead to lack of initiation in activities. These children are less accepted by their peer group and show awkward behavior in social situations. The societal dimensions manifest themselves in poor understanding of the social cues, poor communication skills, stammering, isolated outlook, with the child behaving like a showpiece and gradually feeling like an ill-treated and a noted child.<sup>[3]</sup>

The multisensory approaches and G. Fernald's "tracing" method, which is also known as the VAKT technique, are well described, and research shows their effectiveness. When the technique was applied among the children with dyslexia and the results were obtained after 4 weeks, including all the tasks such as reading, spelling, and story writing, the student's motivation for reading was found to increase. Thereby, the applicability of multisensory approaches is considered in the school setting.<sup>[5]</sup>

The study was conducted with a view to assess the effectiveness of VAKT technique on the reading level among the children with dyslexic in Helikx Open School and Learning Centre, Salem. The following were the main objectives:

1. To assess the reading level of children with dyslexia.
2. To assess the effectiveness of VAKT among children with dyslexia

### Hypothesis

$H_1$ : There is a significant mean score difference in the reading level of children with dyslexia before and after implementing the VAKT technique at the level of 0.05.

### Conceptual Framework

Conceptualization means framing of ideas, which utilizes and forms an outline for the study. This study was based on the evaluation model described by Daniel.<sup>[6]</sup> This model requires evaluation of context, input, process, and product in identifying and judging a program value. In this study, this model was used to evaluate the reading level of children with dyslexia and the effectiveness of VAKT technique [Figure 1].

### Materials and Methods

A quasi-experimental one-group pretest–posttest design and quantitative approach was selected to carry out the study. The study subjects comprised of 30 children with mild dyslexia, selected by the purposive sampling technique. The tool used for the study consisted of two parts: Part A: Demographic Profile and Part B: Schonell Graded Word Reading Test developed by Sir Fred Joyce Schonell (1960)<sup>[5]</sup>. He developed the tool with 100 words that were used to assess the reading age of the child based on the number of the words consecutively read by the child. The supervisor stopped at the error of 10th consecutive misspelled word and the corresponding reading age was

**Table 1:** The mean, standard deviation, mean percentage, mean difference, and *t*-value before and after intervention on reading levels of children with dyslexia (*N* = 30)

Intervention	Mean	Standard deviation	Mean %	Mean difference	<i>t</i> -Value
Before	8.107	1.3674	58	1.706	3.66*
After	9.813	1.1956	70		

\*Significant at 0.05 level.

calculated with the help of a scoring sheet. Then VAKT technique was implemented. The study was conducted in Helikx Open School and Learning Centre, Salem, Tamil Nadu.

### Results

The frequency and percentage distribution of demographic variables of children with dyslexia is shown in Table 1.

The findings show that 33% of participants were of 13 years of age and the gender distribution reveals that all were males. No females were included. None had any history of dyslexia among family members; 52% of fathers and 40% of mothers were educated up to higher secondary level; and 97% of children were living with both the parents. Out of the total, 3% children were staying with single parent. Regarding employment, 90% of fathers were self-employed and 94% of mothers were homemakers. The status of family income was less than Rs. 20,000 per month for approximately 67% children.

The finding shows that the level of reading improved from the reading age of 8.1 to 10.0. The mean percentage of reading level is improved by 12% after the intervention. It also shows that there is a significant statistical difference before and after the intervention at the level of  $p < 0.05$ . This shows that VAKT technique is significantly effective in improving the reading level among the children with dyslexia.

### Discussion

Saroj<sup>[5]</sup> conducted a similar study on the multisensory approaches and G. Fernald's "tracing" method, which is also known as the VAKT technique. It is well described, and showed its effectiveness when the technique was applied on the dyslexic children and results were obtained after 4 weeks. The results include all the tasks such as reading, spelling, and story writing. The student's motivation for reading also was found to be increased. Thereby, the applicability of multisensory approaches is considered in the school setting.

A similar intervention was used in this study to improve the reading level of the children with dyslexia. The mean score reading level of the dyslexic children before the intervention was 8.1 and the reading level after the implementation of the intervention was 9.8. The mean percentage was increased by 12%, which shows that there was an improvement in the reading level. Thus, the research suggests that these interventions are successful in improving the reading level of the students with learning disabilities.

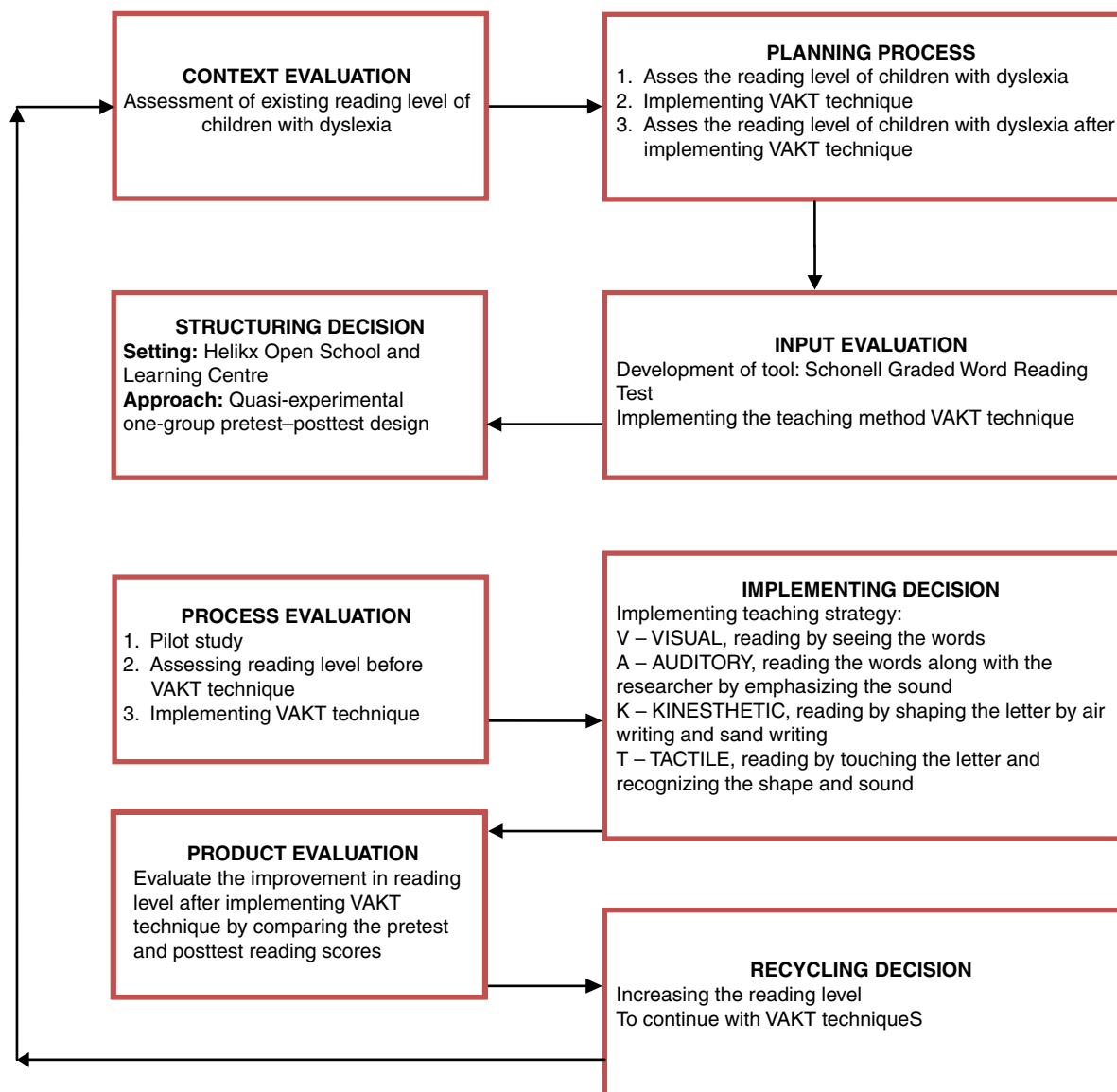


Figure 1: Conceptual framework based on Stuffle Beams evaluation model.<sup>[6]</sup>

### Implications

#### Nursing Education

The children with specific learning disability can positively gain by such education. The psychiatric nurse can effectively concentrate on all the dimensions especially on strengthening the mental health status to improve a child's self-esteem. Hence, the importance of special instructional programs such as VAKT technique must be reinforced in the management techniques as remedial measures for child psychiatric problems.

#### Nursing Practice

The study findings would help the psychiatric nurse to develop an insight into the magnitude of learning disability and effectiveness of VAKT technique as the instructional program

in improving the reading level among the children with specific learning disability. Therefore, it must be used in the in-patient child psychiatric units. This technique can be implemented along with the routine nursing care in the specific time similar to that of any other therapy administered in the ward.

#### Nursing Administration

When the special instructional program advances, the administrator has the responsibility of providing nurses with substantive certification program regarding the VAKT technique as a part of the continuing nursing education session or the in-service education program. Hence, the administrator can draw written policies regarding the training of this instructional program for the nurses in the hospital.

### *Nursing Research*

The study has tested the effectiveness of VAKT technique on reading level among children with dyslexia. Similar studies can also be undertaken for the children with specific learning disabilities at different levels of dyslexia such as mild, moderate, and severe.

### **Recommendations**

1. A comparative study can be conducted on reading level with two instructional programs such as VAKT and graphic organizers.
2. A training program for VAKT technique can be conducted for the teachers in the primary school.

### **Conclusion**

Dyslexia is the most recognizable and specific learning disability typically associated with a child's inability to spell, to read, and to write. The problems include various dimensions that affect the wholesome of children's life. Various instructional programs were available for the children with the specific learning disability. Among that, VAKT technique was found to be specifically effective in improving the reading level.

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