

Enhancement of Academic Self-esteem of Children with Learning Disability

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Academic pressure is common among children in Asian countries, especially in India's competitive academic environment. This pressure can be even more challenging for children with Learning Disability (LD). In this context, the study aimed to develop an intervention programme to enhance the academic self-esteem of children with LD, as it is associated with better mental health and academic performance. A sample of 68 participants were recruited for the intervention. NIMHANS Index for Specific Learning Disabilities was used to identify children with LD. The possibility of intellectual disability was eliminated by measuring general intelligence with Raven's standard progressive matrices. The academic self-esteem of the participants was measured in three phases of the intervention (Pretest, post-test, and Delayed post-test). Fourteen activities were included in the intervention for a span of 40 alternative working days (45-minute sessions). Results of repeated measures ANOVA indicate that scores of scholastic efficacy, family acceptance, friends' acceptance, physical acceptance. The study highlights the importance of including such training in the curriculum of children with LD to increase academic self-esteem and thereby academic performance and mental health.

Keywords: learning disability, academic self-esteem, Intervention, school students, Kerala

In the current academic environment in India, academic pressure experienced by both child and parent is enormous (Deb et al., 2015; Trevethan et al., 2022). Even after migrating to other countries, middle-class Indian parents prioritize the academic success of their children as a major life achievement (Aris, 2017). This pressure is associated with many negative psychosocial consequences such as generalized anxiety, exam anxiety, panic episodes, depression, and suicidal tendencies (Deb et al., 2014; George, 2023; Trevethan et al., 2022). Neurodevelopmental conditions such as Learning Disability (LD) worsen the conditions. The relationship between perceived academic stress and LD is stronger when academic pressure is higher (Burenkova et al., 2021; Jena, 2020). Further, children with LD exhibit lower levels of academic self-efficacy and higher

procrastination tendencies (Hen & Goroshit, 2014). In this context, the present study aims to develop an intervention to enhance the academic self-esteem of children with LD.

The authenticity of prevalence-related data on LD in the Indian context is questionable, primarily due to the issues related to standardized measures, considering linguistic and socio-economic differences. Studies on the prevalence of LD in India reported to be 2% to 9%. While considering specific learning disability (SLD), a meta-analysis reported 6.20% for dyslexia, 6.30% for dysgraphia, and 4.90% for dyscalculia (Joseph & Devu, 2022; Misquitta & Panshikar, 2023; Ramaa, 2000; Sandhu, 2015). An alarming rate of 9.93%, 12.57%, and 15.6% in mathematical, reading and writing difficulties were identified in the district

of Ernakulam, Kerala. Further, the study also reported a higher prevalence of LD (16.49%) in Kerala compared to the national average (Chacko & Vidhukumar, 2020).

Academic Enhancement Initiatives in India

The government of India has been attempting to enhance the quality of education through various policies and legislative initiatives. Various initiatives such as the *District Primary Education Programme* (DPEP) have been promoted by the government to fulfil the dream of Educated India (Dhankar, 2003). The most successful and discussed initiation among these is *Sarva Shiksha Abhiyan* (SSA). One of the subprogrammes of the SSA, *Padhe Bharat Badhe Bharat*, targets children with learning difficulties. The initiative aims to help children who find difficulty in reading and writing in elementary classes (Kumar, 2018; Rao, 2008).

Despite the legislative initiative in India, a lack of knowledge in the identification and assessment of LD, and lack of clarity in accommodating these children in mainstream education impaired the success of the policies (Vellaiappan, 2017). Though the government promote inclusive education for the psychological betterment of the children, scarcity, unfavourable attitudes and infrastructural problems hinder inclusive education (Kumari, 2024; Singh, 2016). Thus many scholars recommend the exploration of more specific policies and research on evidence-based training programmes to address various facets of LD (Misquitta & Panshikar, 2023; Vellaiappan, 2017).

Awareness about Learning Disability in Indian Society

Knowledge of parents regarding LD has been increasing through the years. For instance, Karande et al. (2007) reported that the knowledge of the parents regarding LD is inadequate, limiting the remedial

measures. Another recent study reported that a small portion of the parental population (15%) in India has good knowledge about LD whereas 75% have a moderate level of understanding (Mutalikadesai & D'Souza, 2020). A study conducted among primary school teachers indicates that the majority (70%) have average knowledge about LD whereas 27% have poor knowledge and 2.8% have good knowledge about the condition (Dhindsa et al., 2022). Pre-service teachers reported lesser awareness among LD compared to those who are in-service (Saravanabhavan & Saravanabhavan, 2010). Multiple factors, such as gender school type, education, and experience play a role in the teachers' knowledge level regarding LD (Madhamani & Joseph, 2021). Ironically, though teachers hold favourable attitudes towards children with LD, often find it difficult to communicate with them (Abernathy & Taylor, 2009; Murray et al., 2008).

Students' understanding of the condition of LD is crucial in the development of healthy and non-judgemental relationships among them. Generally, school students reported a positive attitude towards peer group members with LD comparing other behavioural and developmental disorders. Female students often show a more favourable attitude towards peers with disability (Litvack et al., 2011). Students who had friends with LD hold positive attitudes compared to others (Gonen & Grinberg, 2016). The results suggest the need for inclusive education. However, children with LD compare themselves with others and exhibit unfavourable evaluations of their academic skills, for instance, reading skills (Lazarus & Callahan, 2000). Contradicting these studies, scholars have reported negative attitudes and social isolation experienced by children with LD. Further, high-achieving students perceived reduced

learning in inclusive education (Litvack et al., 2011; Shapiro & Margolis, 1988).

Academic self-esteem of the Children with LD

Considering the general self-esteem of children with LD, scholars reported mixed results. For instance, Shambhavi and Kenchappanavar (2018) reported diminished self-esteem among these children; whereas others argue that the result is not consistent across the domains of self-esteem (Huang et al., 2021; Zeleke, 2004). Similarly, the authors revealed that the differences in the general self-concept and social self-concepts are not much different compared to other students. However, scholars are in consensus in terms of the academic self-esteem of the children with LD. Many studies reported low academic self-esteem among the group (Stone & May, 2002). In a systematic review of the studies in the last 20 years, Yakut and Akgul (2024) reported an evident reduction in academic self-esteem irrespective of its components. Núñez et al. (2011) reported differences in the reading, writing, mathematics, and school-related self-concept; whereas Szenczi et al. (2018) disagreed with the formal findings in terms of differences in these domains.

Factors such as perception of their disability, and motor performance are associated with the levels of academic self-esteem (Heyman, 1990; Willoughby et al., 1995; Zeleke, 2004). Similarly, placement of the students (inclusiveness) is also crucial in academic self-esteem as far as LD is concerned. Children with LD reported lower levels of academic self-esteem in the inclusive setting compared to the non-inclusive academic environment (Knickenberg et al., 2020; Trautner & Schwinger, 2018). Perceiving their neurodevelopmental condition as specific, modifiable, and non-stigmatizing increases both academic and general self-esteem (Cosden et al., 1999).

Interventions for Children with Learning Disability

Various interventional approaches have been developed to help children with LD in the last two decades. Self-development interventions when coupled with goal-setting skill training increased academic skills and productivity in the classroom (Konrad et al., 2007). Personal resources (e.g. sense of coherence and hope) are significant predictors of academic self-esteem of children with LD. Moreover, interventions addressing these personal resources help to enhance academic self-esteem (Ben-Naim et al., 2017). Interventions based on self-determination theory and basic psychological needs enhanced academic motivation and self-efficacy among children with LD. Approaches from positive psychology such as positive self-talk, self-monitoring, personal counselling and academic training are also effective in enhancing academic-related behaviours (Elbaum & Vaughn, 2001; Feeney, 2022). Since the last decade, digital technology has been utilized for the skill enhancement of children with LD. Computerized working memory training programs are found to be enhancing some areas of working memory in adolescents with severe learning disability (Gray et al., 2012).

Considering shreds of evidence regarding the relationship of academic self-concept with academic performance and reading skills (Marsh et al., 2006; Marsh & Martin, 2011), we have developed an intervention module addressing the academic self-esteem of the students. Further, the following hypothesis is proposed: *The intervention would significantly improve the academic self-esteem of the children with learning disability.*

Method

Research Design

A within-group design, *single group pre-post-delayed posttest research design* was used to test the effectiveness of the training

program. The pre-test phase consists of screening for learning disability and general intelligence tests. The outcome measure, academic self-esteem measured in the three phases of the study.

Sample

The sample consists of 68 school students from four schools that are situated in rural areas of Thrissur District, Kerala. The purposive sampling method was adopted to identify potential participants for the study. Based on the class teacher's report, the researcher selected 126 children who had failed in a minimum of three subjects. Raven's standard progressive matrices (SPM) was used to eliminate the children with intellectual disability. Twelve students were eliminated based on the scores in SPM. Further, the NIMHANS Index for Specific Learning Disabilities (SLD NIMHANS) was administered to identify children with LD. Seventy-nine students were identified with a potential diagnosis of LD. Based on the consent of the students and parents, 70 students were identified as the final sample for the intervention. Two of the participants were eliminated because of the inconsistent participation in the training. The majority of the participants are male ($n = 49$) compared to female ($n = 17$). The average age of the sample is 13.6 years, belonging to grade 7 and grade 8. Approval from the ethical/doctoral committee was obtained from the Bharathiar University before the recruitment of the participants to the study.

Measures

Raven's Standard Progressive Matrices (SPM; Raven et al., 1988). SPM is the well-known nonverbal test to measure general intelligence and reasoning ability. The test consists of 60 diagrammatic puzzles in which the participant is required to find the missing part in the diagram. The test is considered a relatively robust culture-free test. The psychometric properties of the test are

satisfactory across countries (Abdel-Khalek, 2005).

NIMHANS Index for Specific Learning Disabilities (NIMHANS SLD; Kapur et al., 2002). NIMHANS SLD is a common test used in India to diagnose children with LD. The battery consists of five subtests namely attention test, language test, arithmetic test, visuo-motor skills, and memory tests measuring specific learning disabilities. Two levels of tests are included in the battery. Level 1 consists of attention, visual discrimination, visual memory, auditory memory, speech and language, visuospatial skills, and motor skills. Level II includes attention, language (reading, writing, comprehension), spelling, perceptual-motor abilities, memory and arithmetic. The authors of the test reported adequate reliability and validity.

Academic Self-esteem Scale (ASE; Deepa & Velayudham, 2015). ASE Scale consists of 28 items with a five-point Likert-style response pattern. The test measures academic self-esteem in seven dimensions namely scholastic efficacy, family acceptance, social acceptance, friends' acceptance, physical acceptance, academic competency and global self-esteem. Cronbach alpha as a measure of homogeneity reliability is found to be satisfactory ($\alpha = .73$).

The Intervention

The social skills of the children with LD are reported to be poor. These skills deficient lead to lower peer acceptance, increased rejection and behavioural issues (Kavale & Forness, 1996, 1996). Thus, the scholar decided to include social skills enhancement sessions as the first component of the intervention. Three activities were included to increase the social skills (Table 1). Irrespective of the nature of LD, training in reading, writing and arithmetic activities is included in the intervention.

Table 1. Social Skills Enhancement Sessions

| Session | Activity | Details |
|---------|----------------------|--|
| 1 | Confidence Connect | Session involved activities like games, entertainment, and competitions twice a week to help participants interact, build self-confidence, and develop a sense of belonging. |
| 2 | Relationship builder | the trainer asked participants about personal details like their home, family members, and their parents' jobs, encouraging them to share with the child sitting next to them. |
| 3 | Communication Uplift | the researcher arranged participants in a circle and led a game where everyone participated freely. The session aimed to increase self-confidence in communication |

Sessions to enhance reading skills consist of four activities (Table 2). Based on the evidence on the effect of brain gym exercises on working memory, concentration and reading abilities among children with LD, these exercises are included in the first sessions of reading (Abduh & Tahar, 2018; Shanty et al., 2023). Relaxation exercises are also included in the sessions as these strategies are found to be successful in enhancing reading skills, improving attention span, reducing hyperactivity and increasing academic achievement (Glantz, 1983; Zipkin, 1985). Mutli-sensory approaches, VAKT and Key Words are included in the sessions. VAKT is effective in enhancing both the reading and writing skills of children with LD (Arbi et al., 2019; Prasetyaningrum & Faradila, 2019). Keyword methods are particularly useful in the acquisition of vocabulary, interestingly the strategy is found to be effective compared to traditional methods to increase language-related skills among children (Siriganjanavong, 2013). Children with LD tend to exhibit difficulty in reading complex words. Thus scholars propose to include methods to enhance the reading of multisyllabic words (Toste et al., 2017). Here the researcher has included a session named *Word Mastery* to identify the

complex words in the textbook of the students and helped them to read those phonologically. The objective of the method was to increase reading confidence among the students.

Sessions aiming to enhance writing skills consist of three activities including VAKT (Table 3). Simultaneous Oral Spelling (SOS) is found to be effective for both reading and writing for both children with and without LD (Prior et al., 1987; Thomson, 1996). Writing skills of children with LD are associated with impairments in eye-hand coordination, copying, visual closure, and fine motor control (Maciel et al., 2021). The scholar included a session named *Writing Foundations* to increase the handwriting skills of the participants. Training sessions on arithmetic skills were tailor-made for the children with LD. The fundamental principle of these techniques is to increase the conceptual clarity on the fundamental mathematical operations. Three activities are aimed to enhance confidence in approaching arithmetic skills by increasing conceptual clarity of number and symbols. Finally, another strategy implemented in the session is named as *Solution Steps*, which aimed to help them to organize the mathematical problems in a structured way.

Table 2. Reading Skills Enhancement Sessions

| Session | Activity | Details |
|---------|--------------------------|--|
| 4 | Brain Gym and Relaxation | Brain Gym Exercises were used to promote lateral balance between the left and right hemispheres of the brain, helping participants improve their coordination and fine motor skills. Relaxation Training included breathing exercises and meditation to help participants relax and focus. |
| 5 | VAKT | this method helps the children to learn by using more than one sense. Here the child can learn the letter by looking at their shape (Visual), by hearing the sounds they make (Aural), by feeling their shape (Tactile) and getting the shapes by physical movements (kinesthetic). In other words, they are 'say it', 'hear it', 'see it' and 'write it'. |
| 6 | Key Words Methods | This method helps children learn by engaging multiple senses: they learn letters by seeing their shapes (visual), hearing their sounds (aural), feeling their shapes (tactile), and moving to form the shapes (kinaesthetic), allowing them to "say it," "hear it," "see it," and "write it." |
| 7 | Word Mastery | In this method, participants were given a paragraph from a children's book and asked to identify difficult words, familiarize themselves with them, and then read the paragraph aloud accurately |

Table 3. Writing Skills Enhancement Sessions

| Session | Activity | Details |
|---------|----------------------------------|--|
| 8 | VAKT | This method helps children learn by using multiple senses, encouraging them to look at the shape of a letter while simultaneously making its sound. |
| 9 | Simultaneous Oral Spelling (SOS) | In the SOS method, the trainer writes a letter or word and pronounces it aloud, and then the child repeats it after the trainer. |
| 10 | Writing Foundations | It has three main sections: (i) The Pre-Writing Stage focuses on body position, paper placement, and pen/pencil grip. (ii) The Essential Stage emphasizes cursive (joined-up) writing. (iii) The Specific Stage addresses letter size, shape, and spacing between letters and words. |

The Procedure

Two batches of students (7 - 11 in a group) from each school were identified as potential participants from four selected schools in rural areas of Thrissur, Kerala to test the effectiveness of the intervention after screening for LD and general intelligence. Informed consent was collected from the school authorities, parents and children. The training was scheduled for 40 alternative working days. As per the convenience of the school management, two schools were assigned to the morning session and the other two to the afternoon session (45-minute sessions).

A pretest was conducted before the scheduled 40 intervention days. The training aimed to enhance four areas of academic work, namely social skills, reading skills, writing skills, and arithmetic skills. Each area includes three or four activities. Tasks included in the intervention were validated

by three experts in the area of learning disability (Two academicians and One practitioner). Consensus among the experts is also ensured. The details of the sessions are included in Tables 1 to 4. One week after the completion of the training, a post-test was conducted to measure changes in the scores of academic self-esteem. A delayed post-test measurement of academic self-esteem also was conducted after two months.

Results

Results of repeated measures ANOVA indicate that scores of scholastic efficacy, family acceptance, friends' acceptance, physical acceptance academic competency and global self-esteem are significantly different at various phases of the study, $F(2, 136) = 204.7, 115.0, 14.28, 12.20, 224.53, 136.63, p < .01$. Whereas, scores of social acceptance has not changed during the intervention, $F(2, 136) = .089, p > .05$.

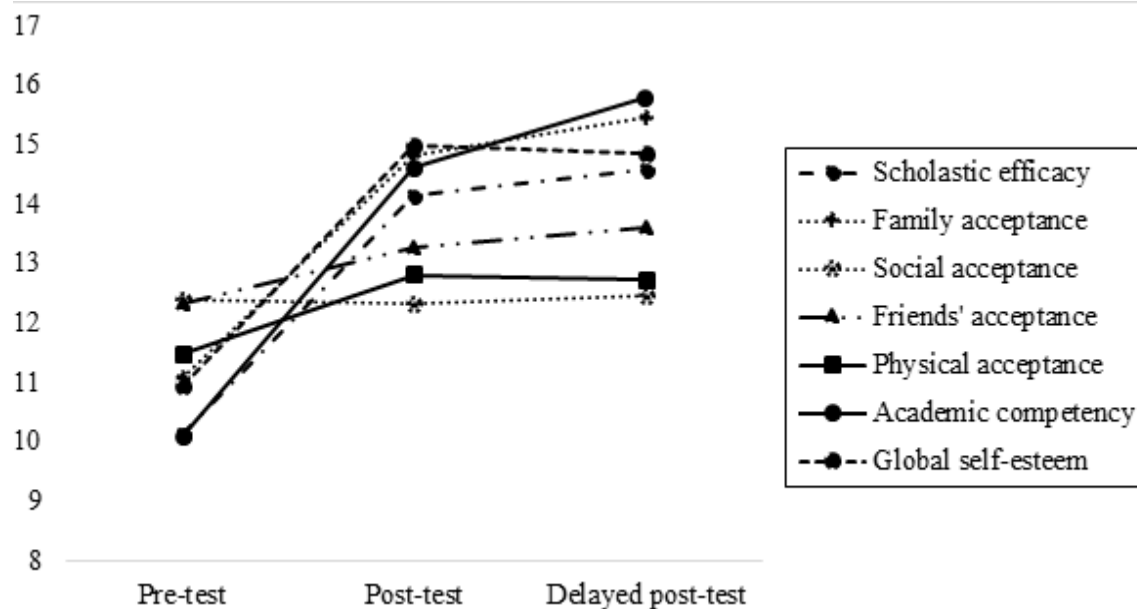


Figure 1. Academic Self-Esteem Among Children with Learning Disability During Pre-test, Post-test and Follow-up Phases

As the changes in the scores are significant in six dimensions of the academic self-esteem scale, a pairwise comparison with Bonferroni correction was carried out to understand the significance of phase-wise changes in the scores. Results indicate that score of scholastic efficacy, family acceptance, physical acceptance, academic competency and global self-esteem are increased from pre-test phase to post-test phase (MD = 4.02, 3.74, 1.34, 4.52, 5.72, $p < .01$). Differences between post-test phase of the study and follow-up phase of the study are found to be insignificant (MD = .45, .66, .08, 1.18, $p > .05$), except the scores of global self-esteem, MD = 1.94, $p < .05$. Differences in friends' acceptance between pretest and post-test was insignificant, MD = .93, $p > .05$; whereas the difference between pre-test phase and follow up phases of the study was significant, MD = 1.29, $p < .05$. scores of friends' acceptance did not increase significantly from the post-test phase to the delayed post-test phase. Differences in the score are depicted in the Figure 1.

Discussion

The study aimed to test the effectiveness of the intervention in increasing the academic self-esteem of children with LD. Results of the analysis indicate that the 40 working days of training were effective in enhancing academic self-esteem except for perceived social acceptance related to academics. Among other variables, an abrupt change was observed in the post-test phase of the intervention except friend's acceptance in which the change was relatively slow.

Scholastic efficacy and academic competence factors of the academic self-esteem scale are direct reflections of the confidence the child perceived regarding their academic skills. Training in reading, writing and arithmetic skills is the potential reason for these changes. Scholars have demonstrated that population-specific

interventions are useful in increasing general self-esteem, academic self-esteem, and even academic performance (Elbaum & Vaughn, 2001, 2001; Perveen et al., 2020; Shambhavi & Kenchappanavar, 2018). Further, evidenced-based approaches such as brain gym are assumed to increase working memory and reading skills (Abduh & Tahar, 2018; Shanty et al., 2023). Multi-sensory approaches such as VAKT and Key Words are found to be effective in increasing both reading and writing skills (Arbi et al., 2019; Maulana et al., 2013; Prasetyaningrum & Faradila, 2019; Siriganjanavong, 2013). Complex words and speed reading techniques (Named *Word Mastery* in the present study) are effective in increasing reading skills (Toste et al., 2017); Thus the researcher proposes that these strategies enhance academic skills and thereby academic confidence and efficacy.

The Physical acceptance dimension of the intervention reflects the perceived competency of the student related to the motor skills required to write including attractive handwriting and speed. A writing foundations session was included in the study to address these areas of academic self-concept. Similar to the results of the current study, Berninger et al. (2015) reported that training programmes are effective in increasing the handwriting skills of children with LD. Handwriting is capable of negatively impacting self-esteem and academic performance (Feder & Majnemer, 2007). When children with dysgraphia are made aware of their handwriting difficulties with directions to improve handwriting enhanced self-efficacy and actual handwriting (Engel-Yeger et al., 2009). Similar to the previous studies, the present study also could increase the physical acceptance dimension of academic self-esteem.

Relaxation exercises are expected to increase both the cognitive and social skills of the participants (Glantz, 1983; Zipkin,

1985). Studies have reported the effectiveness of relaxation training on the social skills of children with autism spectrum disorder (Floress et al., 2017). Specific training sessions are included in the social development sessions (confidence connect, relationship builder, and communication uplift) to facilitate relationship-based acceptance regarding academic behaviour. Social skills are perceived as associated with academic achievement. Further, social skills improve social support which in turn enhances academic self-confidence (Agustanti & Astuti, 2022). Similarly, Saito and Okayasu (2014) reported that social skills training is useful for students with low self-esteem by enhancing resilience. Together, focus on social skills and academic skills is believed to enhance the academic self-efficacy of children with LD. Considering various aspects of academic self-esteem are enhanced through the intervention, global academic self-esteem also showed a significant improvement.

Conclusion

The proposed intervention is effective in increasing the academic self-efficacy of children with LD. The mixture of both social skills enhancement and academic skills is useful to help them. Considering the limitation of not including a control group, the researcher suggests further research initiatives with a robust experimental design. Moreover, such interventions should be made available to various schools in the state. Evidence-based programs are important for the successful educational policies of the government of India.

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