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ABSTRACT

The present study was conducted to assess the effectiveness of mindfulness training on planning and self-regulation skills among students with dyslexia. The sample, consisting of 40 students with dyslexia (20 in Experiment Group and 20 in Control Group), was selected from govt. schools of Una district of Himachal Pradesh. The planning and self-regulation skills of the participants were assessed using meta-cognition questionnaire, developed by the investigators. The investigators used pretest-posttest control group experimental design for the study. The experiment group was exposed to six weeks' mindfulness intervention. The difference in the mean gain scores on planning and self-regulation for both the groups were studied using t-test. The results show that mindfulness intervention has significantly improved planning and self-regulation skills of the students with dyslexia.

KEYWORDS: Mindfulness intervention; Self-regulation; Meta-cognition; dyslexia.

INTRODUCTION

The reviews of the researches indicate that mindfulness is one such intervention which can improve the meta-cognitive skills such as planning and self-regulation of the children (Evans, Baer & Segerstrom, 2009; Flook et al, 2010; and Razza, Bergen-Cico & Raymond, 2013).

Mindfulness means maintaining a moment by moment awareness of our thoughts, feelings, bodily sensations, and surroundings by paying attention in the present moment. Mindfulness involves accepting our thoughts without being judgmental. While practicing mindfulness one should sense what is there in the present moment instead of the past or imagining the future.

Studies have shown that practicing mindfulness, even for few weeks, can bring lots of physical, psychological and social changes (Broderick & Metz, 2009; Delbridge & Lubbe, 2009). Mendelson, Greenberg, Dariotis, Gould, Rhodies and Leaf (2010) reported in their study on fourth and fifth graders that the school-based mindfulness and yoga intervention for 12-weeks reduced involuntary stress responses and improved mental health outcomes and social adjustment of the participants. Zylowska et al (2007) reported improvements in ADHD symptoms and test performance on tasks measuring attention and cognitive inhibition among the participants of an 8-week mindfulness training program for adults and adolescents with ADHD. Semple, Reid and Miller (2005) conducted a 6-week mindfulness training program for anxious children (aged 7 to 8 years) and found improvements in their levels of attention. Wolters (2003); Boekaerts and Corno (2005) also supported the argument that the students with dyslexia benefits from mindfulness intervention.

One of the main goals of education in today’s scenario is not only to enrich students with enormous amount of knowledge but also to develop some important skills such as planning and self-regulation among them to make them independent learners. Planning and self-regulation are the major components of meta-cognitive skills, which lead to academic, emotional and social improvement of the students. By using these skills effectively, students can achieve their goals. By using these skills effectively, students can achieve their goals.

The present research is experimental in nature with pretest-posttest control group experimental design. Six weeks' Mindfulness intervention was given to the experimental group only.

Sample of the study: The two government schools of Una district of Himachal Pradesh were selected for the identification of the sample i.e. students with dyslexia studying in classes 6th and 7th. After the identification, the sample was matched school wise, gender wise, intelligence wise and grade wise. Finally, the selected 40 students were randomly assigned to two groups i.e. Experiment Group (EG) and Control Group (CG).

Procedure adopted for data collection: First of all, the initial sample of 239 students was screened using teacher referral form. Then Standard Progressive Matrices (SPM) test was administered to select the students with average or above average intelligence followed by administering of Diagnostic Test of Reading Disorder (DTRD). Thus, after administering these aforementioned identifying tools, 44 students were found to meet the criteria of selection. After matching, final sample of 40 students with dyslexia were selected. This sample of 40 students was then randomly allotted to two groups viz. Experiment Group (EG) and Control Group (CG). Experiment Group (EG) was exposed to Mindfulness intervention for six weeks. Pre-testing and post-testing on planning and self-regulation skills were done respectively for both the groups.

Tools used: The following tools were used for the present study:

1. Teacher referral form made by the investigator for the identification of students with dyslexia.
2. Standard Progressive Matrices (SPM) by Raven, Raven and Court (2000) to measure the intelligence level of the students.
3. Diagnostic Test of Reading Disorder (DTRD) by Swarp and Mehta (2003).
4. Metacognition Questionnaire developed by the investigators.

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RESULTS AND DISCUSSION

Objective 1: To study the differences in pre-test and post-test mean scores on Planning skill of students with dyslexia in the Control Group was found to be 0.300. As compared to the critical (table) value, the obtained t-value for planning skill, i.e., t=1.371, is found to be insignificant.

Further, the difference in the pre-test and post-test mean scores on Self-regulation skill of students with dyslexia in the Control Group was found to be 0.650 respectively. As compared to the critical (table) value, the obtained t-value for self-regulation skill, i.e., t= 2.371, p=0.028, is found to be significant at 0.05 level.

Objective 2: To study the differences in pre-test and post-test mean scores on (i) Planning skill and (ii) Self-regulation skill of students with Dyslexia in Experiment Group (EG).

As shown in Table 6, the difference in the pre-test and post-test mean scores on Planning skill of students with dyslexia in the Experiment Group was found to be 1.550. As compared to the critical (table) value, the obtained t-value for planning skill, i.e., t=3.566, p=0.002 is found to be significant at 0.01 level.

Further, the difference in the pre-test and post-test mean scores on Self-regulation skill of students with dyslexia in the Experiment Group was found to be 1.550. As compared to the critical (table) value, the obtained t-value for self-regulation skill, i.e., t=6.049, p=0.000 is found to be significant at 0.01 level.

Objective 3: To study the effect of Mindfulness training on Planning skill of elementary school students with dyslexia.

Table 3: Homogeneity of variance for assessment at pre-test stage on Planning and Self-regulation skills of students with dyslexia in CG and EG

Table 4: Paired samples t-test for pre-test and post-test scores on Planning and Self-regulation skills of students with Dyslexia of Control Group

Table 5: Paired samples t-test for pre-test and post-test scores on Planning and Self-regulation skills of students with Dyslexia of Experiment Group

Table 6: Independent samples t-test for mean gain scores on Planning skill of students with Dyslexia in Control Group and Experiment Group
The mean gain scores on Planning skill of students with dyslexia in the Control Group and Experiment Group were found to be 0.300 and 1.050 respectively (Table 6, Figure 1). The obtained t-value, i.e., \( t = 2.044 \) (\( p = 0.048 \)), was found to be significant. Hence, it can be interpreted that the Mindfulness training had significant effect on planning skill of the students with dyslexia.

**Objective 4:** To study the effect of Mindfulness training on Self-regulation skill of elementary school students with dyslexia.

Table 7: Independent samples t-test for mean gain scores on Self-regulation skill of students with Dyslexia in Control and Experiment Group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>Mean gain scores</th>
<th>SD</th>
<th>SED</th>
<th>df</th>
<th>Difference in means (EG-CG)</th>
<th>t-value (p-value)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-regulation</td>
<td>CG</td>
<td>0.650</td>
<td>0.226</td>
<td>0.274</td>
<td>38</td>
<td>1.600</td>
<td>t=4.085 (p=0.000)</td>
<td>Significant at 0.01 level</td>
</tr>
<tr>
<td></td>
<td>EG</td>
<td>2.250</td>
<td>1.251</td>
<td>0.280</td>
<td></td>
<td>1.226</td>
<td>(EG-CG)</td>
<td></td>
</tr>
</tbody>
</table>

The mean gain scores on self-regulation skill of students with dyslexia in the Control Group and Experiment Group were found to be 0.650 and 2.250 respectively (Table 7, Figure 2). The obtained t-value, i.e., \( t = 4.00 \) (\( p = 0.00 \)), was found to be significant. Hence, it can be interpreted that the Mindfulness training had significant effect on self-regulation skill of the students with dyslexia. In other words, self-regulation skill of students in EG improved significantly after training as compared to students in CG who were not exposed to Mindfulness training. Chiesa, Calati and Serretti (2011); Vago and Silbersweig (2012); Chiesa, Serretti and Jacobsen (2013); and Razza, Bergen-Cico and Raymond (2013) are supporting the above results.

**CONCLUSION**

The current study investigated the effectiveness of Mindfulness training on planning and self-regulation skills of students with dyslexia. The results indicate that the students with dyslexia who were exposed to six weeks' mindfulness training (i.e., the students in EG) have shown significant improvement in their scores on planning and self-regulation skills. Therefore, investigators advocate the use of mindful practices for students, especially students with dyslexia, so as to improve their planning and self-regulatory skills which may bring improvements in their academics and hence may further improve their psychological and social well-being.

**REFERENCES**