### Chapter 3

**REVIEW OF RELATED STUDIES**

<table>
<thead>
<tr>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Studies Related To Inclusive Education</td>
</tr>
<tr>
<td>3.2 Studies Related To Differentiating Instruction</td>
</tr>
<tr>
<td>3.3 Studies Related To Learning Stations/Centers</td>
</tr>
<tr>
<td>3.4 Studies Related To Tiered Lessons</td>
</tr>
<tr>
<td>3.5 Studies Related To Graphic Organizer</td>
</tr>
<tr>
<td>3.6 Studies Related To Learning Disability</td>
</tr>
<tr>
<td>3.6.1 Studies Related to Self Concept of LD</td>
</tr>
<tr>
<td>3.6.2 Studies Related to Achievement Motivation of LD</td>
</tr>
</tbody>
</table>
REVIEW OF RELATED STUDIES

Introduction

Making an extensive review of the related studies is a vast component of research process. In the review, the Investigator’s re-views’ the ‘related views’ already established by other researchers in the field in which the current study is undertaken. As theoretical review of the related literature provides theoretical foundations of the problem, same way the review of related literature provides practical foundation of the problem. The major purpose of reviewing the studies is to determine what has already been done that relates to the thrust area of a study. It not only avoids unintentional duplication, but also provides insights necessary for the logical framework into which the problem fits.

According to Merten (2010) review of literature establishes historical perspective on the intended research provides a vision of the need for additional research and enables the researcher to develop a conceptual framework for the research. It can also be used as a substantive and methodological rationalization of the study and it provides guiding hypotheses, suggestive methods of investigation and comparative data for interpretative purposes.

A research study is never conducted in vacuum. Hence an attempt was made, as far as possible to find out what has already been done. In the present chapter, studies in close proximity to the present study that have been done in India and abroad were discussed and reviewed. The emerging findings have also been reported systematically. After reviewing the studies and literature, researcher classified them under the following areas of concern.

3.1 Studies Related To Inclusive Education

3.2 Studies Related To Differentiating Instruction

3.3 Studies Related To Learning Stations/Centers

3.4 Studies Related To Tiered Lessons

3.5 Studies Related To Graphic Organizer
3.6 Studies Related To Learning Disability.

3.6.1 Studies Related to Self Concept of LD

3.6.2 Studies Related to Achievement Motivation of LD

The abstracts of related researches are presented here in descending chronological order.

3.1 Studies related to Inclusive Education

Inclusive education is an approach towards educating the children with disability and learning difficulties with that of normal ones within the same roof. It seeks to address the learning needs of all children with a specific focus on those who are vulnerable to marginalization and exclusion. For the purpose of the study, the Investigator trace out a considerable literature exists in the field of Inclusive Education. An attempt has been put here to bring some of these studies which are in close proximity with the present study.

**Anastasia et al. (2014)** conducted a study to focus on regular and special preschool teachers’ understanding of inclusion and it is revealed that teachers hold conflicting and restrictive beliefs about inclusive education. Further, the teachers’ accounts indicated that most of the children with disabilities were experiencing significant difficulties in their engagement during free-play as well as structured/semi-structured activities. Lastly, teachers identified a range of strategies that they deployed for promoting children’s involvement in classroom activities.

**Hemmings et al.'s. (2013)** study results show that the practices of university inclusive education are enabled and constrained by conditions beyond lecturers’ control, and that transforming university inclusive education requires transforming those conditions as well as the lecturers’ professional practice knowledge.

**Cowley (2013)** conducted a study to examine the integration of technology with students with disabilities, particularly the use of one-to-one computing when used in inclusive classrooms. The findings from teacher and student data revealed perceived learning benefits and barriers of using one-to-one computing. One significant benefit of one-to-one computing was how it assisted the teacher's integration of 21st century skills in the curriculum. This integration of one-to-one
Chapter 3

Review of Related Studies

Laptops leveled the playing field for students with disabilities by increasing access, promoting social benefits, and practicing the content at their level.

Black-Hawkins (2012) in a study concentrated on three key aspects: the main contents and concerns of the texts, which learners are, and are not, the intended focus of their guidance, and how the process of developing inclusive practices is portrayed. Whilst the findings from this analysis raise important concerns about the limitations of such texts, they also highlight the challenges, more generally, of improving professional development opportunities for teachers who seek to be more inclusive in their everyday classroom practices.

A study on the problems of mainstream educators in the Inclusive Educational system was done by Vidyamol (2012) and it was revealed that mainstream educators problems in the inclusive educational system are not significantly influenced with respect to the age of mainstream educators, school affiliation of mainstream educators, their years of experience, their gender and locality of the school and religion. The result shows teachers in mainstream were found lacking necessary knowledge and skills for managing the special education needs of children with disabilities.

Klicpera et al. (2012) in a study concludes that many parents of children in inclusive classes were satisfied with their children’s schooling than those of children in special schools. The analysis of the causes for discontent showed that dissatisfied parents had chosen the type of school under less favourable conditions and a larger part of them are still not convinced of this necessity of additional help. This applied to parents of pupils in inclusive classes as well as to those of pupils in special schools.

Ziegler (2010) in a qualitative case study used observations and interviews to examine the practice of differentiation by twelve collaborative middle school reading teachers in an inclusive school that has shown a decrease in the achievement gap for students with disabilities on end of year tests on state standards. The results showed that four of the six teams possessed a comprehensive knowledge of the practice of differentiation and the data available to assist in planning lessons. Some differentiation was observed in each of the six classrooms.

Argyropoulos and Nikolaraizi (2009) conducted a study and the findings of the study indicate that the implementation of the action research network resulted in
Chapter 3

Review of Related Studies

the development of inclusive and collaborative thinking and the adoption of relevant teaching practices which promoted the children’s access to the curriculum and supported the teachers’ and student teachers’ professional development.

Murtha (2008) examined the perceptions of executives at Teacher Education Institutions (TEIs) regarding the preparedness of pre-service general education elementary candidates to instruct in an inclusive learning environment. The qualitative results of the study revealed that fieldwork setting which offer a least restrictive learning environment (LRE) for diverse group of students of varying abilities that takes place in an authentic inclusive setting best prepares candidates for inclusion. In this environment candidates should be exposed to collaboration between professionals.

Mc Gregor and Vogelsverg (2008) conducted a study on ‘inclusive High School Service Learning Programmers; Method for and barriers to inclusive students with disabilities and concludes that barriers clustered around the areas of teacher attributes and experience, organizational structure, planning, resources and student characteristics.

Ferguson (2008) conducted study on international trends in inclusive education: The continuing challenges to teach each one and every one. The paper reviews the status of efforts being made to meet the challenges to make inclusive practices available to everybody, everywhere and all the time. It also describes the broad changes that have to achieve to make progress towards inclusive schooling.

The purpose of the study by Moriarty (2007) was to identify barriers to the adoption of inclusive teaching methods for diverse learners and students with disabilities and to propose ways to breakdown these barriers. The most significant among the barriers reported were the lack of an inclusive mindset, lack of knowledge about pedagogy, high teaching loads, and lack of time for instructional development.

O’Brien (2006) in her study attempted to address the need for incorporating inclusive practices by investigating the potential for students with learning disabilities to implement Literature Circles by viewing video models and the it offered, Cooperative learning, in the form of Literature Circles, as a highly effective method for laying the groundwork for inclusion. The full sample of students, including students with learning disabilities, demonstrated significantly more effective
implementation of Literature Circles. Students in the video model focus group indicated that they benefited from the explicit, positive peer models demonstrated in the video.

**van der Boom (2005)** conducted a qualitative study and explored 5 teachers’ perspectives on inclusive education. The literature reviewed gives a historical background of special education as well as discusses a number of current methods and techniques that have been implemented as a means to include exceptional students in regular classroom settings. This study found that the understanding of multiple intelligences and Differentiating Instruction might assist a teacher to better meet the needs of exceptional students within inclusive classrooms.

**Koski (2005)** in her thesis addresses the history of inclusion, reading and inclusion, and strategies outlined as successful in the Inclusive set up. Results indicate the need for specific strategies to teach reading instruction. These strategies include comprehension building, word identification, and study strategies. In addition, access to content knowledge through designated curriculum, Differentiating Instruction, and high interest grade level books are critical to reading instruction in inclusive classrooms.

**Eaton (2004)** conducted a study and was found that General education students in third-grade inclusive classrooms demonstrated greater academic gains in reading as compared to general education students in traditional classrooms. The use of continuous assessment to systematically differentiate and individualize instruction for all students in inclusive classrooms helped general education students make gains in reading achievement.

**Cook (2004)** investigated the attitudes of inclusive teachers toward their students with disabilities. Results indicated that (a) included students with disabilities were significantly over represented (in comparison with non-disabled students) among teacher’s concern, indifference and rejection nominations. (b) included students with mild disabilities were significantly over represented (in comparison with students with severe disabilities) among teachers concern nominations; and (c) included students were significantly more likely to receive concern nominations in high-socio economic status (SES) school districts and from experienced teachers, and
to be nominated in the rejection category in classes with no paraprofessional and in high –SES school districts.

Knight-McKenna (2002) in her qualitative study revealed two major findings. The first was that study participants did not express a unified perspective on learning disabilities. The second major finding was that the participants' comments indicated that factors other than student disability affected labeling practices. Teachers' comments suggested that labeling practices were affected by (1) the type of community in which the school was located (i.e. urban, rural, or suburban), (2) the positive and negative consequences of labeling for students, (3) the socioeconomic status of students, and (4) the teachers' desire to gain information and learn strategies. The findings are related to current concerns in the learning disabilities field.

Glaeser (1998) conducted a study to determine the effects of a model for inclusive reading instruction called the Inclusive Strategies Instruction Model (ISI Model). Results indicated that the instructional model promoted reading comprehension achievement for students with reading disabilities and normally achieving students. Students at-risk for failure and gifted students achieved at higher levels but these were not statistically significant. Teachers were generally satisfied with the model and felt it was beneficial for all students except for gifted.

A year long researcher-teacher professional development group with a next year follow up was conducted by Vaughn, Suchmm and Kligner (1998) with seven general education teachers from two elementary schools. The two schools had recently restructured their special education programme to include students with LD in the general education class fulltime. Teachers were taught four reading and writing practices. All but two of the teachers partially or completely implemented the practices during the nine week period. Sustained implementation during the school year was maintained by four of the seven teachers, and three of the seven teachers continued high implementation of the instructional practices during the next school year. An unanticipated, yet positive outcome occurred during the year following the year-long professional development program.

Forlin, Douglas and Hattie (1996) in their research addressed the question of educators’ beliefs about the rights of children with a disability to be included in
regular schools. Acceptance of integration was lower for the child with an intellectual disability than for the child with a physical disability. Acceptance decreased as the degree of severity increased. Educators were more accepting of part-time integration, but mostly only for the child with a mild or moderate disability. Educators from the Education Support Centers were more accepting than were their regular school peers and as educators became more experienced they became less accepting of inclusion.

**Trends in the Review are indicated below:**

The above mentioned studies provide illuminating insights into the implementation of Inclusive education in the regular schools. From the review of related literature, it becomes clear that Inclusive approach has emerged as an effective pedagogical practice in advanced countries of the world. This finding is supported by the researches done by Vaughn and Klingner (1998), Glaeser (1998), O’Brien (2006) & Heo (2007). But studies conducted in India are very rare and it reveals that it has not come up with an effective pedagogic practice. Majority of the studies point towards the impediments and constraints to be overcome and opportunities to be provided for promoting inclusive practices. The study done by Vidyamol (2012) revealed teachers in the mainstream were found deficient of necessary knowledge and skills for managing the special education needs of children with disabilities. A study conducted by Bradshaw and Mundia (2006) proved that negative attitudes of teachers can be a major barrier when attempting to include all learners in the educational system.

A great deal of researches has been conducted on the effects of Differentiating Instruction as an Inclusive practice on Learning Disabled student’s achievement and social and emotional functioning. Researches show that when DI is implemented correctly, the results are as good as or better than traditional teaching-learning process in Inclusive classes. The findings of the studies conducted by the researchers Eaton (2004), supports that LD students make gains in reading achievement when continuous assessment was used to differentiate and individualize instruction along with all students in inclusive classrooms. The need for Differentiating Instruction is also supported by KosKi (2005), Vander Boom (2005) and Ziegler (2010).

From the close review and analysis of these studies, it can be concluded that when practiced effectively with appropriate strategies like, Differentiating Instruction,
educators can make inclusive practices a success for Learning Disabled as well as for normal students of the class. This fact had urged the Investigator to explore, the scope of Differentiating Instruction for effectual transaction of curriculum in Upper primary Inclusive Classes.

3.2 Studies related to Differentiating Instruction

To Differentiate Instruction is to recognize students varying background knowledge, readiness, language, preferences in learning, interests, and to react responsively. Differentiating Instruction is a process to approach teaching and learning for students of differing abilities in the same class. The intent of Differentiating Instruction is to maximize each student’s growth and individual success by meeting each student where he or she is, and assisting in the learning process. The next few sections of the review are set apart to understand the impact of Differentiating Instruction and the need to give such practices in heterogeneous classrooms to maximize each student’s success by meeting the individual differences.

Several recent studies have shown the drawbacks and positive outcomes from the use of DI

The study by Dixon et al. (2014) focused on teacher efficacy as a way to explain teacher willingness to differentiate instruction. They found that a greater number of professional development hours in differentiation of instruction were positively associated with both teacher efficacy and the teacher's sense of efficacy beliefs. This study demonstrated that teacher efficacy is an important dimension in implementing the process of differentiation regardless of what level or what content area the teacher taught (elementary, middle, or high school).

Roiha (2014) investigated differentiation in content and language integrated learning (CLIL) and the results revealed that the teachers perceived differentiation in somewhat different ways. In general, the teachers differentiated their CLIL education in a fairly versatile manner with various teaching arrangements and methods and focused on the differentiation of the language. In addition, the teachers' perceptions of differentiation correlated with the differentiation practices they used. The greatest challenges of differentiation involved time, material and physical classroom environment.
Ruys et al. (2013) conducted a case study aims to investigate the (congruent) realization of Differentiating Instruction in teacher education using ethnographic tools. The results indicate that the observed teacher educator demonstrated limited forms of differentiation, largely without providing meta-commentary. Therefore, she is not a role model on the subject of Differentiating Instruction in the view of student teachers.

Jager (2013) conducted a study among teachers to identify the existing challenges that implementation of Differentiated learning activities faces and to provide possible guidelines on how to differentiate in the classroom. From the data analysis it was found that the respondents in this study had a negative perception of the implementation of differentiated learning activities and experienced several challenges in implementing these.

Williams (2012) conducted a quantitative quasi-experimental research and examined the effects of Differentiating Instruction on seventh grade student performance on standardized mathematics assessments using a repeated-measures design. Significant differences between students who received Differentiating Instruction compared to students who were instructed using traditional lecture-based strategies were inconsistent for each research trial.

Thornton (2012) investigated the use of Differentiating Instructional teaching methods as a means to help struggling adolescent readers achieve a better understanding of their assignments. Results revealed significant differences between standardized reading test passing rates before and after implementing differentiation. Differentiation provides an avenue to maximize student learning and thinking. Implications for positive social change include understanding instructional practices that can lead to improved reading in struggling readers.

Stevens (2012) in an exploratory study described elementary, general-education teachers' reports of self-efficacy in using evidenced-based instructional strategies to differentiate instruction for students with disabilities Data analyses revealed that elementary, general-education teachers in this study reported feeling confident in using Routine Strategies and Content Strategies. Notably, elementary, general-education teachers reported feeling very confident in using On-the-Spot Strategies.
Santangelo and Tomlinson (2012) using a cross-sectional survey design, a study was conducted to explore teacher educators' perceptions and use of Differentiating Instruction practices. Although the results suggest some congruence between teacher educators' beliefs and practices and Tomlinson's model, there was little indication that teacher educators implement a comprehensive model of differentiation. This finding is consistent with previous research documenting that teacher educators have yet to fully recognize or realize the benefits associated with modeling. It also raises concerns about whether teacher educators are adequately responsive to candidates' varied needs and are effectively preparing candidates for teaching in classrooms with increasingly diverse and complex student populations.

Firmender (2012) examined the range of reading fluency and comprehension scores of students in five diverse elementary schools, including a gifted and a talented magnet school. Results revealed a range in reading comprehension across all schools of 9.2 grade levels in Grade 3, 11.3 in Grade 4, and 11.6 in Grade 5. A similar wide range of oral, reading fluency scores was found across all elementary schools, as students scored from below the 10th percentile to above the 90th percentile. These results demonstrate the wide range of reading achievement in diverse populations of students, including gifted students, and the need for teachers to differentiate both reading content and instruction to enable all students to make continuous progress in reading.

Barnes (2012) done a study to identify teachers who successfully Differentiating Instruction (D.I.) and those who were unsuccessful in Differentiating Instruction based on student achievement. Many of the teachers who did not differentiate perceived themselves as going to great lengths to meet the needs of all learners when they actually taught lessons at one level Many of the teachers who Differentiating Instruction did not perceive themselves as teachers who varied instructional strategies based on the needs of students.

Venable (2011) investigated five different instructional strategies and their effects on increasing active student engagements, higher order thinking, and spiritual growth during adult Sunday school lessons. The findings from the teaching strategies survey indicated that the adult students perceived that taking notes, graphic organizers, homework, and summarization helped them to learn the Sunday school
lessons. Furthermore, the majority of students perceived that cooperative helped them to learn the lessons. The findings also showed that students perceived that note taking, graphic organizers, cooperative learning, and summarization helped them to be actively involved during the lessons.

Sheehan (2011) explored in a qualitative phenomenological study the perceptions, attitudes, or concerns of nine K-5 elementary teachers regarding the implementation of Differentiating Instructional strategies in their classrooms. Findings of the study revealed that teachers perceive Differentiating Instruction as an effective tool to meet student needs, even though Differentiating Instruction is time consuming for the teacher to plan. The results also revealed that teachers use flexible groups based on readiness during reading instruction, but many would prefer to participate in professional development regarding implementation during math instruction. The research also revealed that many of the techniques and strategies used by teachers when implementing Differentiating Instruction supported brain research. By addressing the needs of the brain, teachers influence student retention of content. Differentiating Instruction is a tool that allows teachers and students to strive for attainment of a common goal.

Reis et al.(2011) in an experimental study examined the effect of a differentiated, enriched reading program on students’ oral reading fluency and comprehension. Using multilevel modeling, significant differences favouring the differentiated program were found in reading fluency in 2 schools, and in reading comprehension in the high-poverty urban school, with no achievement differences in the remaining schools. These results demonstrated that an enrichment reading approach, with Differentiating Instruction and less whole group instruction, was as effective as or more effective than a traditional whole group based approach.

Nel et al. (2011), conducted a study and revealed that the most significant barrier to learning in the inclusive education system of South Africa is the curriculum and differentiated pedagogy has been found to be an effective adjunct to inclusive practices in schools. Subsequently a special school in Gauteng implemented the “Learn NOT to Burn” (LNTB) fire safety programme through the provision of Differentiating Instructional adaptations and accommodations for learners with severe intellectual disabilities (SID). The findings focus on the relevance of Differentiating
Instructional practices such as visual stimulating focused activities, hands on learning and the importance of incorporating music in ensuring access to the LNTB curriculum for the SID population.

**Kesteloot (2011)** conducted an action research project and investigated how differentiation of mathematics instruction affected students' attitudes about themselves as mathematicians as well as the impact on students' mathematics achievement when they received math instruction that was differentiated according to their learning styles. It was also found that there was significant growth in the control group's and the experimental group's math achievement. However, there was not a significant difference in math achievement growth when comparing the control group's math achievement to the experimental group's math achievement.

**Gilbert (2011)** in a sequential mixed-methods study examined teacher perceptions of reading instruction as well as the effects of Differentiating Instruction and other instructional strategies on student achievement in reading in a primary school. The OAS benchmark results indicated that the reading comprehension of students in the differentiated classroom was significantly higher than the students in the traditional classroom. The implications for positive social change are providing teachers, educational leaders, and professional development facilitators with information on Differentiating Instruction that can help increase the performance level of all students in reading.

**Ziegler (2010)**, in a qualitative case study used observations and interviews to examine the practice of differentiation by 12 collaborative middle school reading teachers in a school that has shown a decrease in the achievement gap for students with disabilities on end of year tests on state standards and the results showed that 4 of the six teams possessed a comprehensive knowledge of the practice of differentiation and the data available to assist in planning lessons.

The purpose of the research conducted by **King (2010)** was to examine teachers' knowledge as well as their perception regarding the implementation of Differentiating Instruction. The findings from the study suggest that teachers' perception about and knowledge of Differentiating Instruction was directly related to their practice of using it in inclusive classrooms. The results indicate that there was a
Chapter 3

Review of Related Studies

A statistically significant relationship was found between teachers' perception about and knowledge of Differentiating Instruction and their practice of using it in inclusive classrooms. It was also revealed that content knowledge/skills was the most significant factor that affected teachers' decisions for using Differentiating Instruction in inclusive classrooms. Time was also identified as a factor.

Hockett (2010) in her qualitative study used grounded theory methodology to explore the influence of Lesson Study on how teachers plan for, implement, and understand differentiation. Findings from this research indicated that Lesson Study enhanced the flexibility of teachers' planning and instructional frameworks, the application of new instructional strategies, and proactive management of differentiation.

The purpose of the study conducted by Lange (2009) was to fill a gap in research that looks at how teachers at the high school level begin using Differentiation methodology in their classroom and the pros and cons of using this methodology in their classrooms. Results showed that even though the teachers in the study found strategies that were differentiated in style helpful to them in their classrooms, daily activities like planning and management became more difficult when trying to differentiate. Planning lessons differentiated in style and managing students' behavior in the classroom when students were engaged in differentiated activities sometimes caused the teachers to feel anxious and overwhelmed. Benefits of Differentiating Instruction that were seen with the students included an increase in autonomy and self-esteem.

The purpose of the study conducted by Luster (2008) was to contrast whole-class and Differentiating Instruction to determine which is the most effective instructional strategy in an inclusive classroom environment. Responses were analyzed and the tests revealed statistically significant differences in student achievement levels between students taught utilizing whole-class instruction and Differentiating Instruction as well as differences in teachers' attitudes.

The purpose of the study done by Gray (2008) was to examine Differentiating Instruction as it was used to address the needs of Learning Disabled students in general education classrooms. The study measured teachers' stages of concern, ascertain teachers' levels of use; and sought to identify a relationship between
Differentiating Instruction and student achievement Examination of the quantitative and qualitative data from the four schools indicated teachers’ high levels of self concerns and management concerns coupled with low levels of consequence and collaboration concerns negatively impacted teachers’ abilities to work successfully together to differentiate instruction for learning disabled students in the general education classroom. Secondly, examination of the same data indicated teachers’ low levels of use of Differentiating Instruction were a result of insufficient degrees of training, support, and resources and resulted in no significant achievement difference between students’ whose instruction was differentiated as compared to students’ whose instruction was not differentiated.

**Simpkins (2007)** examined the effect of differentiated curriculum enhancements with peer tutoring on the achievement of at-risk and normally achieving students in science. A crossover design was implemented in three fifth grade inclusive classes, consisting of typically achieving students, students at-risk, and students with learning disabilities. Overall findings of the study revealed a significant interaction between experimental condition and treatment order, suggesting an advantage for students using differentiated curriculum enhancements.

**Miller (2007)** conducted a study to examine the ways of effective differentiation of instruction in reading relates to classroom management, and how the two work together to help students develop reading skills in inclusive classroom settings. The results revealed that there is a significant negative relationship between teacher's use of differentiated reading instruction and classroom averages on the assessments of the Oral Reading Fluency subtest. The negative correlation indicated that when teachers differentiate reading instruction, they do so in classrooms with the most struggling readers, and that differentiation is based on student need. Furthermore, the multiple regression analysis indicated that teachers' use of differentiated reading instruction and classroom management structures enables students to make the same gains in fluency regardless of reading ability. Teachers who implement these strategies are leveling the playing field, and in essence, maintain the gap between struggling and proficient readers.

**Huss-Keeler and Brown (2007)** examined the strategies used, challenges faced and lessons learned in meeting the diverse learning needs of graduate initial
certification and graduate certified teachers in the same cross-listed early childhood mathematics class. Using a Differentiating Instructional approach including knowing the candidates and their needs, scaffolding candidate learning and using a variety of grouping arrangements, were found to help candidates successfully benefit from a class that had a diversity of candidate needs.

D’Angelo (2006) examined the viability of gradually and incrementally implementing flexible Differentiating Instruction, or what is commonly known as flexible "ability grouping", in primary and middle schools. The findings of this research indicated that students who were treated with a flexible Differentiating Instruction grouping approach developed reading comprehension skills achieved at a greater rate than students who were treated with a whole class model and a fully differentiated model.

Johnsen (2003) conducted a study using undergraduate teachers Differentiating Instruction to suite different ability levels. Student teachers in this context were encouraged to differentiate content and process, using learning centers, different reading materials and different strategies. The study revealed that the use of differentiated techniques proved to be engaging stimulated student interest and providing a gratifying experience for the undergraduate teachers, while the undergraduate teachers appeared to benefit from a rewarding experience.

Affholder (2003) conducted a study to investigate the Differentiating Instructional strategies utilized by teachers, and it was concluded that teachers who used these strategies more intensively showed improved individual perception and adopted greater responsibility for student growth. In addition, the study revealed that teachers employing higher levels of differentiated techniques experienced increased feelings of self-efficacy and demonstrated greater willingness to try new instructional approaches. It would further appear that Differentiating Instruction was favored by more experienced teachers who were familiar with the curriculum they taught and who had received extensive training prior to implementing these methods in the classroom.

Wertheim and Leyser (2002) conducted a study, to examine the efficacy beliefs and choices of Differentiating Instructional strategies needed for effective
teaching in inclusive classrooms. Findings revealed that the Personal Teaching Efficacy factor (PTE) was related to choices of instruction, but the Teaching Efficacy factor (TE) was not. Prospective teachers focusing on junior high education obtained the highest PTE scores compared with those focusing on early childhood and elementary education, and participants focusing on early childhood education obtained the highest TE scores. Participants expressed intent to make adaptations directed toward all students and less willingness to use Differentiating Instruction.

McAdamis (2001) reported significant improvement in the test scores of low-scoring students, following the use of Differentiating Instruction. Apart from this tangible impact of the Differentiating Instruction model, teachers in this study indicated that their students were more motivated and enthusiastic about learning. This study further reflected the whole-school change which Differentiating Instruction necessitates-efforts included professional development, mentoring and intensive planning. Teachers were initially resistant to change, however strategies like peer coaching, action research, study groups and workshops offered on-going support and feedback. Teachers were eventually convinced of the benefits of differentiation and were keen to try other differentiated lessons in the year following. This study confirms the need for whole-school and whole-district change – without these essential support structures and the co-operation of all participants, it is unlikely that any differentiated program will endure.

Trends in the Review are indicated below:

The above mentioned studies provide enlightening insights into the implementation of Differentiating Instruction in the regular schools. From the review of related literature, majority of the studies point towards that use of Differentiating Instructional approach including knowing the candidates and their needs, scaffolding candidate learning and using a variety of grouping arrangements, were found to help candidates successfully benefit from a class that had a diversity of candidate needs and it has emerged as an effective pedagogical practice in advanced countries of the world. This finding is supported by the researches done by McAdamis (2001), D’Angelo(2006), Simpkins (2007), Miller (2007), Reis (2011, Nel, Kempen and Ruscheinski (2011),, Thornton (2012), Williams (2012).
etc. At the same time some of the studies, Gray (2008), Huss-Keeler and Brown (2007), Lange (2009), King (2010) point towards the impediments and constraints to be overcome and opportunities to be provided for promoting Differentiating Instruction practices. It was found that teachers’ low levels of use of Differentiating Instruction were a result of insufficient degrees of training, support, and resources and resulted in no significant achievement difference between students whose instruction was differentiated as compared to students whose instruction was not differentiated.

A great deal of research has been conducted on the effects of Differentiating Instruction as an Inclusive practice on Learning Disabled student’s achievement and social and emotional functioning. Researches show that when DI is implemented correctly, the results are as good as or better than traditional teaching-learning process.

3.3 Studies related to Learning Stations/Centers

Stations, Centers and learning zones are synonymous terms for designated areas where students can find hands-on, learner-focused, problem-solving activities. Each one is designed to provide students with opportunities to explore, practice and work with content information. The activities may reteach, extend, and enrich current learning areas or lead students to discover new subject matter. Students work on activities purported to achieve certain objectives. Because stations or learning centers are student centered rather than teacher centered, it is conducive to individual learning.

Several studies have shown positive outcomes from the use of Learning Stations/Centers. Some of them are outlined below.

Julie (2011) conducted a study to determine the effectiveness of Learning Centers in increasing student motivation and enhancing the knowledge of multiplication facts of third grade students. The results of the collected data revealed that learners enjoyed working in Centers and felt it helped them remember their facts. Post test scores resulted in proficient knowledge by many students. While some still struggled, this student motivation may lead to greater achievement, thus, the use of learning centers in math will continue in this third grade class.
The purpose of the article by **DiCarlo & Vagianos (2009)** is to share strategies, consistent with naturalistic teaching methods, which support and enhance the inclusion of young children with special needs in early childhood environments. It is important for teachers to identify if children are neglecting interest centers and to plan an intervention that will engage them in a variety of activities. These strategies build on high-quality early childhood programs to facilitate child-specific instruction by helping teachers (a) examine the environment, (b) observe engaged toy play within classroom learning centers, (c) identify preferred qualities of toys, (d) embed toys with preferred qualities within least preferred learning centers, and (e) determine and use required levels of adult prompting to elicit learning objectives.

**King-Sears and Margaret (2007)** explores basic questions and suggestions about how to design and deliver learning center activities. According to them, Learning centers are one organizational method that can be used to provide students with small-group instruction, practice and review activities, and increased active engagement in learning.

**Bannier (2007)** explores factors that motivate developmental mathematics students to seek available assistance with their coursework, showed statistically significant correlations between the number of math learning center visits and various variables. The data suggests that younger college students are less inclined to seek mathematics learning center assistance than returning adults and that students with high levels of mathematics confidence are less inclined to proactively seek academic assistance. The data suggests learning center coordinators might consider exploring ways to reach out to these targeted areas to develop solid academic skills.

In an article, **King-Sears, and Margaret E (2005)** describes suggestions for designing and managing Learning Centers, including a Center for small group instruction. Organizing and designing Learning Center activities requires planning so that students are engaged in meaningful learning tasks and the tasks are differentiated for varied learning levels. Finally, ideas for monitoring student performance on Learning Center tasks are provided.

This qualitative study by **Elijah (2004)** was designed to study one of these methods. Fifty-five Students were taken out of the mainstream classroom and placed into a Learning Assisted Program (LAP) that uses Learning Centers to keep students learning in school. Using data collection such as observations, students surveys, focus
groups and teacher and student interviews, it was found that (a) students increased in
their mathematics ability level from the beginning to the end of the year, (b) students
enjoyed their experience in learning centers, and (c) students had less behavior issues
in the LAP math program.

This study by Celeste (2003) explored the contextual elements surrounding
Literacy Centers in a first-grade classroom and how these elements influence the
literacy learning of children. Literacy Centers, in this case, were defined as specific
areas where children worked in small heterogeneous groups on activities that focused
on or integrated literacy. The study yielded five contextual elements: teacher
expectations, self-monitoring behaviors, materials and resources, social interactions,
and physical design. These elements together comprised the overarching context
surrounding literacy centers and individually and collaboratively influenced the
children's literacy learning. The teacher's awareness of the context surrounding
literacy centers and her culturally responsive approach in conjunction with the
aforementioned elements helped the students connect decontextualized literacy
learning to a familiar context.

The purpose of the study by Yookyung (2003) is to investigate whether
effective Learning Centers can contribute to the maintenance of children's helping,
sharing, caring, and cooperating behaviors during the remainder of school hours.
Children's prosocial behavior can be found more frequently at the schools with
extensive Learning Centers than those with limited Learning Centers, both group
activity and individual play. Children performed almost three times as many prosocial
behaviors during free play as they did during group activity. The Dramatic Play
learning area is the most frequently visited area for children at the schools with
extensive learning centers, followed by Literacy, block, manipulative, and art learning
areas.

Kosmoski and Vockell (1978) in a study examined the effect that an open-
concept program using a learning-center complex had on pupils’ academic
achievement and attitudes. The random-assignment technique used in this study
suggests that the observed differences resulted from itself, not from extraneous factor
such as maturation, pretesting, or selection bias. The results strongly indicate that
pupils who used the learning centers learned more than pupils who did not. In
addition the pupils who had participated in the learning centers felt better about their learning environment than pupils who had not participated.

_Etaug (1975)_ conducted a study on 216 children at three grade levels (second, fourth, and sixth) served in one of three experimental conditions. One group spent an average of 75 minutes a week (90 minutes for disadvantaged children, 60 minutes for non-disadvantaged children) in a learning center for a period of two months, another group served in a Hawthorne control condition for approximately the same length of time, and a third group received no treatment. Learning center participation had little influence on the behaviours’ measured, although disadvantaged children showed some gains relative to non-disadvantaged children in teacher-rated math skills and achievement responsibility.

The purpose of the experiment by _Allender (1969)_ was to determine whether fifth grade children can be taught to increase their inquiry activity through the use of an environment designed to teach inquiry skills. It was expected that the use of materials designed to teach inquiry skills in a learning center would have a significant effect on inquiry activity. The second purpose of the experiment was to determine whether the degree of structure in terms of teacher direction in the same environment would have a differential effect on inquiry activity. Prior to the time of the experiment, each child was instructed and given experience using inquiry materials. It was found that, except for time spent inquiring in the open environment group, all elevations were significant for the teaching groups; none of the elevations were significant for the control group.

**Trends in the Review are indicated below:**

The above-mentioned studies provide informative insights into the implementation of Learning Stations as a part of effective instruction in the regular schools. From the review of related literature, it was concluded that disadvantaged children showed some gains relative to non-disadvantaged children (Etaug (1975)), increases inquiry activity (Allender (1969)), improved academic achievement (Kosmoski and Vockell (1978)), increased student motivation and enhanced knowledge (Julie (2011)). _King-Sears &Margaret (2007)_ asserts that Learning centers are one organizational method that can be used to provide students with small-
group instruction, practice and review activities, and increased active engagement in learning.

3.4 Studies related to Tiered Lessons

The technique of ‘Tiering’ provides most advantageous learning for all students in the classroom by allowing the same concept to be developed using differing levels of instructional activities. When teachers tier assignments, they make slight adjustments within the same lesson to meet the needs of students. All students learn the same fundamental skills and concepts but through varying modes and activities. The tiers appropriately challenge students at their ability levels. The teacher’s challenge is to make sure all tasks, regardless of the tier level, are interesting, engaging, and challenging.

The studies covered this area is given below.

The purpose of the research project by Collins (2013) was to design and implement choice activities like tiered-laboratory investigations and activity menus within the chemistry classroom to more appropriately teach and assess chemistry concepts and assess understanding of those concepts. Gains in conceptual understanding and student motivation were documented. These findings indicated that allowing choice and leveling of skills to achieve the same conceptual understanding promoted student learning and the overall enjoyment and motivation for learning.

The purpose of this article by Benedict et al. (2013) is to inform teachers about the dangers of misalignment between core (Tier 1) instruction and Tiers 2 and 3 supplementary instruction for struggling readers and students with learning disabilities. He asserts that misalignment between core and supplementary instruction is problematic for students at risk of academic failure because it may result in heightened confusion and decreased practice opportunities. Lesson study (LS), a collaborative planning process, can be used as a vehicle to support general and special education teachers in aligning their instructional goals, strategies, and practice opportunities throughout the response to intervention (RTI) multi-tiered instructional framework.

The study by Roberts et al. (2013) addressed the effects of multiyear, response-based, tiered intervention for struggling readers in grades 6-8. Three-year
trajectories were fit, with the results representing likely multiyear trends for the three groups. Treatment students, on average, outperformed business-as-usual students. Treated students also outperformed the group of typical readers when achievement was characterized in terms of slope over time.

Nancy (2013) conducted a pre-experimental study, in which two groups of high school students (with and without diagnosed disabilities) were assigned to two tiers of intervention. The double dosed students received instruction with the core Algebra I curriculum and the Algebra Readiness program whereas the single dosed students only received the Algebra Readiness intervention. It was found that the students who were double dosed showed significant growth on the end of year, grade level assessment as compared to those students who only participated in the intervention.

Haynes (2012) analyzed the impact of implementing response to intervention (RTI), a three-tiered system of intervention of increasing intensity, for reading. Specifically, this comparative, interrupted time-series design tested for effects in school outcomes overall and for students receiving special education. Analyses suggest early positive effects of implementation on overall third grade reading scale scores.

Buckingham and Beaman (2012) examined the efficacy of a Tier-2 small group literacy intervention (‘MiniLit’) designed for young readers who are still struggling after experiencing whole-class initial instruction. The experimental group received the Tier-2 small group literacy intervention, while the control group continued to receive regular whole-class literacy instruction during this time. Large and statistically significant mean differences between the two groups were evident at post-test on two of the four tests employed measuring phonological recoding and single word reading. Large effect sizes provided evidence for the efficacy of the small group intervention for young struggling readers.

Hatch (2012) evaluated the properties of a 37-item survey designed to measure a school’s implementation of a multi-tiered support system (MTSS). An ANOVA comparing the mean survey score total across groups did not reveal any
significant differences \[ F (2, 96) = 0.41, p = 0.67 \], nor were there any significant correlations between survey score totals and student outcomes. Reliability of the survey was strong, but further refinement is needed to improve the survey's ability to discriminate between implementation levels.

**Lane et al. (2011)** in their study reported on the outcomes of a multistage, two-tiered, response-to-intervention instructional model for delivering phonological awareness instruction and intervention to kindergartners. An add-on tier of supplemental instruction exerted a substantial advantage for low achieving children on all measure of developmental spelling. Results suggest that at two-tiered intervention model provides an effective means for improving the literacy outcomes of low-achieving kindergarten children.

**Baca** (2011) in a study focused on implementations of a multi-tiered framework for educational reform, known as Response to Intervention (RTI), in the entire nation. Findings from this research study supported several conclusions about RTI implementation, including: full implementation takes 3-5 years; strong leadership is required; on-going, differentiated district support is beneficial; and RTI is an effective way to organize instructional efforts for struggling students.

In a study done by **Murray et al. (2010)** used a response to intervention (RT) framework to examine the retention of 1st-grade students. They (a) identified a change in the retention rates of 1st-grade students. (b) Synthesized principals’ perception of the retention decision making process, and (c) compared reading and behavior outcomes of students retained after RTI implementation to those of students retained using a more “traditional” school framework. The retention rate of 1st grade students decreased by 47% after RTI was implemented.

**Barton and Stepanek** (2009) in an article discussed a three-tiered, differentiated curriculum in a response to intervention (RTI) framework that has successfully raised achievement at all levels, but is particularly successful with ninth-grade students. The result reveals that, tiered instruction program has made significant strides. By 2007, special education referrals had dropped by 13.6%, the number of students enrolled in Tier I classes rose by 19.5%, and the district saw gains in elementary and secondary students passing the reading and writing test. The district concluded that tiered early and intensive literacy interventions resulted in 79.5% of all
4th graders, 63.8% of all 7th graders, and 78.9% of all 10th graders passing the WASL.

**Tuckwiller (2009)** investigated the response of kindergarten students at-risk for reading failure to a two-tiered vocabulary intervention delivered in the context of a shared storybook reading activity employing rich and robust vocabulary instruction. The results provided clear research evidence regarding the overall benefit of rich instruction; for example, after adjusting for initial vocabulary scores, both groups of students (at-risk and not at-risk comparison) demonstrated similar rates of learning in response to rich instruction and maintained learning over time. Other results, including those related to the relative benefit of Tier 2 instruction, were more ambiguous and challenging to interpret.

**DeBaryshe et al. (2009)** examined the effects of Differentiating Instruction model on high-risk children. Teachers provided developmentally sequenced, **tiered instruction** primarily in small group formats. Children made gains on all areas assessed (vocabulary, emergent reading, alphabet knowledge, print concepts, phonological awareness, emergent math). Higher risk children made much larger gains on vocabulary over the course of the year than did their lower risk classmates and showed similar or slightly lower rates of change on other measures of early academic skills.

**Cheney et al. (2009)** presented an example of a targeted Tier 2 intervention that has been effective for at producing positive social outcomes for students who are at risk of developing emotional behavioral disabilities. In a Tier 2 intervention, a school based coach works with teachers and students on a daily basis to set social goals, check students progress provide reinforcement when student meet goals and communicate student progress to their parents. Results from the past several years showed that this type of intervention can reduce problematic student behavior, reduce referral rates to special education, and enhance students social behavior.

**Bausman (2009)** in a research study investigated the use of response to intervention (RTI), a 3-tiered system of assessment and intervention for mathematics in kindergarten in a rural school in the northeastern United States. Based on the ANOVA statistical test, the results did not show a significant difference between mathematical learning of students in the 3 groups.
The purpose of the study conducted by Richards (2005) was to examine one method of curriculum differentiation, tiered instruction, for effectiveness in improvement of academic achievement in a secondary science course. The learners in the treatment group of those with lower background knowledge as a group achieved as well as the learners in the treatment group mid-range learners are better than the control group mid-range learners. The higher background learners in both groups overall made equal gains. The higher background learners in the treatment group exhibited time management deficiencies as their curriculum demanded more independence than they were use to. This research demonstrates that significant achievement gains can occur when curriculum is differentiated according to the readiness level of the learners.

**Trends in the Reviews are indicated below:**

The above mentioned studies provide enlightening insights into the implementation of Tiered Instruction as an efficient method of curriculum Differentiation in the regular schools. From the review of related literature, majority of the studies point towards that use of Tiered Instructional approach has been found effective for producing positive social outcomes for students who are at risk, and showed gains in achievement, gains in conceptual understanding, student motivation and decrease behavioural problems of students. The findings is supported by studies conducted by Richards (2005), Cheney Douglas et al. (2009), DeBaryshe et.al (2009), Nancy (2013), Collins (2013), Buckingham and Beaman (2012).

Thus all the above studies gave insight and awareness that Tiered Lessons approach has emerged as an effective pedagogical practice in advanced countries of the world. But studies conducted in India are rarely found, which paved the way for the Investigator to select this as a strategy to implement in a differentiated classroom.

**3.5 Studies related to Graphic Organizers**

Graphic organizers are visual representations of a text or a topic. Graphic Organizers provide teachers with tools to help students on the road to higher achievement. Organizers provide templates or frames for students or teachers to identify pertinent facts to organize information and record relationships between facts.
and ideas within a learning task. Literature supports the use of organizers to facilitate and improve learning outcomes for a wide range of learners and also to strengthen their cognitive processing. Cognitive Graphic Organizers are one of the most powerful tools to support Differentiating Instruction. The versatility of the Graphic organizers makes them perfect tools for differentiation. While considering these facts Investigator went through certain outstanding reviews and research findings and are outlined below.

**Bethune and Wood (2013)** in a study used a delayed multiple baseline across participants design to evaluate the effects of graphic organizers on the accuracy of wh-questions answered following short passage reading. Participants were three elementary-age students with autism spectrum disorder. Results indicated improved accuracy of responses to wh-questions, generalization, and maintenance of gains following intervention. Implications for future research and practice are discussed.

**Ciullo and Reutebuch (2013)** reviewed of the literature for studies that utilized computer-based graphic organizers for students with learning disabilities. Findings revealed high effect sizes on social studies measures and encouraging results for written expression, while comprehension results were less promising. This review found no evidence suggesting that these treatments were efficacious without the use of explicit instruction and guided practice.

**Knight et al. (2013)** found that graphic organizers (GOs) paired with explicit instruction can improve vocabulary as well as comprehension for students with disabilities. A functional relation was demonstrated between the GO with systematic instruction and students' number of correct steps completed on the task analysis.

The results of the study conducted by **Strickland and Maccini (2013)** indicated that the integration of the concrete manipulatives, sketches of manipulatives, and abstract notation with the support of a graphic organizer (i.e., expansion box) was an effective strategy to improve students’ conceptual understanding and procedural fluency of multiplying two linear expressions

An exploratory action research case study was conducted by **Kessler et al. (2013)** to examine the impact of Thinking Maps on student achievement. Thinking Maps are not just another set of graphic organizers but a set of eight of unique visual mind maps with each linked to a specific higher-order thinking pattern. This study
Chapter 3

Review of Related Studies

tells the story of one middle school where a school-wide initiative demonstrated an increase to 86% grade-level reading proficiency within three years.

The current study by Strickland and Maccini (2013) focuses on the effects of incorporating multiple visual representations on students' conceptual understanding of quadratic expressions embedded within area word problems and students' procedural fluency of transforming quadratic expressions in standard form to factored-form and vice versa. Results indicated that participants significantly improved their algebraic accuracy and maintained their skills over time. Further, participants reported the intervention was worth their time and they would recommend it to others.

Nair (2012) in her study revealed that metacognitive classroom practice like Graphic Organizer acted as channels for the improvement of academic achievement and metacognitive awareness of students at secondary level.

Prieto (2012) in two systemic replications, one randomly assigned inclusion class was taught to add and subtract rational expressions through explicit instruction with a color coded Venn diagram organizer. Another similar inclusion class was taught with the same methods using a color coded concept map organizer. Results from the pre and posttests showed that including a color coded graphic organizer with explicit instruction improved the conceptual understanding of the procedures for adding and subtracting rational expressions for all students. Survey results revealed that students found the graphic organizers helpful in adding and subtracting rational expressions and those students enjoyed using the graphic organizers because it kept them organized.

Paul's (2012) study proved that the strategy is superior to prevailing modes in enhancing the Academic Achievement and there by strengthen their Vocational Competency.

Greene (2012) evaluated the effectiveness of the Fading Prompts through Graphic Organizers method (FPGO) for students with learning and intellectual disabilities in written expression. Data analysis showed significant difference in performance scores.

Gonzalez-Ledo (2012) investigated the effects of computer graphic organizer software on the narrative writing compositions of four, fourth- and fifth-grade,
elementary-level boys with Specific Learning Disability (SLD). The results of this study indicated that to varying degrees computer graphic organizers had a positive effect on the narrative writing abilities of elementary aged students with SLD.

DuHaney (2012) investigated the effectiveness of using concept mapping via the web-based software *Inspiration* to teach grade 11 students 'Nutrition in Humans'. The results showed that after students had been taught using the *Inspiration*, their anxiety levels decreased, the frequency of chorus answering decreased, and their biology achievement significantly improved. It was concluded that concept mapping using the web-based software *Inspiration* was effective in teaching grade 11 students 'Nutrition in Humans'.

The study conducted by Zaini et al. (2010) on “The Effect of Graphic Organizer on Students’ Learning In schools” emerged that Graphic Organizer is an instructional tool that helped students to organize and structure information and concepts related to other concepts. As an instructional tool, Graphic Organizer is used to illustrate students’ prior knowledge about a topic or section of text that have been highly recommended to be used in classrooms.

A pretest-posttest comparison group design was used by Dexter (2010) to investigate the effects of a semantic mapping lesson plus visual display versus a semantic mapping lesson alone on adolescents with learning disabilities (LD) ability to gain and maintain factual knowledge from expository social studies material. The results of this study supported the conclusion that semantic mapping was beneficial for factual recall, while the additive effect of a visual display significantly improved maintenance and far transfer for adolescents with LD. Results of this study also supported the conclusion that normally achieving students and low achieving students also benefit from semantic mapping and the visual display.

In a study “Using a Curriculum Based Measurement Graphic Organizer to Facilitate Collaboration in Reading” Andrea and Sally (2009) found that Curriculum Based Measurement (CBM) is a useful tool for both general and special educators to evaluate and improve student achievement

Conley (2009) investigated the effect of graphic organizers on the academic achievement of high school students receiving instruction via an online blended
Chapter 3

Review of Related Studies

learning environment. The results of this research study indicated that high school students who received instruction in an online blended learning environment using graphic organizers did not perform significantly higher on the End-of-Course Test than high school students who did not receive instruction using graphic organizers.

McCarthy (2008) writes “According to Brunn (2002) Graphic Organizers and other visual organizers help students understand relationships by presenting information explicitly and spatially”. The Graphic Organizer assists in comprehension of vocabulary by allowing the child to map out the meaning of a word in order to build understanding.

The purpose of the study by Howard (2007) was to explore those factors that support GOs instruction in inclusive classrooms through a case study of teachers who were perceived to be high level implementers. Responses revealed factors that support the implementation and sustainability of GO instruction with students with and without Specific Learning Disabilities in the four categories of administration, innovation and support, implementation, and teachers competencies.

Graphic Organizers have been shown to improve the performance of students in a secondary mathematics setting (Ives, 2007) however, this can also be applied to the kindergarten classroom.

Clark (2007) found that Graphic Organizers not only enable students to record and categorize information, but also help students to understand difficult concepts, generate thoughts, and identify connections between ideas. When used effectively, these visual tools can have a positive impact on student’s achievement. Students who work with Graphic Organizers often show improved writing and critical thinking skills as they guide students through the inquiry process.

A study by Githu and Nyabwa (2007), indicated that the use of analogies increased students’ success in solving mathematical problems in enhance learning. They proposed six steps for creating and using Graphic Organizers for teachers which were state objectives, oral presentation integrative reconciliation, promotion of active reception learning, encouragement to adopt critical approach, application to solution of problems.
Wang (2006) in a study examined the effects of mind mapping, as compared to the use of linear outlines, to present science knowledge to adolescents with learning disabilities. The results showed that the nature of the measures made a difference in the evaluation of the outcomes. On the choice-response tests, three participants outperformed in the mind map condition as compared to the outline and baseline conditions. However, on the production-response tests, only one participant outperformed in the mind map condition as compared to the other two conditions. The results lend some support to the effectiveness of mind mapping.

Rodriguez’s (2006) thesis reviews fifteen studies that used graphic organizers to help students improve learning in the areas of reading comprehension, vocabulary acquisition, recall and retention and critical thinking. This thesis also evaluates two computer programs: Inspiration 7.6 and Smart Ideas 5 that generate the graphic organizer concept map.

Kang (2002) in a dissertation work quantitatively synthesized graphic organizer intervention studies conducted for enhancing reading comprehension and recall of students with learning disabilities by using meta-analytic procedures. The overall findings of this meta-analysis revealed moderately large effects of graphic organizers on learning from text materials. In terms of instructional features, the results clearly indicated the following: (a) graphic organizers used before and after reading facilitated initial and subsequent learning of students with learning disabilities in content areas, (b) graphic organizer interventions produced very large effects when used as substitutes for text materials, and (c) the use of experimenter-constructed graphic organizers for student with learning disabilities was effective in enhancing their learning in content areas. Graphic organizers with the hierarchical and central format with or without pictures resulted in very large effects. All but one graphic organizer interventions focused on expository text. Students in graphic organizer conditions outperformed students in comparison conditions on maintenance tests.

Trends in the Review are indicated below:

The review of the studies in this sphere demonstrates that Graphic Organizers provides a framework for strengthening the students’ ability to recall, conceptual understanding, and visualize their thinking. It also reveals the fact that they are
adaptable for all ages, ability groups, especially for Learning Disabled and across all areas of the curriculum. Graphic organizers have a number of attributes that enhance student’s thinking skills. All of the research studies points that true learning take place through the implementation of Graphic Organizers which helps to articulate the ideas and probe the thinking process effectively. The findings is supported by studies conducted by Green (2012), Prieto (2012), Gonzalez and Mary (2012), Dexter (2010), Zaini and Nawawi (2010). Though many studies have exploited the benefits of Graphic organizer in improving the natural instructional classroom practices towards building an enriched learning climate and reiterates the effect of Differentiating Instructional practices towards achieving academic success to greater extend, no studies in our State have focused on interlinking these strategies into the natural inclusive instructional classroom practices towards facilitating learning of diverse learners. This fact had urged the Investigator to explore the effect of Graphic Organizers as an effective strategy for Differentiating Instructional practices in an Inclusive Class towards heightening the academic outcome of all types of learners.

3.6 Studies related to Learning Disability

Learning Disability is a silent and enigmatic entity. Unlike other disabilities, such as paralysis or blindness, a learning disability is a hidden handicap. A LD is able, it doesn’t disfigure or leave visible signs that would invite others to be understanding or offer support. Strong feelings of frustration, anger, sadness, shame etc can lead to psychological, difficulties such as anxiety, depression or low self-esteem as well as behavioural problems such as substance abuse or juvenile delinquency. Unfortunately these problems can be far more devastating than academic challenge themselves. Students with learning disabilities (LD) have a way of challenging almost every general education teacher because of the learning characteristics that are displayed by many kids with learning disabilities. The Investigator for the purpose of the study has traced many literature and research findings in the area. An effort has been made to compile only those studies or reviews in close propinquity with the present study.

The purpose of the study by Narang and Gupta (2014) was to examine the effectiveness of three remedial techniques to improve the spelling ability of students with learning disability. The students in the three groups differed in the kind of errors
they made in spelling. The results indicated that all the three remedial techniques were significantly effective in ameliorating spelling deficits among students.

**Tredinnick and Cock (2014)** investigated the effectiveness of a 1-day dysphagia training package delivered to support workers who work with adults with a learning disability. Findings indicated that there was a significant increase in knowledge and confidence scores in the trained group. These increases were largely maintained over a 1-month period. There was no significant change in confidence or knowledge scores in the untrained group.

In a study **Kennedy et al. (2014)** used a related model to guide creation of a multimedia-based instructional tool called content acquisition podcasts (CAPs). He created CAPs using a combination of evidence-based practices for vocabulary instruction, UDL, and Mayer's instructional design principles. High school students with and without learning disabilities completed weekly curriculum-based measurement (CBM) probes (vocabulary matching) over an 8-week period along with two corresponding posttests. Results revealed that students with and without disabilities made significant growth on CBMs and scored significantly higher on the posttests when taught using CAPs.

**Lovett et al. (2012)** implemented reading intervention designed on PHAST Paces with teachers word identification strategies, knowledge of text structures and reading comprehension strategies and reported that the struggling readers demonstrated significant gain on standardization that the struggling readers demonstrated significant gain on standardized tests of word attack, word reading, passage comprehension, experimental measures of letter sound knowledge and multisyllabic word identification relative to control group students.

Findings of the study by **Boyle and Rivera (2012)** revealed that students who used note taking techniques were effective at increasing scores on measures of achievement and the quality and quantity of notes recorded.

**Bane et al. (2012)** analyzed the perspectives of people with learning disabilities on relationships and supports in the Republic of Ireland. Findings suggested that people with learning disabilities have a diversity of experiences and views on relationships and support needed to keep them. People with learning disabilities
taking part in the focus groups identified that they need more support from friends, family, and services staff to develop new relationships and keep their existing ones.

Lee (2010) investigated whether curriculum modifications predicted student and teacher behaviours related to the general education curriculum and if there were differences in ecological, student and teacher variables depending on the presence of such curriculum modifications. Findings indicated that there were significant differences in student and teacher variables depending on the presence of curriculum modifications. When curriculum modifications were provided, students were engaged in more academic–related responses and fewer competing behaviours and teachers were engaged in fewer classroom management activities.

Berkeley (2009) provides a snapshot of how all states were progress with the development and implementation of Response-to-intervention (R T I) models one year after the final regulation for the individuals with Disabilities Education Act were passed and findings indicated that most states were in some phases of RTI development although approaches vary wildly throughout the country.

Heo (2007) investigated the impact of multimedia anchored instruction in language arts on the motivation to learn and academic achievement of students with and without learning disabilities (LD) enrolled in a seventh-grade general education classroom setting. The overall results of this study suggest that anchored instruction is an effective instructional approach that integrates technologies into the classroom learning as a medium for enhancing students' motivation to learn and academic achievement.

Shechtman and Ratz (2007) found that the program that utilize the principles of interpersonal group treatment and the sharing of experience with care gives have much effect on the learning of students with Learning Disabilities.

Shechtman and Pastor (2005) found that most of the cognitive behavior approaches helped students with a variety of learning problems to develop study skills and prompted social adjustment.

Wiener and Christene (2004) analyzed the effect of special education placement in the social and emotional functioning of children with learning
disabilities (LD). Children in the more inclusive placements had more positive social and emotional functioning. Children receiving in-class support were more accepted by peers, had higher self-perceptions of mathematics competence, and fewer problem behaviours than children receiving resource room support. Children in inclusion classes had more satisfying relationships with their best school friends, were less lonely, and had fewer problem behaviours than children in self-contained special education classes.

3.6.1 Studies related to Self Concept of Learning Disabled

The study by Mohanan (2013) concluded that there is no significant difference in self concept of higher secondary school students with respect to residence, gender, economic status, social status but there exists significant difference in self concept of higher secondary school students with respect to religion.

Amrutha (2013) studied the Self-esteem of post graduate students with respect to selected socio demographic variables (Gender, religion, Place & residence and economic status). It was found that Self-esteem of post-graduate is average and there exists no significant difference in the Achievement Motivation of post graduate students with respect to selected socio demographic variables (Gender, religion, Place & residence and economic status)

Wei and Marder (2012) estimated Developmental trajectories of two self-concept constructs (self-confidence and importance beliefs) in three domains (academic, social, and self-image) in a nationally representative sample of approximately 3,500 students with disabilities. The authors found significant mean differences in self-concept but similarities in the shape of trajectories across disability categories, gender, and race. Students with emotional disturbances or autism had significantly lower self-confidence in the social and self-image domains and lower academic importance beliefs than students with learning disabilities.

Pijl and Frostad (2010) conducted a study that addresses the relationship between the acceptance of students with disabilities by their peers and their self-concept. Research shows that level of acceptance and self-concept are moderately related. Students with disabilities not accepted by their peers in regular classrooms
thus run the risk of developing low self-concept. It is assumed that this does not apply to students with moderate to severe learning disabilities (LD), because they are less able to understand fully their level of acceptance by typical peers. Therefore, they do not experience negative feelings linked to an eventual isolated position and are less likely to develop a low self-concept.

James (2009) in a study concluded that there is significant association between the perception of learning disability and self esteem in students with learning disability. The socio economic variables like gender, religion, birth order, and type of family and area of residence have no significant influence on the perception of learning disability in learning disabled students. It was also found that self esteem of learning disabled is poor when compared to the normal students.

Poly (2008) studied the self-concept and its varied dimensions of learning disabled and their normally achieving peers and also studied the self-concept of learning disabled and their normally achieving student’s with respect to selected socio-demographic variables. It was found that self-concept of learning disabled students is poor when compared to their normally achieving peers. Educational self concept of normally achieving students exceeds that of students with learning disability. Learning disabled students are poor in intellectual self-concept when compared to their normally achieving peers.

Nishangas, Andile and Cronk (2008) conducted a comparative study on self-esteem of adolescent boys with and without learning disabilities in an inclusive school using the Culture Free Self-Esteem Inventory Third Edition (CFSEI 3). Results indicated that there were no significant differences found between the two groups of participants for each of the CFSEI self-esteem subscales as well as for global self-esteem.

La Barbera (2008) in a study evaluated perceived social support and self-esteem in 66 students with learning disabilities in a private school. Results from o hierarchical regression indicated that support from parents predicted 35% of the variance in global self worth. Support from class mates, close friends, and teachers did not make significantly unique contribution to self worth above and beyond support from parents. Further results indicated that students reported significantly
higher scores on several domains of self-esteem. Indicating general intellectual 
competence and global self-worth, compared to their peers with learning disabilities 
in a public school.

**Ingesson (2007)** performed Interviews with 75 teenagers and young adults to 
investigate how young people with dyslexia experience school in terms of well-being, 
educational achievement, self-esteem, peer relations and belief in their future. Results 
from earlier studies suggest that secondary emotional problems are common. Majority 
of them experienced full of distress and failure in elementary school.

In an attempt **Zeleke (2004)** test the assumption that children with learning 
disabilities (LD) have deficient self-concepts, a number of studies have compared the 
self-concepts of students with learning disabilities and their normally achieving (NA) 
peers. Results of the present review indicated that the academic self-concept of LD 
students is more negative than that of their NA peers, the evidence is less clear for 
general self-concept. This is also true for social self-concept. Because the evidence 
that shows no group differences outweighs that indicating better social and general 
self-concept scores for NA children, the conclusion that children with LD hold more 
negative social and general self-concepts than do NA children is not warranted.

**MacMaster, Donovan and MacIntyre (2002)** examined the effect of being 
diagnosed with a learning disability on elementary school children’s self-esteem using 
quasi-experimental design. Self-esteem increased significantly above pre-diagnosis 
levels following diagnosis of a learning disability while self-esteem levels in a control 
group of children without learning disabilities remained unchanged.

**Elbaum and Vaughn (2001)** in a meta-analytic review examined self concept 
outcomes of school-based interventions for students with learning disabilities (LD). 
The study reveals that middle school students benefited more from interventions than 
did elementary or high school students and also found that counseling interventions 
were more effective for middle and high school students and the most effective 
interventions for elementary students with LD were those that focused on improving 
student’s academic skills. Interventions had more of an effect on students’ academic 
self-concept than on other dimensions of self-concept.
Chapter 3

Review of Related Studies

Lanaro (2001) assessed the Self-concept in social and academic domains, in children with learning disabilities and a matched sample of children without LD. Children with LD evidenced significantly lower self-concept in academic and social domains. In addition, academic and social self-concepts were significant predictors of Global Self Worth in children with LD, although there was a high degree of overlap between the two variables in their predictive ability. In the NLD group, social and academic self-concept areas were significant predictors of global self-worth yet there was minimal overlap between the two self-concept areas.

A study was conducted by Harald (1999) in students with learning disabilities (LD) and low achieving students (LA) and non-learning disabled students (NLD) on peer acceptance, Loneliness, self-esteem and depression. The result revealed that students with LD compared to non learning disabled students and non low achieving students were less accepted by peers, had lower self-esteem, and felt lonelier. LD students compared with LA students were less depressed but were less accepted by peers and felt lonelier.

According to Swann (1996), elementary students, particularly children in the primary grades, are at a stage of development in which they are especially sensitive to parental feedback. Thus, at least with primary-age students with LD, interventions that target improved interaction between parents and children may be a valuable component of a program designed to enhance student’s self-concept.

According to Hattie (1992), once self-concept is positive or at least acceptable to the individual, it is more stable and consistent and is thus likely to change as the result of intervention.

3.6.2 Studies related to Achievement Motivation of Learning Disabled

Achievement motivation is relatively a new concept in the world of motivation. It owes its birth to USA, and is basically a product of a system that is based on Capitalism. The word motive is derived from the Latin word MOVERE, meaning “to move”. The basis of achievement motivation is achievement motive, i.e., a motive to achieve, those who engage themselves in a task on account of achievement motive are said to work under the spirit of achievement motivation.
Achievement motives are present in all of us in varying degrees. Studies indicate that parents are responsible for the growth and development of achievement motives in children. Most of the achievement motives are learned, especially from one’s early child experiences. Children whose parents receipted and appreciated their independence tend to become high achievers. Children learn and adapt many of their behavior patterns from parents.

Mohanan’s (2013) study concluded that there is no significant difference in Achievement Motivation of higher secondary school students with respect to residence, gender, economic status, social status and religion.

Amrutha’s (2013) study found that Achievement motivation of post-graduate is average and there exists no significant difference in the Achievement Motivation of post graduate students with respect to selected socio demographic variables (Gender, religion, Place & residence and economic status)

Sreeja (2012) studied the relationship between achievement motivation and academic achievement and study habits of boys and girls of Govt, Aided and Un-Aided schools. It was found that there is significant correlation between academic achievement motivation and study habits, academic achievement of high school students. It was also found that there is no significant difference in achievement motivation of high school students with respect to gender. Similarly there is no significant difference between Aided and Govt school students in terms of achievement motivation, between Unaided and Govt.

Jyothi (2012) explored the impact of school environment on achievement motivation of children with disabilities and Normals in inclusive education and to find out the relationship between them. It was found that age of children with disabilities is a significant factor which influences the school environment and achievement motivation but it is not with normal students. Gender of children with special needs and normal, their religion, type of affiliation and standard of studying in inclusive education system have not any significant impact on achievement Motivation and school environment.

Anitha (2012) conducted a study on Study Habits, Achievement Motivation, and socioeconomic status of high school students. The main objective of the study
was to find out the relation existing between study habits, socioeconomic status and Achievement Motivation of boys and girls in urban and rural areas and to check any significant difference exists between them with respect to Achievement Motivation. The following conclusions are arrived at. There exists significant positive marked or substantial correlation between study habits, socioeconomic status and Achievement Motivation of secondary school boys and girls of urban and rural students. It was also found that girls have better achievement motivation than boys.

In a study on the relationship between emotional intelligence and achievement motivation among higher secondary school students Sreeja (2010) found that majority of the sample of students are in average achievement motivation scores and it was revealed that there is no significant difference in the mean scores of achievement motivation scores among the students with respect to gender. But there exists significant difference with respect to locality of the school and there is significant relationship between emotional intelligence and achievement motivation among the students.

In a study on Self-esteem and achievement motivation of adolescents and middle aged, Bosco (2009) investigated the self esteem and achievement motivation of adolescents and middle aged and also analyzed the relationship between them. The study found that there is no correlation between self-esteem and achievement motivation of adolescents and middle aged. According to the study it is evident that the male middle aged did not differ from female middle aged in achievement motivation of adolescents.

Babu (2009) conducted a study on achievement motivation, study habits and examination anxiety among secondary school students. The method adopted was normative survey method. The major findings of the study are rural students are superior to urban students in their achievement motivation. Similarly government school students are superior to aided and private school students for the variable study habits.

Cheng (2006) examined the effects of differentiated curriculum and instruction on the teaching of English as a Foreign Language (EFL) to university freshmen in their English reading classes in Taiwan. This quasi-experimental study investigated whether using differentiated curriculum and instruction impacted
motivation, anxiety, and interest toward learning English. The study showed that using differentiated curriculum and instruction increased EFL learners’ motivation and interest levels when compared with the students taught using teacher-directed lecture model to learn English. This current study showed that when the curricular elements of content, process, and product are differentiated students’ interests, readiness, and learning preferences, English learning is more interesting and creates higher motivation than does using traditional Taiwanese teaching methods.

**Esposito (1999)** established that the most important factor associates with children’s school adjustment is the teacher-student relationship and achievement motivation and that security of the school, and the parent and school relationship contribute to the child’s academic achievement.

**Trends in the Reviews are indicated below:**

The review of related literature empowered the Investigator to have extensive information on learning disabilities. It helped the Investigator to get awareness on the successful strategies for including LD students along with normal ones and also on the impediments faced by the general and special educators in general education set-up. Literature shows that when curriculum modifications were provided, LD students were found engaged in more academic-related responses. Studies reveal that the LD students have poor self-esteem when compared to the normal students, yet when placed in regular classrooms they fare better in terms of social acceptance, friendship relations and self-concept than students with LD in more segregated settings.

The insight enacted from a thorough analysis of the research reviews locates the stage for crafting the present study of its kind. It made possible for the Investigator to frame the hypothesis, and select suitable methods and tools for the study. The methodological approach adopted, the analysis and interpretations made and findings and conclusions derived are portrayed in the successive chapters.