

Inclusive Education in India: A Developmental Effort to Inclusion

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INTRODUCTION AND CONCEPTUAL FRAMEWORK

Backdrop of the study Dyslexia is a Specific Learning Disability (SpLD). Dyslexics have persistent difficulties in learning to read and developing reading skills. Reading is a fundamental skill in which students have to master to acquire knowledge and information. Therefore, failure in learning to read leads to poor academic performance (Karande & Kulkarni, 2005) which will ultimately ends up in turning the student into school dropouts (Thacker, 2007; Lyon, 1996). If such students were identified at an early stage as dyslexics or “At risk of dyslexia”, their reading difficulties could be minimized through appropriate remedial reading interventions (Torgesen, 2002; Scammacca, et al., 2007; Fletcher et al., 2007; Pennington, 2009) and they could be prevented from developing into severe dyslexics.

Dyslexia is one of the most serious issues that needs to be addressed, as in India it is estimated that 10-14% of school going students are diagnosed and suffering from Specific Learning Disabilities (Krishnan, 2007; Krishnakumar, 1999; Mehta, 2003). The researchers reported that at least five students in an average sized classroom have SpLD (Thomas, Bhanutej, & John, 2003). Dyslexia was found to be one of the most common SpLD, affecting 80% of all those identified as having Specific Learning Disabilities (Karande, et al. 2005). Research studies documented that there was a lack of awareness about SpLD in India (Karande, Mehta & Kulkarni, 2004; Crawford, 2007, Ramaa, 2000). There was a shortage of facilities for remedial teaching to the students with SpLD because of the lacunae of trained teachers to teach the students with dyslexia and SpLD (Karande, Mahajan & Kulkarni, 2009; Rajakumar et al., 2005). The remedial training facilities for these children were available in some of the megacities like Mumbai, Kolkata, Bangalore, New Delhi and Chennai (Karande, 2008). In spite of this, these services were not affordable for many parents because the cost of remedial training ranges from Rs. 250 to Rs. 500 per session (Karande & Gogtay, 2009; Karande, Mehta & Kulkarni, 2004). More than that, these facilities were not made available to rural children with SpLD, specially those who studying in their mother tongue.

Significance of the Conceptual Framework and its Operation

A conceptual framework describes the link between the variables. In this context, the conceptual framework analyses the link between the variables used in the present study. This interlink helped the researcher to operate the variables. The following variables, like at risk of dyslexia and their problems in reading, components of reading and appropriate reading intervention were conceptually operated by the researcher based on the insights gained from the conceptual framework.

Definitions of Dyslexia

The researcher found that there were many definitions of dyslexia quoted in the related research studies. The researcher selected the below two famous definitions which is most related to the present study. The definitions are, Dyslexia is “evident when accurate and fluent word reading and/or spelling→ develops very incompletely or with great difficulty. This focuses on literacy at the word level and implies that the

problem is severe and persistent despite appropriate learning opportunities” (The British Psychological Society [BPS] (1999, p.18).

Theories of Dyslexia

Based on the causes, the theory of dyslexia is classified into three major deficit theories. These deficit theories are

- (i) the phonological theory which explains the abnormality in speech sound processing
- (ii) the cerebellar theory which explains abnormality in the brain function as a causal factor for dyslexia in individuals and
- (iii) the magnocellular (combination of visual and auditory deficit theory) theory which explains the dysfunction in neuro-physiology and neuro-anatomy.

The last two theories are concerned with the biological aspects of dyslexia, whereas, the phonological theory is very closely related to the language aspects i.e. speech sounds. Many studies found that dyslexics have major problems in speech sound processing which in turn affects the reading processes, which be remediated with appropriate remedial intervention. In this line, the researcher designed an intervention which comprises of phonological components.

Objectives of the Study

The aim of the present study is to improve at risk of dyslexic students’ reading performance in English through multisensory strategic orientation supplemented with technology. In order to achieve the aim, the following objectives are set to be accomplished:

1. To identify the students at risk of dyslexia studying in the Government Tamil→ Medium Schools of Patna region at the primary level.
2. To standardize “At Risk of Dyslexia Screening Tool (ARDST)” to identify at→ risk of dyslexic students.
3. To diagnose the reading difficulties in English of students at risk of dyslexia.

Hypotheses of the Study

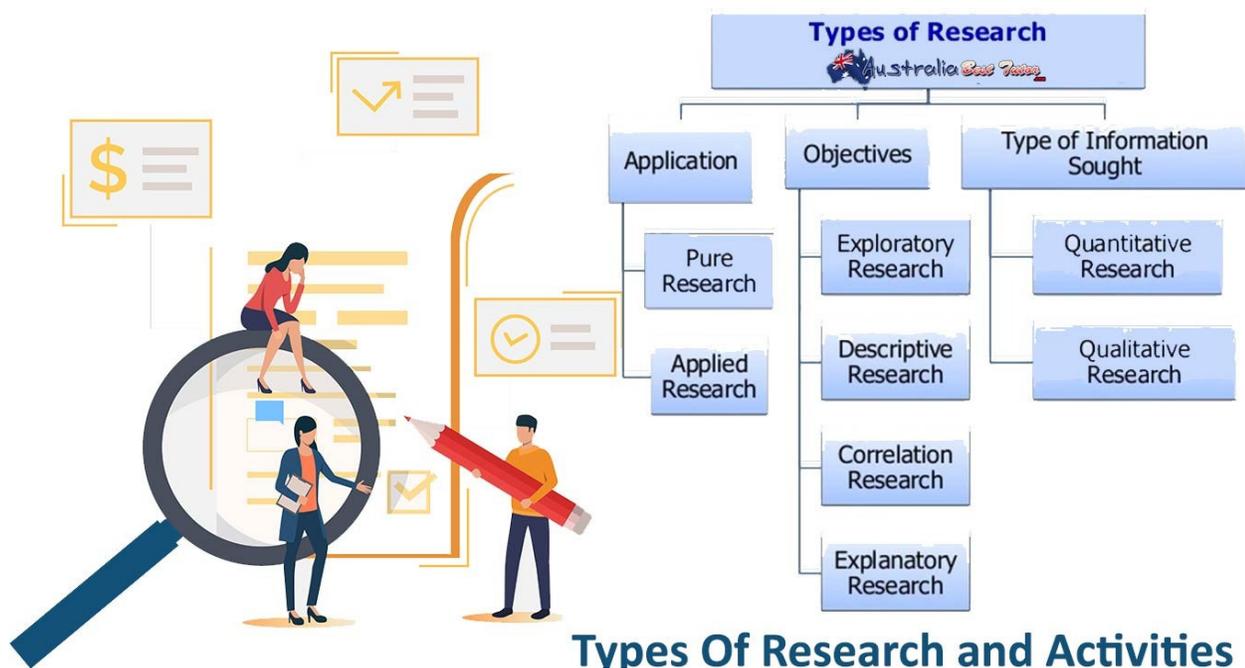
A hypothesis is a prediction the researcher makes about the expected relationships among variables (Creswell, 2007). For the accomplishment of the objectives, the hypotheses of the present study were formulated based on the previous research findings and review of similar studies in the field of inquiry, and to achieve the targets of the present work

1. Students of Experimental group and Control group do not differ significantly in their reading performance in English in the pre-test.
2. Students of Control group do not differ significantly in their reading performance in English between the pre-test and the post-test.
3. Students of Experimental group do not differ significantly in their reading performance in English between the pre-test and the post-test.

Research Design of the Study

The research design is the conceptual structure of the research procedure. It provides planning on selection of subjects, data gathering devices and data analysis techniques in relation to objectives of research. Burns and Grove (2010) defined a research design as “a blueprint for conducting a study with

maximum control over factors that may interfere with the validity of the findings”. The research design of the study was schematically represented.



Operational Definition of the Key Terms

The operational definition describes how the variables have been operated in the present study in a measurable term by the investigator. The operational definition of the key terms is as follows:

At Risk of Dyslexia

In the present study, the term at risk of dyslexia refers to the students who are inconsistent and have deficits in alphabet knowledge, reading, phonological awareness and writing. Reading Performance For the present study reading performance refers to the scores gained by the students in reading performance test which consists of alphabet knowledge test, phonological awareness test, word recognition test and oral reading fluency test.

Sample for the Study

The sample for the present study consisted of students who are at risk of dyslexia studying in standard III in a government school located at Gandhi maidan in Patna region. The rationale for selecting this particular government school was that large numbers of students with specific learning disabilities were identified by the Directorate of School Education, Patna through Sarva Shiksha Abiyan (SSA) programme.

Quantitative Research Method: Design of the Experimental Method

The first phase of the study, a quasi experimental design with Pre-test Post-test control group design was adopted to verify the efficacy of multisensory strategic orientation supplemented with technology to develop the reading performance of students at risk of dyslexia.

The rationale of this design was to gather empirical data in order to estimate the effectiveness of the multisensory strategic orientation and allow outcomes of the control and intervention group to be compared. From the review of related studies the researcher found that many researchers adopted the pre-test post-test control group design to study the effectiveness of remedial reading interventions to dyslexics (Torgesen, et al., 2010; Nisha & Kumar, 2013; Hatcher et al., 2006; Khan Zeenat & Dandegoankar, 2014; Joshi, et al., 2002; De Graaff, et al, 2009; Oakland, et al., 1998; Giess, 2005; Wilson & O’Connor, 1995). National Reading Panel (2000) conducted meta-analysis of the empirical studies carried out in the field of dyslexia and emphasised the use of pre-test post-test control group design.

Statistical Test Used

The non parametric statistical tests were used to analyses the collected no normal distributed data. Each non parametric statistical test was selected based on the fulfillment of its assumptions. The following were the statistical test used to test the hypotheses:

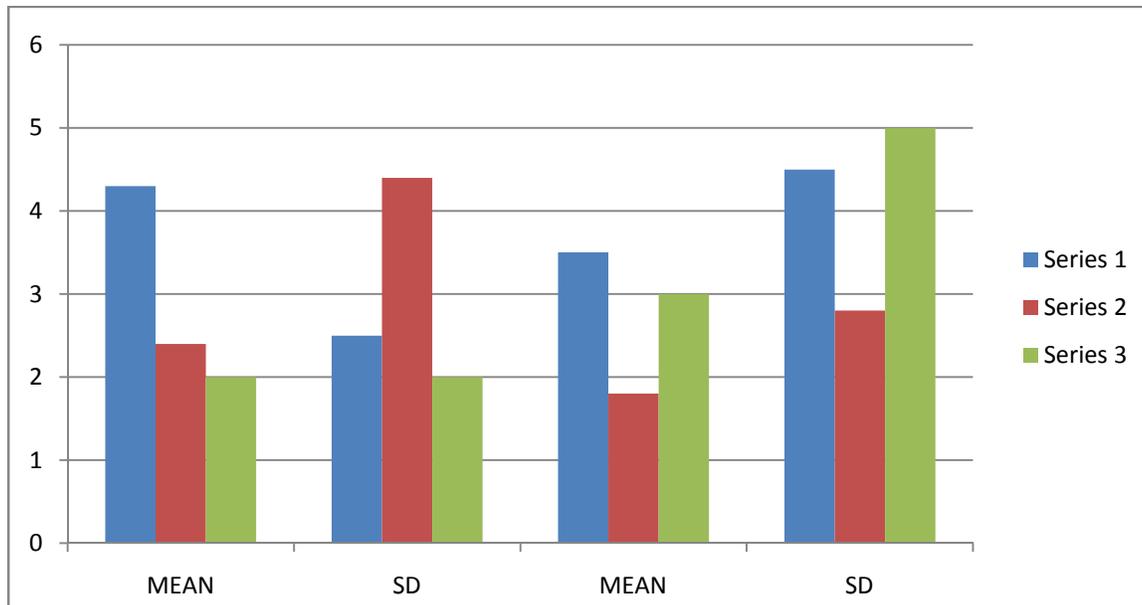
- i) Mann-Whitney U Test: used to find out difference between two independent variables and it is equivalent to unpaired ‘t’ test.
- ii) Wilcoxon Signed Rank Test: used to find out difference between two dependent variables and it is equivalent to paired ‘t’ test.
- iii) Friedman’s Test: used to find out difference between more than two dependent variables and it is equivalent to one way ANOVA Repeated Measures.
- iv) Spearman Rank Correlation: used to find out relationship between two variables and it is equivalent to Pearson Product Moment Correlation.
- v) Pearson’s r Effect Size: used to find out the effect size for non-normal distributed data and it is equivalent to Cohen’s d Effect Size.

PRE TEST

GROUP	N	MEAN	MEDIAN	SD	SKEWNESS	KURTOSIS
CONTROL GROUP	16	43.3	42.5	3.67	.374	-1.10
EXPERIMENTAL GROUP	16	43.1	44	3.89	-.614	.313

POST TEST

GROUP	N	MEAN	MEDIAN	SD	SKEWNESS	KURTOSIS
CONTROL GROUP	16	44.37	44.5	3.95	.239	-.057
EXPERIMENTAL GROUP	16	107.8	108	6.29	.420	-.466



Findings of the study

The following are the findings that are obtained by testing the hypotheses quantitatively and by answering the research questions qualitatively:

1. Students at risk of dyslexia of Control group and Experimental group did not differ significantly in their reading performance in the pre-test. The students in the Control group and the Experimental group were found to have similar level of reading performance in English before the experimentation.
2. Post-test score of students at risk of dyslexia of Control group in their reading performance was not significantly greater than that of the pre-test. Hence the traditional method of teaching was not found effective in enhancing the reading performance of students at risk of dyslexia.

Discussion

A number of research studies stated that students with dyslexia and at risk of dyslexia have persistent difficulties in acquiring reading skills (Fletcher, et.al., 2002; Crombie, 1997). These students need to be provided appropriate reading interventions (Reghu, Cadathuz, Dileep, Roshni and Vijayan (2014); Snowling, 2013; Vellutino, et al., 2006) in order to minimize their problems in learning to read and develop their reading performance. Researchers namely Ramaa (2000), Torgesen, et.al (1999), Ball and Blachman (1991) and Hatcher et al. (2004) have suggested that students with dyslexia and at risk of dyslexia should be given appropriate reading intervention to improve their reading performance. The present study has taken cognizance of the suggestions and attempted to develop a multisensory strategic orientation for enhancing the reading performance of the students at risk of dyslexia.

Conclusion

Questions about how to teach reading to students at risk of dyslexia have been with us for a very long time. Despite truly significant advances in our understanding of the nature of dyslexia and of the reading process itself, there remain large gaps in our knowledge about how to assist at risk of dyslexics to learn to read effectively. What the researcher observed in the present study and other research studies were that multisensory strategic intervention of the right nature and intensity can improve the reading performance

in English of students at risk of dyslexia at primary level. The multisensory strategic intervention will be of great help for alleviating the reading difficulties of students at risk of dyslexia at primary level.

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