Validation of Screening Checklist for the Children with Specific Learning Difficulties Consistent with Pakistani Norms

Tariq Mahmood Khan* and Ahmed Sher Awan* 

Abstract

This paper delineated the development and validation of the diagnostic tool for children with specific learning difficulties in Urdu language among the students in mainstream classrooms. Teachers of class six and seven (both boys and girls students) of Govt. schools of Lahore city teaching Urdu subject constituted the population of the study. A sample of 202 teachers was given Screening Checklist to screen out the students with below 30% achievement in Urdu and average IQ. About 1013 students were identified through this tool and with the help of other procedures of the identification of SLD as discriminate analysis with achievement and IQ scores. Purposive sampling technique was adopted based on Ability IQ test, achievement in Urdu subject and other associated problems observed by the teachers. Validity of the Screening Checklist was established with content and Rotated Component Matrix of the Confirmatory Factor Analysis methods. Reliability of the Screening Checklist was determined with Cronbach Alpha. The conclusions of the research reflected that the Screening Checklist had good content and factorial validities. Similarly, the instrument had good reliability in terms of internal consistency.

Keywords: Specific learning difficulties, mainstream schools, screening checklist, ability IQ, purposive sampling, achievement in urdu, factorial validity

*Assistant Professors, Institute of Education and Research, University of the Punjab Lahore
Email: drtariq@dr.com
Introduction and Background of the Study

Different procedures are adopted to assess the children for SLD in the world. Prior (1996) suggested six essentials in the assessment of SLD that include intelligence, academic achievements, language abilities, attention and memory, visual, spatial, and motor speed capacities. Dyslexia Association of Ireland (2003) has given criteria for the psycho-educational assessment of the dyslexia. In this assessment, in addition to hearing and sight testing, teacher report is also considered helpful. Bangor Dyslexia Unit (2002) offers preliminary screening and then assessment services carried out by Chartered Educational Psychologists. Blamires (2003) has recommended the diagnosis of SLD to see the extreme discrepancy between academic performances particularly in language reading or spelling and standardized tests of cognitive ability.

Children with SLD face speech delay and difficulties among children with SLD (Clark, Stackhouse and Snowling as cited in Riddick, 1995). Although Snowling and Stackhouse (as cited in Riddick 1995) differed to some extent, in their studies, included “informal indication” such as late speech, sentence formation difficulties, simple word pronouncing difficulties, like saying “mum” or “dad”, and unclear voice. Augur (as cited in Riddick, 1995) included motor difficulties as an additional related sign for SLD identification. Problem in learning nursery rhymes, poor short-term memory, difficulty in learning new names, letter identification problem and disliking for reading books are also the signs of SLD.

There are obvious reading and writing problems in these children. They are slow and face some more difficulties. Slow speed of work, copying from board, reading and dictation problems are frequently seen with these children in school (Riddick 1995). In primary age they showed confusion with left and right, difficulty in saying a word, problem in doing subtraction, difficulty in learning tables, recalling digits, and recalling months of the year (Miles & Miles 1990).

Smith’s (as cited in Alper, Ryndak & Schloss, 2001) Teacher Diagnosis of Educational Difficulties was also a source, which included the area of spelling, reading, written expression, speech and language, arithmetic and personal emotional-social skills. Dyslexia Association of Ireland (2003) has given the following criteria for the psycho-educational assessment of the dyslexia: 1- to get in touch with the child's school, which may have the opinion that a problem exists; 2- there should be tests of the child's hearing and sight to ensure that there is no problem of acuity; 3- Organize a psycho-educational assessment through a practiced psychologist. It is useful to know how much an individual has actually understood of what he has just read. They further described, “A measure of a child’s comprehension of text is also valuable in diagnosing difficulties” (P: 113-14). Comprehension of language can be examined by a number of methods. These methods include ability to copy, ability to
take dictation, ability to assess the accuracy of spellings and speed. Free writing may also be judged. Pollock and Waller (1995) described some typical SLD reading mistakes, such as to read very slowly and show hesitations, follow a list with his finger, and lose places by missing word chunks.

The diagnosis aims at determining the nature, source of a person’s abnormal behaviour and classifying the behaviour pattern within an accepted diagnostic system (Gregory, 1996). There is a diagnostic system for comprehensive testing to link students’ learning abilities to their school achievement. This system has several advantages: one is accurate comparison of scores and second is convenience. This diagnostic system provides derived scores for all measures in various domains assessed in the diagnostic system; it provides more accurate comparisons of a person’s performance in different domains which is based on the same group, and the derived scores are in the different domains; it also provides a comprehensive screening and assessment methods along with the national norms and socio-cultural norms for comparison (Salvia & Ysseldyke, 2001).

Assessment of children with SLD is not so simple. Their problems in reading and writing are multi-faceted. Students with SLD come from different backgrounds which interact with their difficulties. Assessment of children and adults should be made with different measures. Turner (2000) suggested that in some children early signs of SLD are overcome with some effort or behavioral modification but not seen at adulthood although being SLD. Bryant and Bradly (as cited in Riddick, 1995) depicted same features in three and four years age children who were at risk but not bad for rhyming. They recommend that the child should not be diagnosed as SLD he/she is seven years old.

Evaluations include standardized testing of intelligence and academic performance as well as additional diagnostic procedures for determining the specific nature of literacy and mathematics development. Classroom observations are conducted on requirement basis. Assessment packages include parent and teacher conferences, written reports detailing assessment results, diagnostic impressions, and recommended intervention plans (Trevatha, 2001).

For diagnosing, screening and assessment, it is suggested that Chartered Educational Psychologists should carry out assessment for SLD. It may be conducted throughout the age range from preschool children to adults and referred for additional assessment if needed (Bangor Dyslexia Unit, 2002). Dyslexia A2Z Assessment and tests website gives the tests such as Aston Index Assessment (AIA) 5-14 years, Cognitive Profiling System (Cops) 4-8 years, Dyslexia Early Screening Test (DEST) and Dyslexia Adult Screening Test (DAST) 16:6 years for the assessment of SLD (Dyslexia A2Z Assessment, 2002).
Detailed assessment is needed in the area of intellectual and cognitive abilities for SLD diagnosis as suggested by Prior (1996) that “it is the best to begin with a test of intelligence and problem solving abilities” (p. 67). He further recommended that psycho-educational assessment must cover at least six main factors: intelligence, academic achievement, language abilities, retention, memory, visual, spatial and motor speed capacities. Hornsby (1984) further recommended the use of Differential Aptitude Scales (DAS). Similarly, British Ability Scale (BAS) are used for certain specific problems of the individuals with poor concentration and bad at copying.

Pollock & Waller (1995) has recommended Raven’s Standard Progressive Matrices as a measure of IQ for the identification of children with SLD. There are two sorts of Raven Matrices one is Raven colored progressive matrices, for 11 years children and another is Raven’s standard progressive matrices that may be administered to six year old and adults.

In special education assessment, the WISC–III is often used to estimate the strengths and weaknesses in verbal and performance areas of aptitude. It was standardized including students with learning disabilities even while receiving special services in the school setting (Wechsler, 1992).

For SLD diagnosis and assessment, measures of IQ are not enough and some other tests are also used. Woodcock Reading Mastery Tests- Revised (WRMT-R 1987) is used to pinpoint student’s weaknesses and strengths in reading. Its form (G) contained Visual Auditory Learning, Letter Identification and Supplement Letter Checklist of Reading Readiness which are commonly used for SLD diagnosis. Test of Written Spelling -2 (TWS-2) is used for spelling skill. Both of the subtests are standardized dictation tests (Gregorey, 1996). Test of Written Language -2 (TOWL-2) consists of 16 subtests and is used for reading and writing skills. It is also a standardized test (McLoughlin & Lewis, 1994).

While adopting these procedures, description of the nature and problem extent were highlighted. It became the source of specific advice and remediation. There should be a list of the child’s previous and existing problems before going to take up the assessment meetings. Teacher’s report is equally useful in this process.

This is possible only when there is a suitable procedure and system for diagnosis according to the local norms. These comprehensive diagnostic procedures will be helpful for the identification of the specific learning difficulties as well as it would be helpful for remedial teaching. It will ensure success in the academic work as well as in life of the exceptional. It would be an easy approach, a comprehensive technique and useable system for the special education and regular school teachers. For the differential diagnosis of these problems, specialized assessment is necessary which is possible at school age.
**Content Validity**

Content validity of the tests was determined through judgments of the experts. A panel of experts with long experience of teaching Urdu language at school level and having expertise in educational and psychological test construction were consulted. Content, items and paragraphs of the tests were finalized after endorsement of the experts’ recommendations.

**Concurrent Validity**

Concurrent validity of the tests was determined by selecting the scores in Urdu and ability IQ test. Raven progressive metrics was used for IQ. Students’ achievement scores in the subject of Urdu and IQ scores were taken as criterion for determining the validity of different tests of the Test Battery. Although the reliability as well as sampling validity of achievement test used by the class teachers, was not known, in the absence of standardized achievement tests, Urdu achievement scores were the best available criterion.

**Construct Validity**

Exploratory factor loading were got with the help of factor analysis to map out the important variables of the Screening Checklist and SLD Test battery. Sub-tests were selected from the exploratory factor loading of the Screening Checklist and SLD Test battery and finalized with the help of confirmatory factor analysis.

**Discriminant Validity**

The discriminant validity was determined for Screening Checklist making two categories of low scores (0-14) and high scores (15-21) in pilot testing on achievement scores in Urdu. In further study, the Screening Checklist was improved and factors were selected with good and sufficient loading. The discriminant validity was then determined for Screening Checklist making two categories of low (0-7) and high scores (8-13) with achievement scores in Urdu and with the score of each test of the Test Battery.

The convergent validity of tests of the Test Battery was established with ability IQ test scores and achievement scores in Urdu. Scores on each test of the Test Battery were divided into two categories, low scores and high scores.

**Reliability**

Internal consistency and stability measure were used to determine the reliability of the tests. Internal consistency of the factors was established through Cronbach alpha. Test-retest reliability method was used to determine stability reliability of the tests.
Validation of Screening Checklist for the CSLD Consistent with Pakistani Norms

Methodology

A screening checklist was prepared for the children with specific learning difficulties in Urdu to diagnose the disabilities and associated problems. Validity of screening checklist was established in terms of content and factor analysis. Cronbach’s alpha coefficient was used as determinant of reliability. A Screening Checklist was prepared for teachers to screen out the SLD’s in the definitional perspectives of Specific Learning Difficulties. It included the observations for the physical problems of vision and hearing. This checklist was prepared for teachers based on common observation of the children with specific learning difficulties.

The Screening checklist consisted of two parts. Part A consisted of four basic assumptions which were true for the identification of SLD and part B consisted of 21 statements, and five factors termed as Low self Esteem, Sequencing, Attention Deficit, Reverse Retention and Skipping about different problems of the students in the regular classroom with average achievements and average ability IQ score.

Population and Sample

Each school was considered as a cluster. Cluster sample was selected from the population. These clusters were randomly selected, 40 male and female government schools were selected for the study. In each school, teachers were consulted and purposive sample from the students was selected. Those students who were with problem in one or more learning areas related with definitional perspectives of SLD’S were selected for the study. Approximately, 1013 students were selected for the study and for the whole procedures of validation of SLD Screening Checklist for Teachers. The teachers reported their observations about the students.

Administration, Scoring and Interpretation Procedures for Screening Checklist

Screening Checklist was given to the teachers, teaching subject of Urdu to sixth and seventh classes. They were briefed about the SLD of the children, the purposes and nature of the Screening Checklist. They were asked to overview the students’ portfolio and prior behavior on different occasions. They were further asked to report the real reflection of their observation about the students. They reported mistakes especially in the task of reading, writing and spelling in Urdu. They further indicated different nature of the mistakes of students committed during their class work and homework. They were briefed about the filling of the Screening Checklist.
Screening Checklist consisted of part A and Part B. There were four statements in part A, all related with the criteria for the children with SLD. A student was eligible for further investigation if response was “Yes” for the statement number one and four and “No” for the statement number two and three. Part B was consisting of 26 statements in the beginning. Later on, five statements were excluded, as there was confusion in the statements according to the characteristics required for the persistence of SLD in children. If the child was with any of the characteristics, the answer was in yes and one score was given. If the child was not with the characteristics representing SLD, the answer to be given was No and zero score was given. The total score of part A must be four and of part B was counted for each student and put for further analysis for the first identification of children with SLD

**Data collection and Data Analysis**

The SLD screening checklist was given to 202, teachers of the students who taught them Urdu and they identified 1013 students having specific learning difficulties. SLD screening checklist data was analyzed to determine the validity and reliability. Principal component and exploratory factor analysis using varimax rotation matrix were employed for Construct validity of the Screening checklist. Factor loading with the exploratory and confirmatory factor analysis of the Screening Checklist is presented in table-1.

**Table 1**

*Rotated Component Matrix of the Confirmatory Factors Analysis for the Identification of the Screening Checklist Problem Factors Observed by Teachers*

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor Loading (N=1013)</th>
<th>Low self Esteem (LE)</th>
<th>Sequencing (S)</th>
<th>Attention Deficit (AD)</th>
<th>Reverse Retention(RR)</th>
<th>Skipping (SK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LE15</td>
<td>.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>LE16</td>
<td>.86</td>
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<td></td>
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<tr>
<td>LE17</td>
<td>.85</td>
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<tr>
<td>S6</td>
<td>.84</td>
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<tr>
<td>S7</td>
<td>.75</td>
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<td>S5</td>
<td>.62</td>
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<td></td>
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<tr>
<td>AD11</td>
<td>.84</td>
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<td></td>
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<tr>
<td>AD12</td>
<td>.84</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RR13</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
<td>.87</td>
<td></td>
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<tr>
<td>RR14</td>
<td>.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.85</td>
</tr>
<tr>
<td>SK9</td>
<td>.85</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>SK10</td>
<td>.62</td>
<td></td>
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</tr>
<tr>
<td>SK8</td>
<td>.65</td>
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</tbody>
</table>
There were five factors that were arranged in Varimax Rotation shown in Table 1 and confirmed the hypothetical framework of the Screening Checklist. Three items of Low self Esteem factor had factor loadings of .88, .85 and .86. There were very good factor loadings in three items in this factor. Three items of sequencing factor had factor loadings of .62, .84 and .75. There were very good factor loadings in items 6 and 7 and good in item 5. 2 items of Attention Deficit factor had factor loadings of .84, and .84. There were very good factor loadings in both items in this factor. Two items of Reverse Retention factor had factor loadings of .87. There were very good factor loadings in both items in this factor. Three items of Skipping factor had factor loadings of .65, .85 and .62. There was a very good factor loading in item 10 and good in items 9 and 11. Most of the test items had very good factor loading and some had good factor loadings. Factorial validity of the Screening Checklist was well established.

Factor consistency reliability of the Screening Checklist was determined with Cronbach Alpha. Results are presented in table-2

**Table 2**

*Factors of the Screening Checklist with respective number of items and Cronbach’s Alpha coefficients for the identification of reliability*

<table>
<thead>
<tr>
<th>Scale factors</th>
<th>Number of Items</th>
<th>Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Self-Esteem</td>
<td>3</td>
<td>.83</td>
</tr>
<tr>
<td>Sequencing</td>
<td>3</td>
<td>.59</td>
</tr>
<tr>
<td>Attention Deficit</td>
<td>2</td>
<td>.58</td>
</tr>
<tr>
<td>Reverse Retention</td>
<td>2</td>
<td>.69</td>
</tr>
<tr>
<td>Skipping</td>
<td>2</td>
<td>.50</td>
</tr>
</tbody>
</table>

Above Table 2 shows that Cronbach’s Alpha reliability coefficient was .83 which was high for low self-esteem factor of screening checklists. The reliability coefficient of Reverse Retention was .69 which was good reliability. The reliability coefficients for the Sequencing, Attention Deficit and Skipping factors were .59, .58, .50 respectively which indicate sufficient reliability. It means that all the factors of the Screening Checklist were reliable for the diagnosis of the children with SLD.

**Results**

On the basis of factor analysis, it was concluded that there was high loading in factor analysis for factors; Low Self Esteem factor, Attention Deficit and Reverse Retention factors of The Screening Checklist. There was good factor loading in factor analysis for the Sequencing factors of Screening Checklist. There was good factor loading in factor analysis for the Skipping factor of Screening Checklist.
These factors have good reliability coefficients. These factors are indicating the deficiency in learning behaviour of the students. Low scores of these factors on the Screening Checklist identify the children with specific learning difficulties in the classroom.

It was concluded that one of the factors, Low Self-Esteem of Screening Checklist had high reliability whereas one factor of the factors Reverse Retention was of good reliability. Three factors, Sequencing Attention Deficit, and Skipping had sufficient reliability. So, all the factors of the Screening Checklist were reliable for the diagnosis of the children with Specific Learning Difficulties. Screening Checklist was given to teachers for recording the observation of students. In exploratory factor loading factors were selected with good or sufficient reliability coefficient. There was low factor loading in Skipping factor of the Screening Checklist but was selected for Screening Checklist keeping in view the fact that teachers perceive skipping of the words or letters of the students in different ways. Probably, they had no good understanding of problems of children for the children with SLD. The term skipping might have not been well comprehended by all the teachers.

This paper can contribute to the research for the identification of the Specific Learning Difficulties at the school level. School teachers can identify the students having specific learning difficulties and conduct more specific identification measures. Teachers can start intervention and investigate the more sophisticated problems of these children having specific learning difficulties at the school level.

References


