CHAPTER II

REVIEW OF RELATED LITERATURE

2.1 Purpose of Review of Related Literature

Review of related literature is an important pre-requisite to plan and implement any research project. It is very important that the researcher studies the journals, dissertations, theses and other sources of information related to the research. It helps the researcher to identify the studies related to the topic and also helps to avoid duplication. Review of literature allows the researcher to explore different sampling techniques, statistical procedures, research designs etc.

According to Taylor (2007), a review of the literature is a classification and evaluation of what accredited scholars and researchers have written on a topic. A literature review must do these things:

1. be organized around and related directly to the thesis or research question
2. synthesize results into a summary of what is and is not known
3. identify areas of controversy in the literature
4. formulate questions that need further research

Review of related literature enables the researcher to create his own conceptual framework. Though this chapter is very time consuming but at the same time it is very helpful to precisely state the problem as well as the rationale for carrying out the research.

2.2 Review of the Related Literature

The review of related literature has been discussed below.

This section includes:

2.2.1 Studies related to Mindfulness and Reading Anxiety
2.2.2 Studies related to Mindfulness and Reading Ability
2.2.3 Studies related to Mindfulness and Self-esteem
2.2.1 Studies related to Mindfulness and Reading Anxiety

The researcher has tried to explore the literature on Mindfulness to her best, but still was unable to access any direct study on the effectiveness of mindfulness on reading anxiety. So, the researcher has quoted the studies on anxiety. Also, many of the studies quoted in this section are either on adults or on college students, but nonetheless these studies have helped to develop the insight on effectiveness of mindfulness. Its effectiveness in many fields lays foundation to prove its worth trying out with special need children.

Peterson and Pbert (1992) assessed the effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. Through structural clinical interview 22 individuals were screened, who found to meet the DSM-III-R criteria for generalized anxiety disorder with or without agoraphobia. A weekly report was obtained before and after mindfulness based stress reduction and relaxation program through self-ratings and therapists’ ratings for three months. There was a significant reduction in anxiety and depression scores, which was measured through ANOVA. Thus, it proved that mindfulness meditation training program can effectively reduce symptoms of anxiety and panic and can help maintain these reductions in patients with generalized anxiety disorder, panic disorder, or panic disorder with agoraphobia.

Semple, Reid and Miller (2005) studied the effect of mindfulness in treating the students with anxiety. A 6-week mindfulness training was given to anxious children. This sample comprised of five anxious children aged 7 to 8 years old. This study provided the basic support to treat the children with anxiety symptoms. The result of the study suggested that mindfulness is an effective intervention to reduce the anxiety among children.

Singh, Lancioni, Winton, Adkins, Wahler, Sabaawi and Singh (2007) investigated the effect of mindfulness training in controlling the aggressive behavior of individuals with mental health. The study was conducted on three individuals who had frequently been readmitted to an inpatient psychiatric hospital owing to their anger management problems. The study involved simple meditation techniques,
which helped the subjects to shift their attention and awareness from the anger-producing situation to the soles of their feet, a neutral point on their body. Through this training verbal and physical aggression has decreased. During four years of follow up, very low rates of verbal aggression has occurred among these subjects.

Lin, Chang, Zemon and Midlarsky (2008) investigated the effect of Chan (Zen) meditation on anxiety and musical performance quality. A sample of 19 students were taken from music school and were randomly assigned to eight-week meditation group and control group. The students performed in a public concert after the completion of the intervention and the outcome of the students was measured through performance anxiety and musical performance quality. A short term meditation did not show any significant improvement in musical performance quality. However, there was a significant decrease in performance quality and increase in performance anxiety of the control group. Intervention group demonstrated a positive linear relation between performance quality and performance anxiety. So, the results of the study indicated that enhanced concentration and mindfulness cultivated by Chan practice is helpful in reducing performance anxiety and in improving musical performance.

Hofmann, Sawyer, Witt and Oh (2010) examined the effect of mindfulness on anxiety and depression through meta-analysis studies. 39 studies were taken for the meta-analysis, comprising of 1,140 participants of cancer problem, anxiety disorder, and depression and other psychiatric problems. The results showed that the mindfulness based therapy was moderately effective for improving anxiety (hedges’s g= 0.63) and mood symptoms (hedges’s g= 0.59) from pre to post treatment in the overall sample with effect size g=0.97 and g=0.95 respectively. Thus, the study showed that this intervention was effective in treating anxiety and mood symptoms in clinical populations.

Roberts and Danoff-Burg (2010) examined the relation between mindfulness and health behaviors in college students. A sample of 553 undergraduates was taken from northeastern United States. The participants were assessed through mindfulness questionnaire, perceived health questionnaire, health behavior questionnaire, health-related activity restriction and stress questionnaire. The results showed that
mindfulness is related to decreased stress and it further contributes to increased positive health perceptions and health behaviors.

Semple, Rosa and Miller (2010) examined the Mindfulness-based cognitive therapy for children (MBCT-C). The sample for the study comprises of 9 to 13 years old boys and girls. They were mostly from low income group and from inner city households. A follow up was given to children after three months who had completed the first trial. The Child Behavior Checklist, State-Trait Anxiety Inventory for Children, and Multidimensional Anxiety Scale for Children were used for assessment. Variance of changes in the behavior problems caused reduction in attention problems. There was a significant reduction in anxiety symptoms and behavior problems in those who reported high level of anxiety at pretest stage. Thus, MBCT-C is a promising intervention for attention and behavior problems.

Vollestad, Sivertsen and Nielsen (2011) investigated the effect of Mindfulness-Based Stress Reduction (MBSR) for patients with anxiety disorders. The MBSR group had 76 self-referred patients and eight participants did not complete the eight-week MBSR intervention. The participants who completed the treatment showed significant improvement on all outcome measures as compared to control group. Mindfulness meditation analysis indicated the full mediated changes in acute anxiety symptoms and partial mediated changes in worry and trait anxiety. This study concluded that MBSR is an effective treatment for anxiety disorders.

Benn, Akiva, Arel and Roeser (2012) studied the effect of mindfulness training on parents and educators of children with special needs. A 5-week mindfulness training (MT) program for parents and educators of children with special needs was conducted. The participants who received MT showed significant reduction in stress and anxiety. Besides this, there was an increase in the level of mindfulness, self-compassion and personal growth. The increased level of mindfulness after the completion of program suggested its importance in maintaining emotional balance and facilitating well-being in parents and teachers of children with developmental challenges.

Kelley and Lambert (2012) examined the potential role of mindfulness for attenuating anger and aggression among criminals. The study was conducted on 272
criminals by using Mindfulness Attention Awareness Scale, Aggression Questionnaire, Hostile Attribution Bias Scale and Thought Recognition Inventory. The results indicated that dispositional mindfulness was negatively related with self-reported aggression and hostile attribution bias. It was positively related with thought recognition.

Nejati, Zabihzadeh, Maleki and Tehranchi (2012) studied the effect of mind reading and mindfulness abilities in major depressed and healthy matched subjects. The sample consisted of 95 subjects, comprising 45 major depressed patients and 50 healthy subjects. The findings showed that mind reading and mindfulness in depressed individuals were significantly lower than in healthy individuals.

Robins, Keng, Ekblad and Brantley (2012) studied the effectiveness of mindfulness-based stress reduction (MBSR) on emotional experience and expression. The sample consisted of 56 adults who were selected randomly and were assigned to MBSR or to a waiting list (WL). The group under intervention experienced increase in trait mindfulness, self-compassion and decrease in absent-mindedness, fear of emotions, suppression of anger, worry and also experienced difficulties in regulating their emotions. The WL group subsequently received MBSR and both the groups showed significant changes on all the variables except on anger and rumination variables. It was concluded that an 8-week mindfulness training program has beneficial impact on emotion regulation process.

Schmertz, Masuda and Anderson (2012) investigated the relation between mindfulness and social anxiety. The study was conducted on ninety-eight people who were diagnosed to have social phobia. The hypotheses were tested by regression analysis and bootstrapping mediation statistics. The study revealed that mindfulness has negative relation to the symptoms of social anxiety.

Sharma, Mao and Sudhir (2012) examined the effectiveness of a Mindfulness-Based Cognitive Behavior Therapy (MBCBT) for reducing cognitive and somatic anxiety and modifying dysfunctional cognitions in patients with anxiety disorders. A single case design with pre- and post-assessment was adopted and five clients (four males and one female) with a diagnosis of anxiety disorder were recruited from the outpatient mental health services of NIMHANS. However, one patient dropped out of
the study and the final sample comprised of four clients (three males and one female). Three patients received a primary diagnosis of generalized anxiety disorder (GAD), while the fourth patient was diagnosed with Panic Disorder. Patients were assessed on the Cognitive and Somatic Anxiety Questionnaire (CSAQ), Penn State Worry Questionnaire (PSWQ), Hamilton's Anxiety Inventory (HAM-A), and Dysfunctional Attitudes Scale. The therapeutic program consisted of education regarding nature of anxiety, training in different versions of mindfulness meditation, cognitive restructuring, and strategies to handle worry, such as, worry postponement, worry exposure, and problem solving. A total of 23 sessions over four to six weeks were conducted for each patient. The results revealed that MBCBT was effective in bringing about statistically significant reduction in physiological / somatic symptoms, as well as cognitive symptoms of anxiety in patients with anxiety disorders on the completion of therapy.

Bergen-Cico, Possemato and Cheon (2013) examined the effect of mindfulness on physiological health. The study was conducted on a sample of 119 undergraduate students and the mindfulness based stress reduction (MBSR) program was given for the duration of 5-weeks. The study revealed the statistically significant improvement in psychological health (measured by Philadelphia Mindfulness Scale and Kentucky Inventory Mindfulness Scale) and self-compassion (measured by self-compassion scale). So, this can be concluded that the mindfulness intervention is helpful in improving psychological health however, there was no improvement in trait anxiety.

Jennings and Jennings (2013) studied the impact of brief mindfulness meditation training with adolescents. This training was given for a period of three weeks and each session lasted for 50-minutes. Using Beck Anxiety Inventory (BAI), it was found that there was 30% reduction in general anxiety and 55% reduction on the Cognitive subscale and 11% reduction on Physiological subscale. Also, 9% of reduction was found in social anxiety as measured by the Interaction Anxiety Scale. So, this study concluded that brief mindfulness meditation can be used in reducing the negative cognitions such as self-deprecation and excessive worrying.
Alrich (2013) investigated the effect of mindfulness meditation on anxiety, depression and stress among adolescents. The present study consisted of 200 students and were randomly selected from 10+2 class and they were further divided into two equal groups i.e. Experimental Group and Control Group. The intervention was given for 12 weeks; alternative days in a week, for 30 minutes each. The results showed that there was a reduction in anxiety, stress and depression level through mindfulness meditation which further has brought significant improvement in the academic achievement of the Experimental Group.

Solar II (2013) studied the effect of mindfulness meditation on adolescents with High Incidence disabilities. High Incidence Disabilities includes: specific learning disabilities, emotional and behavioral disorders, physical disabilities. The study was conducted on 10 secondary school students who received special education services. Mindfulness meditation was given to these students for twice a week for ten weeks, each session was of 45 minutes. It was found that there was no statistically significant effect on the measurement of mindfulness, perceived stress, anxiety and class room behavior between the pretest and posttest.

Spek, Van Ham and Nyklíček (2013) examined the effect of mindfulness on adults with autism spectrum disorder. A sample of 42 adults with autism disorder spectrum (ASD) was taken and the participants were given 9-week Mindfulness-based therapy (MBT). The results showed a significant reduction in depression, anxiety and rumination in the intervention group as compared to the Control group. So, this study showed that the adults with ASD can be benefit from mindfulness based therapy.

Costello and Lawler (2014) studied the effects of Mindfulness on Perceived Levels of Stress among school-children from lower socioeconomic backgrounds. In this study mindfulness program was given to 63 primary school children for the duration of 5-weeks who were at risk of social exclusion in education. Qualitative data was collected by interviewing 16 children and two teachers. Stress level was measured through children’s perceived stress levels which was evaluated at baseline. Also, follow up revealed significant reduction in stress in post mindfulness intervention. So, from this study it can be concluded that the mindfulness intervention has a positive impact on the growth of children.
Hue and Lau (2015) investigated the effect of mindfulness meditation on pre-service teachers in Hong Kong. The study was conducted on 70 pre-service teachers of Honk Kong for the duration of six-weeks. Both the experiment group and control group were assessed through pretest and posttest measurements. There was a statistically significant increase in the mindfulness and well-being of the experiment group. Regression analysis supported that mindfulness was a significant predictor of well-being, stress, anxiety and depressive symptoms.

Bernay, Graham, Devcich, Rix and Rubie-Davies (2016) examined the effect of mindfulness on the well-being of the students. A sample of 124 elementary school students were given the mindfulness intervention for eight-weeks. The participants were assessed by using the Mindfulness Awareness Attention Scale for Children and the Stirling Children’s Well-being Scale. The data revealed that there was significant improvement in the well-being and the level of the mindfulness. There was direct relation between mindfulness and well-being. So, it can be concluded that mindfulness intervention is very effective in improving well-being.

Chobe (2016) examined the effect of breath meditation on the psychological well-being of the students. The intervention was conducted for 90 days( 6days/ week) and each session was of 45 minutes. A sample of 200 students was taken from 10th, 11th and 12th standard. They were divided randomly into two groups- Experiment Group and Control Group. The results showed that Breath meditation has increased personal adjustment, self-confidence and reduced state anxiety, mental depression of adolescents. It showed significant difference in optimistic and pessimistic attitude of adolescents.

Dundas, Thorsheim, Hjeltnes and Binder (2016) examined the effect of Mindfulness Based Stress Reduction (MBSR) on academic achievement and self-confidence. The sample consisted of 70 students from graduation and post-graduation. On the sample of 46 students, analysis of covariance was applied and it was found that there was the statistically significant reduction in anxiety and improvement in self-confidence. However, there was a reduction in both cognitive and emotional components of evaluation anxiety on the original sample of 70 students. Researcher
concluded that more research is needed to establish the effect of mindfulness on anxiety. This study indicated that MBSR may reduce evaluation anxiety.

Mayorga, De Vries and Wardle (2016) conducted a quasi-experimental study to investigate if using meditation techniques would lower levels of anxiety and create mindfulness attention awareness among counseling students enrolled in a counseling skills course, taught in a masters-level counseling program. A total of 29 students were recruited from three counseling skills courses, two of which were included in the treatment condition and one was designated as the control condition. Students in the treatment condition were instructed in one pointed breathing meditation and it was practiced for five minutes at the beginning of each class. The results indicated that, there was a significant reduction in anxiety in the treatment group; however, no significant changes in mindfulness were noted.

Sharma, Sharma, Marimuthu (2016) explored the role of mindfulness-based program in the management of aggression among youth. The present study consisted of 50 subjects, age range from 18 to 25 years. It was a pre-test post-test study and the tools administered included Socio-demographic information schedule, Buss-Perry Aggression Questionnaire, and World Health Organization quality of life. The results showed the presence of feeling of well-being and ability to relax, reduction in anger and verbal aggression enhancement of quality of life in the physical and environment domains at one month follow-up.

In the light of the literature reviewed above, it is observed the mindfulness intervention has been widely investigated with respect to its effectiveness and its impact on anxiety, stress, aggression, worry and psychological well-being. Most of the studies have shown that this intervention helps in reducing anxiety (Peterson & Pbert, 1992; Semple, Reid & Miller, 2005; Hofmann, Sawyer, Witt & Oh, 2010; Semple, Rosa & Miller, 2010; Vollestad, Sivertsen & Nielsen, 2011; Kelley & Lambert, 2012; Dundas, Thorsheim, Hjeltnes & Binder, 2016), controlling the aggressive behavior (Singh, Lancioni, Winton, Adkins, Wahler, Sabaawi & Singh, 2007; Sharma, Sharma, Marimuthu, 2016), helpful in reducing performance anxiety (Lin, Chang, Zemon & Midlarsky, 2008), reduces social anxiety (Schmertz, Masuda & Anderson, 2012), somatic anxiety (Sharma, Mao & Sudhir, 2012), decreasing stress
(Roberts & Danoff-Burg, 2010), reduction in stress and anxiety of parents and educators of children with special needs (Benn, Akiva, Arel and Roeser, 2012; Costello & Lawler, 2014), decreasing depression (Nejati, Zabihzadeh, Maleki & Tehranchi, 2012), reducing the negative cognitions (Jennings & Jennings (2013), reduction in anxiety, stress and depression level & Alrich, 2013) reducing depression, anxiety and rumination in adults with autism spectrum disorder (Spek, Van Ham & Nyklicek (2013). It is a significant predictor of well-being, stress, anxiety and depressive symptoms (Hue & Lau, 2015) and effective in improving well-being (Bernay, Graham, Devcich, Rix & Rubie-Davies, 2016). There is a significant difference in optimistic and pessimistic attitude of adolescents (Chobe, 2016). However, a few studies have shown no significant effect of mindfulness on anxiety and behavior. There is no improvement in trait anxiety (Bergen-Cico, Possemato & Cheon, 2013); no significant changes in mindfulness (Mayorga, De Vries & Wardle, 2016). Also, there is no statistically significant effect on the measurement of mindfulness, perceived stress, anxiety and classroom behavior (Solar II, 2013). So, in order to reduce the gaps in the findings, more research is required especially with its impact on the anxiety students.

2.2.2 Studies related to Mindfulness and Reading Ability

The researcher has explored lots of studies on mindfulness but very few studies were related to reading ability. The studies quoted here are mainly related to the effectiveness of mindfulness on performance, executive function, cognitive skill and academic achievements. Also, many of these studies are foreign studies. There is a dearth of studies on mindfulness in India, especially related to reading and cognitive abilities. However, the following studies have provided the base to work upon mindfulness and reading ability.

Bögels, Hoogstad, Dun, Schutter and Restifo (2008) evaluated mindfulness training for the problems of adolescents. The study was conducted on 14 adolescents, clinically referred, suffering from mental disorders. Simultaneously, the parents of these adolescents were also given the training of mindful parenting. The children self-reported improvement in attention problems, mindful awareness, internalizing and externalizing complaints and performed better on a sustained attention test. The
parents also self-reported the improvement on children’s goal, externalizing and attention problems, self-control, attunement to other and withdrawal. Thus, mindfulness appeared to be a promising approach for clinic-referred adolescents with attention and impulsivity problems.

Chambers, Lo and Allen (2008) examined the impact of an intensive mindfulness training on attentional control, cognitive style and affective function. A 10-day intensive mindfulness training was given to 20 novice meditators. The sample was evaluated with self-report scales to measure mindfulness, rumination, affect and performance. Results showed that the sample which was given mindfulness training indicated significant improvements in self-reported mindfulness, depressive symptoms, rumination and performance measures of working memory and sustained attention as compared to those who were not given any mindfulness training.

Flook, Smalley, Kitil, Galla, Kaiser-Greenland, Locke and Kasari (2010) examined the effect of mindfulness awareness practices (MAPs) on executive functions in elementary school children. The program was delivered to third grade children for 8 weeks. The children’s executive function was assessed by their teachers and parents immediately before and after the program. The result indicated an interaction effect between baseline EF score (Executive Function) and group status on post-test EF. Children in the MAPs group (Mindfulness Awareness Practices) who were less well regulated showed greater improvement in EF as compared to Control group.

Zeidan, Johnson, Diamond, David and Goolkasian (2010) examined the effect of brief mindfulness training. The study showed that the four day brief meditation training enhanced the ability to sustain attention and reduced fatigue, anxiety and increased the level of mindfulness. It also significantly improved visuo-spatial processing, working memory and executive functioning.

Hasenkamp and Barsalou (2012) studied the effect of meditation experience on functional connectivity of disturbed brain networks. In this study it was found that the participants who experienced more meditations exhibited increased connectivity within attentional networks, as well as between attentional regions and medial frontal
regions. These neural relationships may be involved in the development of cognitive skills, such as maintaining attention and disengaging from distraction, that are often reported with meditation practice.

Mrazek, Franklin, Phillips, Baird and Schooler (2013) examined the effect of mindfulness training on working memory capacity and Graduate Record Examination GRE performance. A 2-week mindfulness training course improved GRE reading-comprehension scores, working memory capacity and reduced the distraction of thoughts and mind wandering. Through the result of this study it was suggested that cultivating mindfulness is an effective and efficient technique for improving cognitive functions.

Harpin, Rossi, Kim and Swanson (2016) studied the behavioral impact of mindfulness intervention on elementary school students. It was done to study the impact of 10-week Mindfulness program conducted on the students of 4th grade. Students were assessed through pretest and post test data on student behavior and academic performance. Qualitative feedback was given by the students. The result revealed that there was no significant differences on the mindfulness measures. However, there was a significant differences in prosocial behavior, emotional regulation, and academic performance within groups and across comparison groups. So, it may be concluded that Mindfulness intervention reduces stress level and regulates emotions and behavior.

Keller (2016) examined the impact of mindfulness training on dyslexic students. The sample consisted of 20 students from grades 2 to 5, who were identified to have learning disability and they were randomly assigned to experiment group and control group. 5-week intervention was given to the experiment group which incorporated phonics training, reading recovery and mindfulness. Control group was given only the phonics training for 5-weeks. The results have shown that mindfulness has significantly increase the response time during decoding and significantly lowered the heart rate and improvement in self-expression, motivation, self-confident.

Adhikari (2016) examined the effects of short-format mindfulness on affective and cognitive function. The sample of the study consisted of 40 Females and 32
Males, the total of 72 subjects were randomly divided into Experimental Group and Control Group. The intervention was given for 6 days, 25 minutes/day per session. The participants in the Control Group were given time for reading fiction and listening to music of their choice. The results of the study showed that there is an increase in attention, working memory and social emotional cognition. Also there was an increase in positive effect and a decrease in negative effect.

Malow and Austin (2016) investigated the impact of six-week mindfulness on emotional/behavioral disorder (E/BD). Students’ resiliency was assessed through pretest and posttest standardized test. t-test demonstrated that students showed improvement in personal mastery as measured by optimism, self-efficacy and adaptability scales. Besides this, students showed a significant decrease in the level of emotional reactivity. Qualitative as well as quantitative data showed that mindfulness activities should be incorporated into educational curriculum of students.

Tarrasch, Berman and Friedmann (2016) explored the effects of Mindfulness Based Stress Reduction (MBSR) intervention on reading, attention and psychological well-being among people with developmental dyslexia and attention deficits. Besides evaluating the attention function, psychological measures including mindfulness, stress, rumination, life satisfaction, depression, and anxiety and sleep disturbances were also evaluated. 19 adults were given the training of mindfulness for 2-months. The result showed the significant reduction of 19% of errors from their original number of errors and these errors occurred due to reading via the sub lexical rather than the lexical route. From this it can be concluded that mindfulness helped reading by keeping the readers on the lexical route. After mindfulness workshop, the rate of committing errors decreased, indicating decreased impulsivity. Besides this there was a significant improvement in mindfulness awareness, perceived stress, depression, state anxiety, and sleep disturbances. It was also concluded that mindfulness training did not affect specific type of errors and also did not improve dyslexia. It only affect the reading of adults with developmental dyslexia and ADHD. And this shows positive relationship between attention and reading. So, this can be concluded that mindfulness reduces impulsivity and improves sustained attention and which in turn improves the reading of adults with developmental dyslexia and ADHD.
Thierry, Bryant, Nobles and Norris (2016) examined the impact of a Mindfulness-Based Program on Preschoolers’ Self-Regulation and Academic Performance. The mindfulness program was designed to enhance their self-regulation in prekindergarten and kindergarten. There was improvement in planning, organization and working memory of these students. However, there was no difference in the receptive vocabulary of intervention group and control group in prekindergarten. At the end of kindergarten, the mindfulness group had higher vocabulary and reading scores as compared to control group. The findings suggested that mindfulness practices may be a promising technique that teachers can use in early childhood settings to enhance preschoolers’ executive functioning, with academic benefits emerging in the kindergarten.

Maynard, Solis, Miller and Brendel (2017) examined the effect of mindfulness based program on cognition, academic achievement, behavior and socio-emotional functioning of primary and secondary students. For this study 61 studies were reviewed but only 35 studies were taken for the meta-analysis. Intervention ranged from 4 to 28 weeks and number of sessions ranged from 6 to 125. Mindfulness based intervention showed a small but statistically significant positive effect on cognitive and socio-emotional outcomes. But there is not a significant effect on behavioral and academic outcomes.

From the literature reviewed above it can be said that mindfulness intervention has positive significant effect on the executive function, cognition, performance, memory, ability, attention and academic performance. Most of these studies show that mindfulness training helps in increasing attention (Bögels, Hoogstad, van Dun, Schutter & Restifo, 2008), improving mindfulness, rumination and performance as well as attention (Chambers, Lo & Allen, 2008), improvement in executive function (Flook, Smalley, Kitil, Galla, Kaiser-Greenland, Locke and Kasari, 2010; Thierry, Bryant, Nobles & Norris, 2016), improves memory for the task performance, development of cognitive skills (Hasenkamp & Barsalou, 2012; Mrazek, Franklin, Phillips, Baird & Schooler, 2013), improves academics performance (Harpin, Rossi, Kim & Swanson, 2016)improves sustained attention and reading (Tarrasch, Berman and Friedmann, 2016. But there are few studies which showed no significant effect of
mindfulness intervention on behavioral and academic outcomes (Maynard, Solis, Miller & Brendel, 2017). Since the effectiveness of mindfulness on reading ability has not been explored much, especially with dyslexics so, more efforts are required to fill the gaps.

2.2.3 Studies related to Mindfulness and Self-esteem

After reviewing the literature on mindfulness it was observed that there are quite good number of studies on the effectiveness of mindfulness on self-esteem. However not much work is done in India. And also, there is a paucity of researches related to the effectiveness of mindfulness on self-esteem of children with special needs. The studies quoted below forms the base line to work with dyslexic students.

Kabat-Zinn, Lipworth and Burney (1985) examined the clinical use of mindfulness meditation for the self-regulation of chronic pain. 90 patients with chronic pain were trained in a 10-week mindfulness meditation program. There was a significant reduction in measures of present-moment pain, negative body image and inhibition of activity by pain. Also, there was a reduction in anxiety, mood disturbances and depression and feelings of self-esteem was observed to increased irrespective of gender, source of referral and type of pain. Improvement observed during the program was maintained up to 15 months post-meditation program.

Thompson and Waltz (2008) examined the relationship between mindfulness, self-esteem, and unconditional self-acceptance. The study was done on a sample of 167 university students. It was found that there exists a positive correlation between mindfulness, self-esteem, and unconditional self-acceptance.

Biegel, Brown, Shapiro and Schubert (2009) had examined the effectiveness of mindfulness based intervention for treating the adolescents. This study was designed for adolescents in age group 14 to 18 years. The participants in the experimental group i.e. who were under mindfulness-based stress reduction program (MBSR), reported to have reduced symptoms of anxiety, depression and somatic distress in relation to control group who did not get any intervention. Also, the intervention group reported to have increased self-esteem and good quality of sleep.
The MBSR group under 5-month program showed a higher percentage of diagnostic improvement and significant increase in global assessment of functioning scores. So, through this study, it was evident that MBSR is beneficial for treating the mental health of adolescents.

Michalak, Teismann, Heidenreich, Ströhle and Vocks (2011) studied the effect of mindful acceptance on the relationship between self-esteem and depression. The sample consisted of 216 undergraduate students and using Rosenberg Self-esteem Scale, Kentucky Inventory of Mindfulness Skills, Beck Depression Inventory, self-esteem, mindful acceptance and depression respectively were measured. It was found that non-judgmental acceptance moderates the relationship between self-esteem and depression. Results showed that there is a direct relation between mindfulness and self-esteem.

Rasmussen and Pidgeon (2011) investigated the benefits of mindfulness on self-esteem and social anxiety. The present study was conducted on 205 undergraduate students of Australia. These students completed the Mindful Attention Awareness Scale (MAAS), the Rosenberg Self-Esteem Scale (RSES), and the Social Interaction Anxiety Scale (SIAS). It was found that mindfulness significantly predicted high levels of self-esteem and low levels of social anxiety. The analysis also reported the role of self-esteem as a partial mediator between mindfulness and social anxiety.

Hinterman, Burns, Hopwood and Rogers (2012) investigated the role of mindfulness in relation to cognitive coping strategies on a sample of 232 comprising males and females of college. Using regression and correlational design, it was found that mindfulness had a significant effect in the prediction of positive and negative perfectionism and life satisfaction. There was a positive correlation between high levels of mindfulness, self-esteem, proactive coping and high satisfaction with life; and negative correlation between lack of mindfulness, negative perfectionism, depression and rumination.
Pepping, O’Donovan and Davis (2013) investigated the positive effect of mindfulness on self-esteem. Four facets of mindfulness significantly predicted the increase in self-esteem which further predicted overall life satisfaction. The direct effects of brief mindfulness meditation was examined on state self-esteem. Through this study it was found that high level of mindfulness led to an increase in state self-esteem. So, it can be concluded from this research that mindfulness and self-esteem are related and mindfulness training has positive effects on self-esteem.

Randal, Pratt and Bucci (2015) analyzed researches in order to investigate the association between mindfulness and self-esteem and also the impact of mindfulness based intervention on self-esteem. 32 studies were included for this review purpose. Out of these 32, 15 studies explored the association between dispositional mindfulness and self-esteem and 17 studies investigated the impact of mindfulness based interventions on self-esteem. It was found that there was a positive correlation between dispositional mindfulness and self-esteem. Also, the majority of mindfulness based interventions resulted in increase in the level of self-esteem.

Keenan-Mount, Albrecht and Waters (2016) investigated the efficacy of mindfulness-based interventions on young people with Autism Spectrum Disorder and their caregivers. After reviewing the nine studies it was observed that the research in this field is still in the infancy stage. However, the review revealed that there is interdependent relationship between the caregivers’ level of mindfulness and their child’s pro-social behavior.

From the literature reviewed above it can be said that mindfulness intervention has positive significant effect on self-esteem, self-disclosure, high satisfaction with life. Most of the studies showed improvement in self-regulation (Kabat-Zinn, Lipworth &Burney, 1985), correlation between mindfulness, self-esteem and unconditional acceptance (Thompson & Waltz, 2008), self-esteem (Biegel, Brown, Shapiro & Schubert, 2009; Michalak, Teismann, Heidenreich, Ströhle & Vocks, 2011; Rasmussen & Pidgeon, 2011; Pepping, O’Donovan & Davis, 2013; Randal, Pratt & Bucci,2015), proactive coping and high satisfaction with life (Hinterman, Burns, Hopwood & Rogers (2012). Though numerous work has been done on the
effectiveness of mindfulness on self-esteem, but very few studies are available which shows the effectiveness of mindfulness on self-esteem of children with dyslexia.