CHAPTER II

REVIEW OF RELATED LITERATURE

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2.1 Introduction

The review involves systematic identification, location and analysis of documents containing information related to research problem (Gay, 1996). Since a good research is founded upon the complete academic knowledge that is known in the area of research, the review section provides a testimony and confirmation to that effect (Khan, 2007).

A careful review always aims at interpreting prior studies and indicating their usefulness for the study to be undertaken. Thus prior studies serve as the foundation for the present study. The review also gives an idea about the variables of the problem under investigation. Through review a researcher can identify variables relevant for the research and determine meaning and relationship among variables.

The review for the present study was done on research and non-research literature. The literature reviewed is organized and presented under appropriate headings.

2.2 Vocabulary development in children with mental retardation

The importance of vocabulary knowledge to school success, in general, and reading comprehension in particular, is widely documented (Baker et al., 1998; Cunningham & Stanovich, 1998). Snow (2002) suggests that vocabulary and word knowledge can contribute to improved
comprehension, and it provides a sound rationale for increased emphasis on vocabulary instruction.

Vocabulary instruction focuses on words and word meanings. Fluency in word recognition and in understanding words contribute to increased reading comprehension. So vocabulary instruction for students with mental retardation is an important aspect of their literacy programme. Words and concepts are interrelated. Therefore understanding vocabulary helps to lay the foundation for understanding concepts.

Maria (1990) noted that the reader’s level of vocabulary is the best predictor of his/her ability to understand text, and the number of difficult words in a text is the best measure of its level of difficulty.

Fuchs et al., (2001) noted that fluent word recognition allows the reader to allocate increased attention to key comprehension process, such as making meaningful connection between sentences within a passage or relating text meaning to prior experiences and information. Thus learning how to decode text provides a requisite foundation not only for reading fluency but also for higher level comprehension processes.

Share and Stanovich (1995) observed that evidence from 20 years of research points the development of fluent word recognition skills as the biggest difficulty that students face in learning to read. Theories of word recognition (Ehri, 1998, Fuchs & Deno, 1991, Share & Stanovich, 1995)
suggest that struggling readers have difficulty in learning to recognize words as whole orthographic units or by phonetic cues.

       Significant amount of student’s vocabulary growth may develop through independent reading. Unfortunately students who struggle with reading often fail to engage in independent reading necessary to improve vocabulary development. Over all differences in the amount of independent reading, lack of strategies to learn words from context, and diffuse word knowledge appear to be the most critical obstacles to vocabulary development of students with disabilities (Stahl & Shiel, 1999).

       Research on vocabulary instruction for students with mental retardation is mainly in the area of sight word instruction. The reason may be that sight word identification is an important early phase in reading acquisition for children with and without mental retardation (Conners, 2003). This may be the first step in comprehensive reading instruction programme for learners with moderate to mild mental retardation. Sight word instruction leads to rapid acquisition of the skill to identify essential and functional words. In the literature review by Conners (1992), three areas of research on reading instruction for children with moderate mental retardation were reviewed: sight word instruction, word analysis instruction, and oral reading error-correction.
The report indicates that (a) among sight word instruction methods, those that use picture integration, constant delay, and Edmart errorless discrimination methods seem strongest, (b) word analysis instruction is viable option for many students with moderate mental retardation and (c) word analysis is the most effective method for oral reading error correction.

Didden et al., (2006) investigated the effects of three training procedures to teach sight words to 13 children with moderate to mild mental retardation. The training procedures were (1) word alone (word was presented without picture), (2) integrated picture (word was presented with integrated picture – no fading) and (3) picture fading (integrated picture was faded out). Results show that most children learn to identify sight words faster in word alone condition. Effects were largely maintained during follow-up 2 to 5 weeks after training. Using pictorial prompts during reading instruction to these children may hinder learning. The causes of these hindering effects of pictorial cues have not yet been determined, though several hypotheses have been generated. (1) This result may be explained by a blocking effect, whereby previous conditioning of a verbal response to a picture may block conditioning of the verbal response to its written equivalent when the picture and written sight word are presented as a compound
stimulus (Didden et al., 2000, Singh & Solman, 1990). (2) Selective attention to picture may hinder learning. For example, according to Dorry and Zeaman (1975) the pictorial cue is the most meaningful stimulus for a child when presented with an unknown written word.

Browder and Minarovic (2000) examined the effect of teaching three employees with moderate mental retardation who were non-readers to use sight words to self-initiate job tasks in competitive employment settings. The training package was composed of (a) a progressive time delay procedure to teach sight word recognition, (b) a verbalized “Did-Next-Now” self instruction technique and (c) a written work routine checklist for self-monitoring. Use of this combined package resulted in the acquisition of reading job specific sight words, and increase in several work related behaviours. This was the first study to focus on sight words for employment settings and this contributed to the literature on sight word by demonstrating a method for teaching word comprehension.

Browder et al.,(1998) conducted an evaluation of transfer of stimulus control and of comprehension in sight word reading for children classified as mildly mentally retarded and severely emotionally disturbed. The children received sight word instruction that included
time delay to transfer stimulus control from a verbal prompt to printed word. Out of five children, four mastered the words without direct instruction.

Noble and Merrill (1989) conducted sight word vocabulary instruction in 16 moderately mentally retarded children aged 9-13 by manipulating pictorial stimuli (fading versus non fading), relationship to the word stimulus location (superimposition versus juxtaposition of picture and word), to orient the learners attention to the word. Subjects who were trained in using superimposition methods significantly outperformed others.

Carlton (1985) examined the effects of an interclass peer tutoring programme on the sight word recognition ability of students who are mildly mentally retarded (ages 11-13 years old). Results showed higher gain scores (pretest-posttest) on both vocabulary and reading subtests than did 62 controls.

Lally (1981) examined computer assisted teaching of word recognition for mentally retarded school children. Eight children were taught associations between the written and spoken versions words by a talking computer. These children increased their sight vocabularies by an average of 128 percent, a comparison group had a 34 percent increase.
Several authors expressed the idea that sight word recognition alone is inadequate in the vocabulary development of children with mental retardation. With sight word instruction generalization of reading skills to new and unknown words seldomly or never occurs (Conners, 1992). Although acquisition of sight words is a significant achievement, the emphasis on sight word acquisition has resulted in reading programs for persons with mental retardation that focus largely on “skill-and-drill” activities with few, if any, opportunities to listen to, read, or write text beyond the single word (Koppenhaver & Yoder, 1993). This almost exclusive emphasis on sight word recognition has meant that students with mental retardation are often not taught strategies for decoding unknown words. Students need a working sight vocabulary, but they also need the ability to decode unknown words using phonetic analysis within the context of connected text. In sight word approach the student is directly taught each word in his/her reading vocabulary. In contrast, well developed word attack skills allow an individual to read untaught words that are composed of new combination of previously taught sound relation.

Other components of such a programme may be (a) word analysis instruction, (b) strategies for promoting response generalization and stimulus generalization of reading skills (i.e.,
functional use of reading skill and comprehension) (Didden et al., 2006). An important advantage of word analysis over sight word instruction appears to be that generalization across (new) words may take place. A disadvantage is that word analysis training may take too long before children have acquired this skill.

A number of authors mentioned the significance of functionality in selecting words and other reading materials. Langone (1986) stated that the basis for developing reading and written expression activities for any capable retarded learner is functionality of the skills being taught. Ediger (1999) observed that the objectives of instruction need to stress relevant functional words for pupils to master.

Teaching the children with mental retardation functional reading skills is important because acquisition of such skills may (a) enhance their daily living and self-help skills and (b) increase their participation in general educational and community setting (Lalli & Browder, 1993).

According to research on explicit vocabulary instruction, selected vocabulary should include words that are important for understanding text, as well as functionally important words or word that students will encounter often (Stahl, 1986). Explicit instruction also include the use of word’s context and definition, opportunities for deep processing (finding
synonyms, antonyms (opposites), making up a novel sentence with word and classifying the word with other words.

Several authors (Bos & Vaughn, 1994; Myreddi & Narayan, 1998; Langone, 1986; Payne et al., 1981) mentioned the Fernald method (1988) as an effective method for teaching vocabulary. This is a multisensory or visual–auditory–kinesthetic-tactile (VAKT) approach. This approach has four stages through which students’ progress as they learn to identify unknown words more effectively.

Langone (1986) mentioned the functional whole word approach which involves pairing pictures with corresponding words, using both auditory and visual modalities. The whole word approach teaches words that have immediate application to the community.

Myreddi and Narayan (1998) explained the whole word approach (sight word approach) in which the imagery level of the word to be learned is stressed. High imagery words are usually concrete and include nouns such as mango, fan house etc.

Bos and Vaughn (1994) also lists several cues and strategies the reader use to recognize unfamiliar word. These strategies can be applied in teaching children with mild mental retardation.
1) Visual configuration – refers to using graphic or distinctive visual features to recognize a word or group of words such as a phrase or whole clause.

2) Picture clue - refer to using pictures, graphs, diagrams, maps and other types of pictorial representations that surround the text to aid in word recognition.

3) Semantic clues – refer to using the words in the text and meaning of the text to help identify the word.

4) Syntactic clues – refers to using grammatical information to identify the word.

5) Context clues - refer to the combination of semantic and syntactic clues.

6) Structural analysis or morphemic analysis - refers to using the meaningful submits of word as identification clues.

7) Phonic analysis or phonics - refers to using the sounds of letters as word identifying clues.

Hanley-Maxwell et al., (1982) conducted a comparison study of vocabulary learning of moderately mentally retarded students under direct instruction and incidental presentation. These six students were taught 10 reading vocabulary words in the presence of the group. Experimental group students were tested periodically on their own 10
words, 50 words presented to peers, and 10 uninstructed control words. They showed significant learning of their own words, with some also learning their classmates’ words.

Berends and Reitsma (2007) examined whether transfer of training effects to untrained (neighbour) words can be enhanced by training with an orthographic focus as compared with emphasizing semantics. Two groups of reading disabled children (mean age=7 year 11 months) were given repeated reading training with limited exposure duration (350 ms) in which 15 target words were repeated 20 times in exercises focused on either orthography (N=26) or semantics (N=25). The children were required to either read the target words aloud or perform the exercises silently but this requirement appeared to have no effect on training results. The results show that untrained neighbour words benefited more from training target with an orthographic focus than exercises with a semantic emphasis.

Allington (1981) assessed the sensitivity to orthographic structure in English words of educable mentally retarded children. These children were presented an item selection task. Analysis of performance indicated that educable mentally retarded children do
acquire implicit knowledge of orthographic rules and that their ability is related to the development of reading skills.

Barudin and Hourcade (1990) studied the relative effectiveness of three instructional procedures (sight word, fading, tactile-kinesthetic) in teaching students with moderate to severe mental retardation to read a series of monosyllabic words. In addition, the relative effectiveness of each approach in teaching students generalized reading skills when presented with novel untaught words was also studied. Results indicated all three reading approaches were superior to the control non-instructional condition in learning to read words specifically taught. However, no one experimental condition was superior to others. No significant differences were found in the acquisition of skills in reading novel untaught words.

2.3 Reading comprehension in children with mental retardation

Comprehension is the ultimate goal of reading process. It is constructing meaning by integrating the information provided by the author with the reader’s background knowledge. It requires that the reader interact with the text to construct meaning.

Reading involves two basic processes a decoding or word recognition process and a comprehension process. Word recognition is
not the primary goal of reading programme. The goal of reading is obtaining meaning from printed material. But comprehension cannot occur unless individual has the necessary skills to expand his sight vocabulary and attack words in a systematic manner. The student’s difficulty in understanding abstract concepts and generalizing information often adversely affects their ability to comprehend written material. Therefore their reading programme must emphasize comprehension.

Rubin (1997) observed reading comprehension as a complex intellectual process involving a number of abilities. Two major abilities involve word meaning and verbal reasoning. Without word meaning and verbal reasoning there will be no reading comprehension.

The skilled reader uses word recognition skills and knowledge about people, places and the things to determine intended meaning of the passage. Knowledge possessed by the reader and information from text interact to produce full comprehension.

Williams (2005) stated, the rationale of teaching comprehension strategies is that readers derive more meaning from the text when they engage in intentional thinking. That is, when people run into difficulties in understanding what they have read, the application of specific strategic cognitive processes will improve their comprehension.
Instruction in comprehension strategies is effective in helping students learn strategies and when the strategies are applied, better comprehension follows.

Many of the new ideas about comprehension is based on schema theory. This theory states that what the reader already know about a topic can greatly influence the reader’s comprehension. This notion was originally advanced by Bartlett (1932) and later developed by Anderson (1977), Rumelhart (1981) and others. It suggests that when readers recognize words on a print page, they think and react based on their background information (schemata). McCormic (1995) observed in order to comprehend we employ both our knowledge of language and knowledge of world. The latter is known as background information / prior knowledge.

Sweet (1993) stated, comprehension is the active construction of meaning. One must combine old and new information to be good comprehenders. The old information comes from the brain and new information is what the reader dealing with from the written text.

For children with mental retardation, reading comprehension should centre on instruction which will allow the children to (1) understand thoughts contained in sentences, (2) comprehend meaning contained in paragraphs and (3) grasp the meaning and implications of
entire selections. For some children these objectives are reasonable, for other children, intellectual limitations will decrease the possibility of satisfactory achievement of these three aims.

For teaching reading comprehension Bos and Vaughn (1994) divide comprehension into types of reasoning according to how readers have to activate their background knowledge to construct meaning. These three arbitrary categories are:

1) **Textually explicit** – information is derived directly from the text with minimal input from the reader’s background knowledge. Answers are available in the text or taken directly from the text. Dale (1966) has referred this as reading the lines. McCormic called this literal level comprehension.

2) **Textually implicit** – Information is derived from the text but readers are required to use their background knowledge to put together the ideas presented in the text. Dale (1966) has referred to this relationship as reading between lines. This is inferential level of comprehension.

3) **Scriptually implicit** - Information not stated in the text. Readers have to activate and use their background knowledge to obtain the information. Dale (1966) has referred to this as reading beyond the lines.
Rubin (1997) gave a similar explanation to the comprehension. Comprehension involves thinking. As there are various levels in the hierarchy of thinking, so are there various levels of comprehension. Higher levels of comprehension include higher levels of thinking. The four comprehension categories are: 1) literal comprehension, 2) interpretation, 3) critical thinking and 4) creative reading. Literal comprehension uses explicitly stated information. In interpretation readers must have problem solving ability and be able to work various levels of abstraction. Here answers to questions are not directly stated in the text but only suggested or implied. All the reading skills in interpretation relay on the reader’s ability to infer the answer in one way or another. Inference is defined as understanding that is not derived from a direct statement but from an indirect suggestion in what is stated. In critical reading, high level of reading skills that involves evaluation, making a personal judgment on the accuracy, value and truthfulness of what is read are included. Creative reading uses divergent thinking skills to go beyond the literal comprehension, interpretation and critical reading levels.

Literature on reading comprehension and children with mental retardation conveys the fact that comprehension is difficult for this group of children. Carter (1975) noticed that of various aspects of
reading, comprehension appears to be most difficult for them. Westling (1986) reported that reading is generally considered the weakest area of learning, especially reading comprehension. Comparatively students who are mildly retarded tend to do better on reading words than on understanding what they have read.

Researches conducted with persons with mental retardation on reading comprehension are limited. The existing researches brought mixed results. Rousseau et al., (1981) investigated the effect of decreasing the difficulty of reading material on comprehension by 57 direct care trainees at a residential facility for person with mental retardation confirmed that decreasing reading difficulty of printed material increases the trainees comprehension levels.

In the study conducted by Katims (2001) on literacy assessment with 132 students with mild to moderate mental retardation, a comprehension section was included. After each passage was read aloud by a student, the examiner asked specific questions pertaining to the passage. Questions ranged from each student’s ability to recall facts of the story, to combining two or more explicitly stated facts, to connecting individual prior knowledge with the story, to evaluating and judging aspects of the story. Students demonstrated relative strengths in the areas of naming the main idea of a narrative passage and reciting facts found
within the passage. Students demonstrated difficulty with terminology, cause/effect relationships, inferential comprehension questions and making conclusions. In summary, students demonstrated difficulty in higher level, more language based reading comprehension.

Bigler (1984) examined the effect of two direct teaching procedures in increasing inferential comprehension scores of intermediate age (9-12 years) mildly retarded students. Inferential questions required to predict outcome and draw conclusions were asked after reading a story passage and after listening. Performance of all experimental students improved from baseline to follow-up assessment.

To promote comprehension Bos and Vaughn (1994) suggested to incorporate many of the aspects of cognitive behaviour modification and socio cultural theory of learning. They are:

1) Before reading:- activate student’s background knowledge for the selected passage. Help them to set purposes for reading by predicting and asking questions about what they are going to read.

2) During reading:- encourage students to self questions and monitor their comprehension as they read.

3) After reading: – use follow up activities such as (a) discussion that focus on content of the reading as well as evaluation of the
content and writing style. (b) discussion that encourage students to generate more questions and ideas for the reading and investigation and (c) retelling that assist students in summarizing and organizing what they have read.

Many authors (Rubin, 1997, Gunning, 1998; McCormic, 1995) mentioned about three types of reading levels.

1. Independent reading level- It is the level at which the child reads on his/her own without any difficulty. Material is easy enough for the child to read independently. They read without any help from teachers, parents or peers. They recognize at least 99 percent of words and comprehension is nearly perfect (Gunning, 1998).

2. Instructional reading level- This is the teaching level of reading. It is the level at which a student can handle material in an instructional situation with normal teacher guidance, that is, with the typical amount of assistance with new vocabulary, help with small comprehension difficulties and so forth (McCormic, 1995). Students can read at least ninety five out of one hundred words and they recall at least 75 percent of what they read. If given instructional assistance they can read with confidence and competence (Gunning, 1998).
3. Frustrational level: Here child reads with many word recognition and comprehension errors. It is the lowest reading level and one to be avoided. It is the level at which the material becomes too difficult for a student even with assistance. Students miss ten or more words out of a hundred and/or remember only half of what they read. Students may exhibit lip movement during silent reading, may be easily distracted or may engage in hair twisting, grimacing or other stress signaling behaviours (Johnson et al., 1987). This is the level of material where a student’s word recognition is 90% or less or comprehension is 50% or less (Gunning, 1998).

Polloway and Patton (1997) stressed the importance of teaching oral reading. Oral reading is particularly necessary in the early stages of reading programme, because it gives insight into beginning reader’s knowledge of sight words and decoding skills. With most children oral reading has three major purposes-diagnosis, conveying directions or instructions and personal pleasure. For learners with special needs, oral reading has four additional purposes- articulation and vocabulary practice, memory reinforcement, rereading for better comprehension and group participation.
Oral reading can assist development of correct word pronunciation by providing the disabled reader who seldom verbalizes with a structured opportunity to speak. When reading aloud, the student takes in information both auditorily and visually, adding an additional pathway to learning that is often necessary for memory. Rereading a passage orally after it has been read silently assists comprehension, particularly when teacher designates a purpose for each reading.

Students also need practice and guidance in the transition from oral to silent reading because silent reading is a critical skill to develop.

Polloway and Patton (1997) listed several strategies for teaching reading comprehension.

1. **Prediction strategies**

   Prediction is asking questions and comprehension is getting these questions answered. Comprehension occurs when people perceive answers to their own questions or find their predictions validated, or refuted. Knowledge and experience directly influence predictions and thus comprehension. Prediction helps students comprehend what they read because they look for details in the story that either prove or change their prediction (Flores et al., 2004).

   General strategies emphasizing prediction or instruction before reading include
i) Setting a purpose for reading to arouse student’s prior knowledge.

ii) Cloze procedure – cloze procedure deletes words from a selected passage; students then predict the deleted words and fill them in using context clues, prior knowledge of the topic, their vocabulary background, and the passage’s message to aid in word recognition. When students complete their passage, they experience closure—thus the term cloze (Alexander, 1988).

iii) Advanced organizers – This introduce an overview of the passage to be read before the student begins reading the selection.

iv) Directed reading / thinking activity- In this activity students are taught to make predictions about what they are going to read before they begin reading the text (VanJura, 1982). While reading the students test and refine the predictions they made in advance. The prediction generate divergent questions and stimulate expanded thinking.

v) Self generated questions- Empirical work has indicated that one major influence on student’s inability to read is that they do not take an active role in their own learning (Brown & Palinscar, 1982; Torgesen, 1982). The lack of metacognitive skills (e.g. self monitoring, predicting and controlling one’s own attempt to study...
and learn) limits student’s success in learning to read (Wong, 1982). Self questioning is one way to stimulate development of poor reader’s metacognitive skills and improve comprehension (Cohen, 1983; Modolfsky, 1983).

With this strategy readers are first trained in question writing. This orientation includes identification of good and poor questions, discrimination between questions and statements, and awareness of question words. Students are then instructed to read the story describe what it is and generate questions. Finally students answer their own questions or exchange questions with peers.

vi) Scaffolding- In scaffolding instruction, the teacher thinks aloud or talks through the steps he/she follows to reach a specific conclusion. As the students begin to understand the process, they gradually takeover the talking through procedure and the teacher acts only as a coach, providing prompts when needed. Several authors suggested this instructional scaffolding for improving comprehension (Wade, 1990; Rubin, 1997; Palincsar, 1986 and Gunning, 1998).

2. Graphic aid strategies
These strategies are visual formats or structures to assist students in organizing information for better comprehension. Several graphic aids apply to teaching students who are disabled.

i) Central story problem – leads to students to determine the central problem of a story and the various characters’ reactions.

ii) Story Frames – helps the students organize and summarize information. This strategy guides comprehension by helping students sort out the important concepts and ideas of the material. (Fowler, 1982; Fowler & Davis, 1985; McCormick, 1995)

iii) Story map – Story map is the graphic display showing the major elements in a story. Often the focus is on the plot. Story map can be used to enhance low-achieving reader’s comprehension (Cunningham & Foster, 1978; Fitzgerald & Spiegel, 1983).

The story map may also be presented as a web. Story webs are similar to semantic maps but are generally simpler. They typically show just the main ideas and supporting details. Webs can be used to show the traits of main character, a sequence of events, a plot of the story, the setting, or any other element that the teacher wish to depict.

iv) Story grammar – Shows how the major parts of story are interrelated. A story grammar might contain the following – setting problem, goal, characters, major episodes, and resolution.
3. Fluency strategies (e.g. Neurological impress method, repeated readings, imitative reading, and paired reading) enhance comprehension.

4. Reciprocal teaching – This include questioning and additional activities. This is based on the assumption that comprehension is enhanced when students read a text and take turns leading small group discussion to help their peers to understand what was read (Reid et al., 1993; Schulz, 1994).

5. Questioning

Asking question is not only an important part of teaching and learning. Teachers’ questions stimulate students’ thinking. It gives an insight into students’ ability to comprehend information. Teacher can learn whether students need help, whether they are able to see relationships and make comparisons and whether what students are reading or listening to is too difficult or too easy.

Both the oral and silent reading passages must have questions based on each passage and questions must be text dependent. These are usually literal comprehension questions, interpretive questions and word meaning questions (Rubin, 1997).

Smith (1968) stress in teaching comprehension to children with mental retardation the teacher needs to give attention to the vital role of
the feedback and monitoring systems. As children read selections of various lengths, gaining meaning will depend on their remembering what has been visually and/or auditorially read. If words are being called and the child is not alert to the meaning contained in each passage, comprehension will be reduced. A central aim of the reading programme, is for each child to eventually move from over attending the process of attacking words to focusing on their meaning and content. Often it will be necessary for the teacher to act as a monitor during the reading process by stopping the child at the end of a sentence and questioning him concerning the meaning of what was just read. In more difficult cases, it will be helpful for the teacher to read short passages in concert with the child so that feedback and memory are emphasized more dramatically. Gradually the child will develop a style which is characterized by greater attention being given to thought contained in passages.

Idol (1987) examined the effectiveness of mapping strategy in two mildly retarded high school juniors and four high school Sophomores in remedial reading class. The strategy was used for thinking critically about expository text focusing on the passage’s main idea, major supporting points, other viewpoints, reader’s conclusion and relevance to a contemporary situation. It is found the mapping strategy
was effective in improving reading comprehension in children with mild mental retardation as well as other students.

Polloway et al (1986) studied the effectiveness of corrective reading programme (a direct instruction approach) in children with mental retardation and learning disability. The study resulted in significantly greater improvements in word recognition and comprehension than prior years for learning disabled and 41 educable mentally retarded students (Grades, 8-12).

Fowler and Davis (1985) examined the effect of story-frame approach for improving reading comprehension in educable mentally retarded children. In story frame approach, teachers construct a frame that becomes the focus of children’s discussion and written assignment. The result showed that the story frame approach can improve educable mentally retarded children’s reading comprehension skills.

In two investigations, one with average readers (Hansen,1981) and a follow up study with poor readers (McCormic & Hill, 1984) students’ comprehension was boosted when teachers used a systematic method of focusing on prediction before stories were read.

Burns et al., (2004) investigated the effect of teaching unknown key words as a pre teaching strategy with 20 students identified as learning disabled in basic reading skills and reading comprehension.
This strategy led to improvement in reading fluency and comprehension with effect size of 0.38 and 1.76 respectively.

Rabren et al., (1999) compared the effectiveness of explicit rule based and basal reader activity based approach to reading comprehension instruction with students with learning disability. Result suggests that students with learning disability benefit from reading comprehension instruction that is structured and rule based.

2.4 Phonological awareness in children with mental retardation

Phonemic awareness (phonological awareness) is the understanding that spoken words consists of sequence of sounds (Ball and Blachman, 1991). Phonic awareness is not very important to our purposes in spoken language, but it become central in learning to read. There is direct evidence that lack of phonemic awareness is major cause of word identification (Vellutino and Denckla, 1991).

Several authors highlighted the significance of phonological awareness in reading. Phonemic awareness permits students to use letter sound correspondence, to employ phonic strategies and identify unknown words more quickly (Griffith and Olson, 1992; Catts and Kamhi, 2005). It is a prerequisite to spelling and writing which also require hearing and making sounds (McCormick, 1995), is a critical
variable in emergent literacy (Sulzby & Teale, 1991), and beginning reading acquisition (Juel, 1991).

Research has shown that phonemic awareness is more powerful determiner than intelligence in predicting whether students will be successful in reading. It is also a strong predictor than general knowledge proficiency (Lomax & McGee 1987). Share and Stanovich (1995) stated phonemic awareness is important for young children to become accurate readers as quickly as possible, because words must be read accurately a number of times before they can become part of child’s sight vocabulary.

The most important of this evidence come from well designed experiments in which instruction in phonemic awareness has been shown to facilitate the acquisition of beginning word reading skills, particularly phonemic decoding skills (the process by which children obtain initial information about phonemes in unknown words).

In a recent analysis of results from fifty two, carefully selected experimental studies Ehri and her colleagues (2001) reported a highly consistent effect of training phonemic awareness on the development of reading skills. These studies showed that the effect of training in phonemic awareness was strongest for phonemic decoding skills in reading, and less strong, but still statistically significant, for measures of
reading comprehension. These findings make sense conceptually, given close theoretical links between phonemic awareness and phonemic decoding skills and the fact that several factors other than word reading accuracy, such as vocabulary knowledge, contribute to individual difference in performance of measures of reading comprehension (Catts & Kamhi, 2005).

Gillon (2002) expressed a similar idea when she wrote “measures of phonological awareness, particularly at phoneme level are powerful predictors of reading success and can predict early literacy performance more accurately than variables such as intelligence scores, vocabulary knowledge and socio economic status”.

In a qualitative meta analysis of phonological awareness training studies, Bus and Van Ijzendoorn (1999) showed that training of phonological awareness improves young children’s reading skills and that these gains are more consistent and robust when phonological awareness has been trained together with letter sound correspondence.

Majority of the observation mentioned above are made by authors after studying the performance of normal intelligent children. Very few studies were conducted among children with mental retardation to know their phonological development.
Of the skills that have been identified as correlates of reading achievement in individuals without cognitive disabilities, one strong predictor is phonological awareness. Only few researchers have addressed to question of whether phonological awareness skills that are correlates of reading ability in typical capable children also correlate with reading ability in individuals with mental retardation. Most of these studies involve children with Down Syndrome.

Bysteveldt et.al., (2006) investigated the effectiveness of a phonological awareness intervention for 4 year-old children with Down syndrome. Their performance on measures of phonological awareness (initial phoneme identity), letter name and sound knowledge, and print concepts pre-intervention and post intervention, was compared with that of randomly selected group of age-matched pairs with typical development. The results indicated a significant treatment effect of phonological awareness and letter knowledge for children with Down syndrome. Additionally, above performance on the initial phoneme identity task was contingent on letter knowledge of particular phoneme.

There are few review on reading instruction, investigators have concluded that some children with moderate to mild mental retardation may benefit from phonic instruction (Conners, 1992; Joseph & Seery 2004).
Saunders and Defulio (2007) conducted a study in 30 adults with mild mental retardation to determine whether phonological awareness and rapid naming skills are correlates of single word reading. The investigators presented four tests of phonological awareness (for rime, first middle and end sound categorization) two rapid naming tests (pictures and letters) and the Woodcock word identification and word attack subtests. All four phonological awareness measures and both rapid naming measures were significantly correlated with both word attack and word identification skills. The outcome is consistent with findings from typically developing children, suggesting that instruction in phonological awareness would facilitate the acquisition of word attack skills in individuals with mental retardation.

Yopp (1988) identified two levels of phonemic awareness (1) simple phonemic awareness in which tasks such as isolation of sound, blending, segmentation are included and (2) compound phonemic awareness which consists of phonemic deletion and word to word matching tasks. Compound phonemic awareness seems to result from reading experience, but may be important for further advancement in reading (McCormick, 1995).

Several authors give guidelines to maximize the effectiveness of instruction in phonemic awareness. Bus and Van Ijzendoorn (1999)
reminds to start instruction early, that is, in preschool and kindergarten before children have begun to read. At this age most children benefit from small group instruction that is relatively brief (e.g., 15 minutes daily) and that includes engage in game like activities. Ehri et al., (2001) directs to focus on limited set of skills such as blending and segmenting and to teach these skills explicitly and systematically. Also use methods that integrate instruction in sound letter correspondence to directly link newly acquired phoneme awareness to reading and spelling (Bus & Van Ijzendoorn, 1999; Ehri et al., 2001; National reading panel, 2000).

Whitely et al., (2007) Conducted a longitudinal project that identified young children at risk of literacy difficulties and asked why some of these children fail to benefit from phonologically based intervention. Reception class children were screened to identify a group at risk of literacy difficulties and a matched group of children not at risk. Profiles were compiled for each child including measures of reading, spelling, memory, rapid naming, vocabulary and phonological awareness. A daily 15 week, small group intervention was implemented with 67 at risk children. Those who had not made progress in their literacy following this intervention participated in a second, individually administered intervention. The results indicate that letter knowledge and
expressive vocabulary are key factors mediating a child’s ability to benefit from a phonologically based intervention.

Frederickson and Wilson (1996) evaluated a phonological awareness training programme (PAT) the results of which suggested that phonological awareness training which incorporates reading, spelling and writing can form a useful part of a literacy programme for children with reading disabilities. Significant improvements in reading and spelling were found in the children who had followed the PAT programme. In addition to this, phonological skills such as rhyme fluency and spoonerisms, as measured by the phonological assessment battery, also showed significant improvement.

2.5 Reading fluency in children with mental retardation

Reading fluency is the smoothness with which students read. A fluent reader group words into meaningful phrases and reads with appropriate expression.

Perfetti (1985) observed that in slow word processing speed interferes with automaticity of reading and, therefore, with comprehension. Perfetti also suggests that slow word reading is debilitating because it consumes working memory and therefore prevents individual from thinking about the text while reading. Slow word reading clogs working memory with processing of word level
reading so as to prevent understanding at content level. Thus both rapid reading of high frequency words and rapid decoding as a means to text understanding appear critical for typical reading development (Fuchs et al., 2001).

Students with learning or reading disabilities demonstrate difficulties in the area of fluency. A common core problem is the ability to read signal words, decode words, and read phrases and sentences automatically and rapidly. Thus reading fluency is an essential skill for all students (Chard et al., 2002).

The U.S. national research council’s committee for the prevention of reading failure noted that because the ability to obtain meaning from print depends so strongly on the development of word recognition accuracy and reading fluency, the latter should be regularly assessed in classroom permitting timely and effective instructional responses when difficulty or delay is apparent (Snow et al., 1998).

Gunning (1998) stated that by one estimate, students may require thirty five or more exposures to a word before learning it, with the slowest students needing almost three times as many exposures as the brightest students. Once the students can recognize words accurately, emphasize speed so that words are recognized instantaneously and fluent reading is fostered.
Although some students can recognize most of the words in the text, they continue to sound out the words rather than rely on visual configuration of the word, context clues and memory. Consequently, their reading, whether oral or silent, become very slow. They expend so much effort on identifying the words that they frequently misses main points of the passage (Bos & Vaughn, 1994).

Fluency instruction is designed to increase both word recognition and rate of reading. According to the theory of automaticity (Samuels, 1987) fluent readers automatically process information at the visual and phonological levels, and are therefore able to focus most of their attention on the meaning codes in the text and integrate this information with their background knowledge. Researchers have found that fluency is a good predictor of comprehension (Rasinski, 1990).

Students develop reading fluency through reading and through listening and watching others read aloud. Anderson et al., (1998) found that one of the better predictors of reading achievement was the amount of time students spent reading books out of school.

Kimmel and Segal (1998), identified the importance of reading aloud to children as a means of developing not only an enjoyment of literature and books, but also as an avenue for learning to read and building fluency. Reading aloud promotes the development of fluency in
a number of ways. (1) It allows the teacher to model fluent reading, (2) reading aloud allows the students to listen to and discuss books that may be difficult for them to read. Many students with learning and behaviour problems have listening comprehension that is several years more advanced than their reading comprehension, (3) reading aloud provides background knowledge for the students reading the book themselves. Once children have listened to a book, they are more likely to select it as a book they want read.

Polloway and Patton (1997) explained the techniques that help students to become more fluent readers in terms of both word recognition and ultimately comprehension.

1. **Neurological impress method:** Here the student and the teacher read aloud in unison or echo fashion. The instructor sits behind the student and reads slightly faster and louder, pointing to the words as they are read (Ekwall & Shanker, 1988). As the reading improves, students may begin the finger movements themselves. This method is recommended for the use 10 to 15 minutes daily up to a maximum of 8 to 12 hours.

2. **Repeated readings:** Repeated reading is reading a text over and over to achieve fluency (Gunning, 1998). Repeated reading is based on the notion that students repeatedly read the text, they
become fluent and confident in their reading (Samuels, 1979). With repeated readings students receive a selection of approximately 200 words in length with instruction to practice reading it orally while listening to a tape of the same material. When students decide they are ready, their time and errors are recorded. After further oral practice, another time/error check is made. This procedure continues until the student reads 85 words per minutes, at which time the process begins again with new material. Graham and Johnson (1989) note that three readings of the same passage noticeably improve reading comprehension and fluency of students with learning disabilities.

3. **Choral repeated reading**: Choral repeated reading is a strategy that combines ideas and procedures from repeated reading and choral reading. It was developed by Bos (1982) and used with students who have significant reading difficulties in word identification and reading rate. There is a three-step process for using this strategy: (i) teacher reads (ii) teacher and student read, and (iii) student reads.

(i) **Teacher reads**: Teacher reads a piece of text to the student, ranging from several sentences to a paragraph. Read at a normal rate and move teachers finger smoothly along underneath the
words as the students watches, making sure the reading matches
the movement from word to word.

(ii) Teacher and student read: Read the same section together aloud
with the student. Continue to point to the words. Teacher and student read the section once or several times, rereading until the student feels comfortable reading the section independently.

(iii) Student reads: Have the student read the section independently.
Pronounce any unknown words and note the words that student constantly has difficulty recognizing.

Bos and Vaughn (1994) suggested when teaching fluency, techniques for improving word identification skills and comprehension should be taught.

4. **Imitative reading:** This is the procedure for improving the fluency of students with severe reading difficulties. The teacher reads very simple, short segments aloud as the student follows silently. The student then tries to read the same phrase or sentence aloud. The process is repeated until the student reads the material with fluency. Gradually the teacher increases the length of the sections being read to the student (Henk et al., 1986).

5. **Paired reading:** In paired reading, two students who work well together and who have similar instructional reading levels read
aloud in unison (Henk et al., 1986). Material familiar to both students is used in the initial levels of paired reading. After the two develop a sense of trust and cooperation, less familiar text can be introduced. As they work together, one student can assist when other hesitates or make an error.

6. **Wide reading:** (Gunning, 1998) Fluency can also be fostered by having students read a wide variety of easy books. As they read books in which nearly all the words are known, their ability to recognize the words faster should increase. Students especially if they are younger, might also be encouraged to read the same books a second, third or even a fourth time.

**Carbo Recorded-book method.** - An excellent way of providing repeated reading is through taped stories. Reading alone with tape recorded or CD Rom stories can be highly effective way to foster fluency and comprehension (Shany and Biemiller, 1995).

Gunning (1998) listed many other activities for enhancing reading fluency.

1. **Words on wall** – an excellent device for reinforcing high frequency words is to create a word wall. About 5 or so new words are added each week (Cunningham & Allington, 1994).
2. Sight word commands – create a series of cards that contain commands composed primarily of high frequency words. When the command is displayed, the class carries it out.

3. Read the label – label appropriate items in the class.

4. Forming words – let students use magnetic letters to spell high frequency words.

5. Forming phrases and sentences – while forming phrases and sentences, students get sentence sense and comprehension which also provide fluency in high frequency words.

6. Sorting – sort words into various categories (e.g. action words, colour words, number words)

7. Audiovisual aids – CD-Rom read alongs

   A high tech approach for introducing and reinforcing high frequency words in that of CD-Rom read alongs. The presentation features graphics which include animation, still pictures or movie clips, background music and sound effects; and an oral reading of the story. As the story is being read, the text is highlighted so that viewer can read along. If the students wish they can click on a word and have it pronounced. The viewer can even control the pacing of the reading so that the selection can be read at a slower than normal rate CD-Rom books can be especially helpful for youngsters.
Jones (1987) investigated the effect of a new computer assisted instructional programme designed to increase decoding fluency in reading with learning disabled students. After ten weeks of daily 15 minute practice sessions, subjects showed substantial improvement on word practiced, words never practiced, and reading speed and accuracy.

Henk et al., (1986) reported that learning disabled students with lack of fluency in oral reading may be helped to experience a feel for fluency through any of six alternative reading techniques: 1) imitative reading, 2) repeated reading, 3) radio reading, 4) phrase reading, 5) paired reading and 6) neurological impress method.

Fuchs et al., (2004) contrasted the validity of word identification fluency and nonsense fluency with 151 at risk children studying in first grade. In word identification fluency the child is presented with a single page of 50 high frequency words. The student had one minute to read words. If a student hesitated on a item for 4 seconds, the examiner prompted him/her to proceed to the next word. In nonsense word fluency students have one minute to read consonant-vowel- consonant-pseudo words. The score is the number of sounds pronounced correctly. The study showed the superiority of word identification fluency over nonsense word fluency.
Hurst and Joliyette (2006) examined the effect of private versus public assessment on the reading fluency of middle school students with mild mental disabilities. An alternating treatment design was used. Both methods of timed reading appeared to be effective in improving student’s reading fluency, however students preferred the public assessment.

2.6 Writing skill development in children with mental retardation

The development of written language skills represents the summit of the language literacy. Built on and closely related to listening, speaking, and reading, writing is a critical component and an important goal within programmes of language development. Reading and writing cannot be separated each other but are complementary. Adequate emphasis should be placed upon pupils in writing. In writing students read their own written products as well as those of other learners (Ediger, 1999).

Written language subsumes the areas of handwriting, spelling and written expression and thus demands that the communication has a variety of mechanical memory, conceptual and organizational skills (Polloway & Patton, 1997). Therefore writing can present a variety of significant challenges to students with special needs who may have existing linguistic deficits in oral language and/or reading, low societal
expectation for success and limited encouragement and reinforcement for appropriate usage. Writing has increasingly become a critical occupational skill. Successful performance in a variety of occupation requires the ability to write well (Graham, 1992). It is clear that writing is a critical life skill.

Written expression is the most sophisticated of the language arts. Written expression requires or subsumes several needed skills: (1) hand writing, (2) spelling, (3) vocabulary, (4)syntax, (5) sentence composition and (6) punctuation (Sedlak & Sedlak, 1985).

Educational programme for mildly and moderately mentally retarded should focus on writing skills. It has to be developed among them in order to achieve overall rehabilitation. Written skills help an individual in daily living situations (Reddy et al., 2004).

Written language is commonly viewed as the highest and most complex form of language and communication. Because of many interacting factors such as generally sub average performance, low societal expectations for success and a concomitant low rate of positive reinforcement for writing, the children with mental retardation often uses written language ineffectively in communicating with others. The possession of even minimal written language skill will help to open another avenue of communication and normalization of life.
Langone (1986) stated that in written expression area mildly retarded children can perform the following skills:

1) spells consonant and vowel sounds correctly both out of context and in the context of words,
2) spell a variety of phoneme-grapheme groups both out of context and in the context of words,
3) use dictionary location skills in spelling,
4) demonstrate match-to-sample manuscript writing skills (e.g. use of verbal models),
5) demonstrate match-to-sample cursive writing skills (e.g. use of models),
6) arrange words in logical order to form sentences,
7) write a name, address and other personal information,
8) fills out employment, bank and other applications,
9) write brief letters of complaint,
10) write personal letters and thank you notes,
11) list activities that needs to be accomplished,
12) record brief directions and
13) record notes concerning job description or community activities.

At initial or minimal levels, students must develop the capability to write their names and other personality identifying information. At more advanced levels they need to take notes, respond to test questions, and write letters of inquiry and complete job applications as their transition into adult life (Polloway & Patton, 1997).

**Written languages instruction**
Written language involves a very intricate integration and coordination of memory, vision, and motor skills to produce and record written symbols for later decoding by a reader. The very intricacy of this visual symbol system makes it necessary that the teacher have a firm knowledge of good methods for helping the child to gain and refine writing skills. The person who is learning to communicate through the written medium must be exposed to systematic instruction. In this area in order to grasp essential skills needed in learning to write and spell.

Prior problems in listening, speaking or reading may be reflected, and perhaps magnified, in the area of writing. In order to write in a coherent, understandable manner, one must be able to think, read and comprehend in a logical way.

Graves (1994) stresses that while meaning in writing is paramount, it should not result in the ignoring of handwriting.

Graham and Miller (1980) provide a review of effective instructional techniques and sequence to facilitate letter formation. The following procedure is based on the specific steps they outline for instruction. The first step is the teacher to demonstrate the formation of individual letters while students observe the specific strokes involved. Students’ attention should be directed to the distinctive features of these letters and their comparison with letters previously learned. As the
children begin to transcribe letters teacher provide prompting (e.g. manual guidance directional arrows), then instruction on copying (form near point and far-point). While copying and writing from memory, students should be encouraged to engage in self instruction by verbalizing to themselves the writing procedures being followed. Finally corrective feedback from the teacher, extrinsic reinforcement, and/or self correction can be used so that the letter will be retained and increased legibility will be achieved.

As the students master the formation of additional letters, they should be encouraged to write more about events occurring in the environment.

Alston and Taylor (1987) have suggested a four–step approach to maintenance of writing skill: 1) the whole school must become involved. Teachers are to monitor, praise and instruct, 2) each class should have occasional writing session to practice handwriting. Work should be displayed to encourage and motivate the students, 3) allowance should be made for those with chronic or severe handwriting problems. These students should be instructed on the basics (e.g. grip, posture, paper position) as well as letter formation (e.g. size, shape, reversals, spacing) and 4) group lessons should be included.
Spelling represents an important area of curricular concerns for students with disabilities. Graves (1994) noted that good spelling has social status because it reflects an educated person. Further because writing is communication, spelling must be accurate enough for the reader to respond. The child with mental retardation needs to have many functional words in his/her spelling vocabulary as possible. Functional words can be defined as words which will help the student communicate more effectively and aid the person when he is older to gain and maintain employment and help him to adjust to environmental and social demands, thus achieving some social independence (Payne et al., 1981).

A variety of instructional strategies can assist students having difficulty with spelling. The most successful word-study techniques use multi-sensory approaches, promote revisualization of words, or assist students in formulating specific rules for accurate spelling. One example of word study technique is the Fernald multi sensory approach. (Fernald 1943) It is one of the best known educational techniques for use with learners with disabilities.

Dixon et al., (1994) explain cognitive strategy instruction in writing. This focuses on using text structures to improve writing and features conspicuous strategies. Through modelling and think alouds,
the teacher demonstrates and makes visible the writing process and the strategies used in his/ her own writing. Using modeling, coaching, discussion and other techniques teacher focuses on the following features of process writing: topic selection, purpose (the kinds of questions the text might be expected to answer) identification of audience, brainstorming use of text structure, grouping ideas, using key or signal words, revising, editing and publishing. The instructional program was broken down into four phases: text analysis, modelling the writing process, guiding students, and providing opportunities for independent writing (Raphael & Englert, 1990).

Rousseau (1993) studied on the syntactic complexity in the writing of students with and without mental retardation. Both groups were compared on nine measures of syntactic complexity in writing in three grade levels. A Multivariate Analysis of Variance revealed significant difference for group, but not for grade level or group by grade level. Students with out mental retardation scored significantly better than those with mental retardation in all components of syntactic complexity except clause length. These results support other research in which students with mental retardation showed significant deficits in written language.
Guzel-ozmen (2006) investigated the effectiveness of modified cognitive strategy instruction in writing (CSIW) with mildly mentally retarded student’s skill in writing problem/solution texts. Participants were from two self contained and multiage classrooms in Turky. Instruction had a positive impact on the amount of time student spent planning and writing problem/solution texts. There was also an increase in text length, elements, coherence and quality of students composition. Those effects were maintained overtime.

Katims (2001) investigated the literacy performance of students with mild to moderate mental retardation in elementary middle and high school. Vocabulary was one part of the investigation. The task examined the quality and quantity of each students writing / spelling behaviour. Students were given 10 minutes to write as many as words they could. The result showed that number of words correctly written accelerated by grade level, although there was almost no difference between average words spelled correctly for middle school students compared to high school students (11.1 Vs 11.9. words spelled correctly).

Joseph and Konrad ( 2009) conducted a review to identify effective methods of teaching writing to students with intellectual disabilities. Findings revealed that strategy instruction was investigated more frequently than other types of approaches. Strategy instruction
was consistently found to be very effective for teaching writing skills to students with intellectual disabilities.

2.7. Literacy rich approach

The components of literacy rich approach are: 1) small group practices, 2) story reading by teacher/adults, 3) class room library, 4) writing centre, 5) ongoing monitoring, 6) positive feedback and 7) continuous reinforcement.

Although literature on this approach for literacy instruction is not investigated including all of its components there are studies which examined the benefits of the components separately. Following is the review of available literature in this area.

2.7.1 Literacy – rich environment

Literacy development begins long before children begin formal instruction in elementary school. It proceeds along a continuum, with children acquiring literacy skills in a variety of ways and at different ages. Early behaviours such as reading from pictures and writing scribbles are an important part of children’s literacy development.

Children need three skills to become good readers. Good readers have an understanding of how alphabet works, an awareness that reading is about meaning and sufficient fluency in reading. The most effective
way to convey this is to provide children with a literacy-rich environment.

Clarke (2001) stated literacy-rich environment includes daily reading, extended discourse, (talking or writing), experimentation with reading materials, book talk (discussion of characters, actions and plot) and dramatic play. In this environment children have many opportunities to see how printed words are used for many purposes.

In literacy rich environment, children learn about the world through talking and reading refining these skills along the way. Children’s knowledge of language is built on their own investigative skills applied to interesting topics.

In a study (Katims, 1996) elementary age students with mild to moderate levels of mental retardation made academically significant progress in their understanding written language, comprehension of stories read aloud by adults, word decoding and emerging reading and writing when exposed to literacy-rich environment that used direct and strategic instruction to develop skills in context.

Butler (1975) documents a natural, immersion-oriented approach to literacy development involving a young developmentally delayed child with intellectual, physical, sensory, learning and health disabilities. His
book “Cushla and her books” chronicles the child’s journey from passive helplessness, to a wide variety of vocal, verbal, physical, cognitive and emotional responses to literature in her home. Through continuous exposure to a literature rich environment, Cushla eventually was able to follow a story line, understand story action, and identify main characters within stories.
2.7.2 Small group instruction

Group instruction refers to structured, data based teaching activities in which two or more students are taught simultaneously (Brown et al., 1980). Research indicated that group instruction has been used to teach a variety of language tasks to students with handicaps (Browder et al., 1984).

It has been reported that group instruction may facilitate incidental learning (Oliver, 1983; Orelove, 1982), produce more skill generalization and provide more control of motivational variables (Brown et al., 1980), result in more peer social interactions (Alberto et al., 1980), efficiently use teacher time and students learn from each other by hearing the response of peers and by sharing problem solving experiences (McCormic, 1995).

Alig-cybriwsky et al., (1990) and Winterling (1990) have shown that the students of various ages and disability levels can learn non target task during group instruction. Students may be prepared to function in less restrictive environments which frequently use group arrangements (Fink & Sandall, 1978).

Because one-to-one introduction is not always feasible many reading teachers work in small groups. Where more than one student has the same educational requirement grouping students is appropriate.
Deciding how and when to group students is based on educational assessment, not only those judgments preceding the instruction of a programme, but also during informal daily ongoing evaluation of students reading progress (McCormic, 1995).

Polloway and Patton (1997) also noted the importance of small groups in reading instruction. Strategies matching individual readers to appropriate reading materials require that students be divided into small groups. Teachers must consider options that introduce change and flexibility, into grouping procedures. Interest and skill groups, as well as pupil pairs should be incorporated into programmes at regular intervals.

Ediger (1999) stated the benefits of small groups in reading instruction. Reading cooperatively in small groups can provide much enjoyment and interest in literature. Being with others is a favourite learning style for some individuals. They prefer to work together rather than working on individual basis. They receive practice in reading. Cumulative practice should make increased knowledge, skills and attitude towards reading.

The size of group is one of the first decision that the teacher need to make. The teacher when making decision on number of students include in a group should consider the following variables
(Collins et al., 1991): a) the handicapping condition of the student, b) the student’s experience in group setting, c) the student’s command of appropriate group skills (i.e., ability to sit and attend appropriate social skills), d) the type of task to be taught and e) session length.

In a study on professionals teaching small group found three to be workable number. When there were more than three children with low entry literacy levels, it was difficult to maintain appropriate level of feedback and involvement (Hiebert, 1994). However in a study of a supplementary programme for low achieving first graders, teachers were able to work successfully with five to seven students (Taylor, et al., 1994). In a review of studies of successful corrective programme Guthrie et al., (1978) found that ratio of students to teacher was no higher than four to one. Apparently as ratios grow higher, the teacher efforts are stretched too thin. Based on the research, then, three to four would seem to be the optimum number for small group instruction.

The question of how many is too many in a corrective group depends on the severity of the student’s difficulties. The greater the needs, the smaller then group should be (Gunning, 1998).

Despite some positive features of group instruction McCormic (1995) suggests to take some precautions that teachers must ensure that readers in the group do not receive unequal treatment. Explanation,
prompts, opportunities for response, reassurance and support should be directed to all students in a balanced manner to guarantee equitable student participation in learning endeavors. Bloom (1984) contends that teachers are frequently unaware that they supply more occasion for active engagement of some students than they do for others. Studies have shown that the readers who need most help are the ones who are often ignore (Brophy & Good, 1970).

Vaughn et al.,(1997) list Various types of grouping: (1) homogeneous grouping (same ability group). It is the practice of putting students at approximately same achievement level together for instruction and (2) heterogeneous grouping (mixed ability Group). It is the practice of putting students with a range of achievement levels together for instruction. Homogeneous grouping widens the gap between high and low achievers (Slavin, 1987), it restricts friendship choices.

Although homogeneous grouping may enhance the motivation and self esteem of high achieving students, it lowers the motivation and self-esteem of low achieving students. Also this type of grouping results in social stratification.

Barr and Dreeben (1991) observed, homogeneous grouping has a detrimental effect on low achieving students. Students in low – achieving group are given less attention by the teacher, are less involved
in classroom activities and are given less instructional time. They spent less time on reading and are frequently interrupted by other class members. They read fewer pages, are given more concrete assignments, and are more likely to read orally than silently, which means accurate pronunciation of printed words is likely to be stressed rather than comprehension (Allington, 1984).

Elbaum et al., (1995) surveyed 549 elementary students (grades 3, 4, and 5) including 25 students with learning disability. Result revealed that students at all levels of reading ability liked mixed ability groups and mixed ability pairs most followed by whole class instruction. Students in mixed ability groups were perceived as getting more help from classmates, working more cooperatively and making more progress in reading than those in same ability groups were perceived to be desirable for nonreaders only.

Kamps et al., (2008) examined the effects of small group reading instruction and curriculum differences for students most at risk in kindergarten. It was the implementation of small group reading instruction as secondary and tertiary level components of three-tier model of prevention and intervention. The study consisted of 83 students who were targeted as being at risk for reading failure. Intervention consisted of evidence-based curriculum delivered in groups
one to six students during 30 to 40 minutes sessions a minimum of 3 times per week over a 2 year period. Outcome data were collected for early literacy skills. Result indicated that students in the more directed explicit intervention groups generally outperformed students in the comparison groups.

Helf et al., (2009) studied the effects of two grouping conditions on students who are at risk for reading failure. The authors used a true group experimental design to compare two group conditions – 1:1 (1 tutor to 1 student) and 1:3 (1 tutor -3 students) on the reading achievement of 1st grade students who were identified as at risk. The result indicated that students made comparable progress and gains in reading when instructed in small groups of 3. Because 1:3 conditions used resources more efficiently, it may be preferable to the 1:1.

Moody et al., (2000) examined grouping practices and reading outcomes for students with learning disability in resource room set up. Whole class instruction was the determinant grouping format although several teachers used small group and individualized activities. No significant gains in reading comprehension were evidenced by students in this study. Results from the fluency test were also revealed inadequate student progress in reading.
Farmer et al., (1991) conducted a study to determine if the effectiveness of the progressive time delay procedure when used in small group instruction with students with severe handicaps to teach functional community referenced word reading. This study also investigated whether these students learn other students words through observational learning. Analysis of data indicated that teaching in small group instructional arrangement was an effective way to teach these students using progressive time delay.

Whalen et al., (1996) investigated the use of unrelated instructional feedback when teaching in small group instruction arrangement. In this study these authors confirmed one of the benefits of small group instruction, that is, it allows students to learn from one another. Out of three students in this study, two were mildly mentally retarded. All three students learned each other’s unrelated stimuli provided during instructional feedback.

2.7.3 Story reading aloud by teachers/adults

Ediger (1999) explained the need for reading story to students. Each day teacher should read aloud to students during story time. The books chosen should be interesting to students. Words should be pronounced clearly and accurately. For young children it is especially good to show the books illustrations. Throughout the story time
students should understand an increased number of facts, concepts and generalizations. Knowledge received provides background information for more complex ideas that should be forthcoming. A love for reading by students might be a further end result when the teacher reads orally to students during story time.

Trelease (1989a) suggested many benefits of reading aloud. They are: 1) provide positive reading role model, 2) furnishes new information, 3) demonstrate the pleasure of reading, 4) develops vocabulary, 5) provides examples of good sentences and good story grammar and 6) enable students to be exposed to a book they might not otherwise be exposed to.

McCormic (1995) elaborated the advantages of reading aloud selection of reading materials. According to her reading to student is one of the best ways to get them interested in reading. Not only does reading to students inspire desire to read on their own, it is a direct route to vocabulary development. A good principle to follow when reading aloud to students is to read materials slightly above the level they could read for themselves. Studies (e.g., Leung, 1992) show that reading aloud tends to most affect words that are already slightly familiar students enlarge their understanding of these words, becoming able to use them with greater exactness.
Gunning (1998) also mentioned the relevance of reading aloud. He reminded to read aloud to students even to older ones, on a regular basis. Also set aside a time during the day for free reading, in which students may select to read anything they wish.

Rankhorn et al., (1998) studied the effect of failure free reading programme on students with learning disability who also have severe reading disabilities, 39 students with severe reading problems were taught word recognition and comprehension skills. The intervention was based on their principles identified in research on successful reading programmes. Key steps in the programmes included: 1) previewing the story, 2) listening to the story being read, 3) presenting content from the story, 4) reading the story and 5) reviewing the story. Improved performance in letter word identification, word attack, comprehension, and dictation was evident after intensive intervention. Discrepancies between intellectual ability and reading achievement decreased in more than half of the students.

Fuller (1991) investigated the primacy of story. This researcher applied the Ball-stick-Bird reading system to the teaching of reading to individuals with severe to moderate mental retardation. The system incorporates developmental linguists to make story reading easier for the beginning student. The first books of the series are
composed primarily of nouns and their action verbs, and gradually adjectives are added. In some individuals an intellectual explosion is triggered, as the teaching system taps fundamental building block of human cognitive organization, namely a miniature story built with nouns at first progressing to nouns and verbs, constituting a fundamental unit of cognitive organization which has been termed in story engram. Every human culture talk with the engram, thinks with it, and uses it as a building block to produce bigger and bigger stories. It is the universal trade mark of human brain that it spends much of its walking life listening to, telling and thinking up stories. Two mentally retarded individuals who experienced dramatic personality changes along with the growth in cognition through the use of this approach are profiled.

Mims et al (2009) studied the effect of shared stories on the listening comprehension level of students with significant intellectual disabilities and found that this helped to increase emerging literacy in these students. The procedure was evaluated via a multiple probe design across materials (i.e., books). Outcomes indicate that both students of the study improved on the correct number of comprehension questions answered during all three books.

In the study conducted by Rabren et al., (1999) on reading comprehension of learning disabled student it was found that a small
but significant relationship between children’s interest in being read aloud and later reading ability.

2.7.4 Classroom library

Research indicates that a key to becoming a good reader is to have opportunities to read. Teacher’s goal is to provide students with a wide choice of literature and other reading materials, with opportunities to read and discuss what is being read and with instruction in strategies that allow students to comprehend actively and think critically about what they are reading (Bos & Vaughn, 1994).

Rubin (1997) states the library, properly utilized, becomes the students’ storehouse of information and reservoir of endless delight.

Gunning (1998) explains how to build a classroom library. Even if school has a fine library, it is important that each class also have books close at hand. Students are far more likely to borrow books if they are readily available. The classroom library should be as extensive and diverse as the teacher can make. Because they are inexpensive and have a mature look, paperback books are recommended, especially for older students. Also include hardcover books, young pupils magazines and newspapers.

In addition to creating a physical environment that fosters wide reading, Gunning suggests to build a sense that the class is composed of
a community of readers. Help students to see the many roles that reading can fulfill provide enjoyment, aesthetic pleasure, raise interesting questions, help solve problems, foster personal growth, open up new horizons, stimulate the mind and imagination. Too often students see only that reading fulfills a school role. It provides them practice and help them answer questions that the teachers ask. Discuss books with students. Talk about books in the same way as discussing book with friends.

2.7.5. Writing Centre

Graves (1983) gives guidelines on setting a writing centre. The setting should create a working atmosphere similar to a studio, which promotes independence and in which students can easily interact. Materials and supplies for writing and the students’ individual writing folder are to be stored in specific locations in the room. Students know where materials could be found so they do not have to rely on teacher to get them started, at the beginning of the writing period. The room is to be arranged so students could work together or individually. Conferencing between small groups of students, teacher and students, and student and student should be facilitated with the room arrangement.
McCormick (1995) listed the following points to arrange a learning centre/writing centre.

1. To begin select a single skill, strategy or knowledge area (e.g. learning a word identification strategy, or editing stories). Develop or locate materials and media related to this area. These could include books, pens, pencils, dictionaries, games, newspapers, flannel board and so on.

2. To develop a comprehensive learning experience for the topic chosen for focus at the centre include a variety of response opportunities such as reading, manipulating, observing, writing, creating, comparing, researching, orally answering questions in a tape recorder or typing into a computer.

3. Organize materials at the table or desk maintained permanently for students use.

4. Whenever possible device ways for students to self correct.

5. Post clear and simple instructions at the writing centre so students can complete their activities independently until direct teacher assistance is available.

6. Device a system of keeping records of what students accomplish. Maintain a scheduling calendar for assigning students to the centre.
2.7.6 Positive feedback

Feedback is defined as providing the student information on how well he/she performed during training (Mcguire, 1986). Providing students with frequent and clear feedback during training will reinforce this behavior and encourage them to attend future training sessions. It can be provided by teacher/trainer or by peers (Schloss et al., 1995). Teacher must monitor student responses, inform them in a positive manner to those that are correct and those that are not, and provide immediate assistance in correcting strategies that lead students to inappropriate interpretations.

Feedback to students and instituting corrective procedures necessitates formative evaluation. Formative evaluations are the specific assessment procedures a teacher undertakes periodically throughout instruction to aid in identifying immediate needs (McCormic, 1995). For feedback to have an impact on students understanding, the teacher must be a sensitive observer one who understands the reasons why the student make miscues or offers erroneous explanations of text.

Clinton and Boyce (1975) differentiate the words and phrases used by teachers into two types. They refer to affirmative reinforcers,
which are characterized by words such as right and correct. Informative reinforcers would commonly be referred to as constructive feedback.

When feedback used as a reinforcer, it is always prefaced with an affirmative, followed by a specific phrase statement that focuses on the accuracy or appropriateness of the behavior as in “that’s it, you put the puzzle piece on the table”.

Verbal feedback may also be used to reinforce an attempt in or approximation. For example, “Good, try, you got two out of three right. Now do this the same way”.

Swinson and Knight (2007) conducted a study in which teacher verbal behavior that was directed towards those pupils that the teacher had nominated as being especially difficult to teach. A series of lessons was observed in a secondary school. The quality and quantity of teacher verbal feedback directed to the class as a whole and to the designated pupils was recorded, as was the on-task behavior of the pupils. It was found that the designated pupils were less on-task than their peers and were more likely to “shut-out” in lessons. However they were found to behave appropriately in well run lessons, where on-task rates were high for all pupils. Teacher tended to give more attention to the designated pupils in the form of positive feedback directed toward their work, but also negative attention directed towards their behavior. A positive
relationship was found between teacher’s use of positive feedback and on-task rates of the designated pupils.

Haigh (2007) evaluated the effect of class quiz as assessment tool in a case study. The author made the following observation. “Commencing each class session with a class quiz, which emphasizes the previous week’s work and is supported by immediate feedback, encourages students to revise their notes ahead of the session, undertake more reading and keep pace with course progression. It reduce the necessity for any spoken review of the previous week’s work, provides guidance on the status of current student learning, and creates a knowledge platform upon which deeper learning may be constructed. When pitched at an accessible level, regular class quizzes are popular with students because they reinforce student engagement with the course and provide immediate positive feedback and reward.

2.8 Summary

The researcher has done a comprehensive and exhaustive literature review. This work enabled the researcher to go through and furnish current theoretical and empirical knowledge about literacy development of children with mental retardation in the following areas: reading vocabulary, reading comprehension, phonological awareness, reading fluency and writing skills. It can be seen that lot of research
work has been done in the area of reading vocabulary development. However in other areas very few research studies have taken place. The review further revealed that technology assisted literacy instruction helps children with mental retardation progress highly in literacy skills. Thus the review conducted was really beneficial to the researcher to form hypotheses, design research methodology, particularly tools and reading/writing package, select statistical tests and in analysis and interpretation of data.