Theories Of Reading; An Overview

Cyma Anjum
Asst. Professor of Education, LNMCBM (Edu. Prog.) BRA Bihar University, Muzaffarpur

I. INTRODUCTION

Language plays a significant role in expression of human thoughts and actions. For this, there are thousands of languages and dialects. It opens our knowledge widely. Therefore, language is a significant tool for education. Children first learn to speak a language and then acquire the skill of reading using that language. Learning to read, therefore, is a challenge for them as they enter into school. The ability to read well is the most essential skill in the present society as it determines one's level of success in life.

Readers interact with the text as they try to extract meaning from it. Reading, therefore, is related to thinking. When a student reads fast, it indicates that he/ she can think fast. Hence, it is essential for the students to have suitable materials for reading. According to Wixson, Peters, Weber, and Roeber (1987), reading is a process that creates meaning which involves: (a) the reader's existing knowledge, (b) the text information, and (c) the reading context. Hence, training for reading comprehension always depends on the level of reading, that is the knowledge level and also the level of confidence. As Duke (2003) views, comprehension is a process in which the reader makes meaning by interacting with the text through the combination of prior knowledge and previous experiences, information served in the text, along with his/ her views related to the text.

Reading comprehension, therefore, is one of the major activities in classroom teaching that the student must learn in order to understand various concepts. According to Duke and Pearson (2009) there are three types of classroom instructions.
These are: (i) cognitive strategy instruction, (ii) prior knowledge and (iii) text structure.
(i) Cognitive Strategy Instruction.

A strategy at its simplest level is a process or method for achieving an objective. Research findings indicate that human beings use cognitive and meta cognitive techniques for processing and teaching incoming information, problem solving, and understanding. Research findings suggest that cognitive strategies can be taught and can contribute to success if taught. The researchers used strategy guidance, such as, using mental imagery, forming different types of questions, summarizing, semantic mapping, mapping stories and predicting in order to facilitate the development of reding comprehension skill of students (Dole et al., 2009).

(ii) Prior Knowledge.
Prior knowledge has a significant role in reading comprehension. Prior knowledge is to be triggered for connecting the existing knowledge with the new information during information processing. In fact, the knowledge activation mechanism promotes reading comprehension (Collins et al., 1980). Research findings suggest that Semantic Mapping Strategy is a technique that can be used to encourage prior information activation to facilitate reading comprehension (Carr et al., 1996).

(iii) Text Structure.
Apart from the knowledge of the reading materials, text structure plays a vital role in reading comprehension. It refers to the manner in which ideas are expressed and linked in the text (Hiebert et al., 1983). Good readers usually identify and use the text structure to comprehend the text. The reader pays attention to various aspects of the text when he/ she attempts to grasp different forms of text.

II. THEORIES OF READING COMPREHENSION

There are three different theories of reading comprehension. These are (i) theory of mental

representations, (ii) theory of content literacy and (iii) theory of cognitive processes.

(i) Theory of Mental Representations.

Van Oostendorp and Goldman (1998) expressed that when a reader is reading a text, he can create a mental representation of the text that explains how the reader understands the text. A lot of researches supported at many levels of representation are included in constructing meaning. According to Kintsch (1998), when a reader is reading a text, three various levels of mental representation are created. They are the surface component, the text-base, and the situation model representations.

Kintsch (1998) continued that when the words and phrases and not the meaning of the words and phrases, are encoded in the mental representation, this is defined as the surface component of mental representation. The text-base indicates the meaning of the text and is composed of those parts and connections that are aroused from the text itself.

A text-base can be made without any memory of the accurate words or phrases from the text. According to Kintsch (1998), the situation model is a structure that combines the text-base and the related features of the reader's knowledge.In order to create a text-base, some previous knowledge is required but this knowledge is a more general one that is necessary for decoding texts in general. On the other hand, the previous knowledge in the formation of a situation model is more specific regarding the content of the text.

(ii) Theory of Content Literacy.

Content literacy is the ability to read, understand, and learn from texts on a particular subject matter. There are three types of content literacy: general literacy abilities, content-specific literacy abilities, and previous knowledge of content.

The general and the content-specific literacy abilities indicate some more general type of knowledge that does not hinge on the detailed content of a particular text. This knowledge is applied to make a text-base in the mental representation (McKenna & Robinson, 1990).

Previous knowledge of content is the knowledge that is related to the content of a particular text and is applied to make a situation model in the mental representation.

(iii) Theory of Cognitive Processes.

Difficulty in reading is experienced if one cannot decode and understand the words and is, therefore unable to interpret the text or is unable to understand the text even though he/ she deciphers the terms and carry them out. Lack of word decoding results from a deficiency of phonological transcription of written content, while difficulties of reading comprehension results from trouble concentrating on specific words when reading, perceiving the interrelationship between information received, strategic reasoning, lack of vocabulary skills, inability to draw inferences and lack of reflective language awareness. Such difficulties of children have been studied on the basis of several studies. Some of these studies have been carried out within the framework of PASS (Planning, Attention, Simultaneous, Successive) model of intelligence which is a process-based theory of intelligence (Naglieri & Das, 1988, 1990).

The PASS theory of cognitive processes is based largely on the neuropsychological work of Luria. The maintenance of attention, the processing and storing of data and therefore the management and direction of mental 5 activities comprise the activities of the operational units that work together to produce cognitive functioning (Das et al., 1994).

PASS theory proposes that there are four types of cognitive processes responsible for all kinds of intellectual activities associated with three functional units of the brain in an individual. These are attention (first unit), simultaneous and successive processing (second unit), and planning (third unit) processes. The first functional unit, located in the brain stem and reticular activating system, provides the brain with the appropriate level of arousal for focused attention and resistance to distraction. The second functional unit (occipital-parietal and frontal-temporal areas of the brain) is liable for "receiving, analysing and storing information" using simultaneous and successive processing. The third functional unit is found within the frontal lobes of the brain and is liable for planning, including the programming, regulation, and verification of behaviour (Luria, 1973). This provides the potential for behaviour like asking questions, solving problems and therefore, the capacity for self-monitoring (Das et al. 1994). These processes provide a different perspective that redefines intelligence within the context of cognitive processes (Naglieri

1999). PASS functioning of Human Brain Source: Naglieri, J.A. (1999). The Essential of Cognitive Assessment System

Planning is a process that involves selecting and using strategies in deciding and problem solving. This process is interrelated to other processes of PASS. According to Naglieri and Das (1997c), "planning is a mental process by which the individual determines, selects, applies, and evaluates solutions to problems". This process requires the ways to unravel problems of varying complexity and involves attention, simultaneous, and successive processes and also a knowledge base. According to Naglieri (1999), planning is central to all activities during which there are both intentionality and a requirement for a few methods to solve a problem. Hence, it includes self-monitoring and impulse control. Planning processes are involved in many school tasks. For instance, children work out the ways to find out to memorise words that given by teachers in spelling task.

Attention is a cognitive process that involves focus and concentration to stimulus when there are distractions. This functional unit concerns self-directing, information selecting and persistence of responding. Naglieri and Das (1997c) describe attention as "a process by which the individual selectively focuses on particular stimuli while inhibiting responses to competing stimuli presented over time". This process stresses on the demand of the tasks that involve focused, selective, sustained and effortful activity. According to Naglieri (1999), focused attention refers to directed concentration toward a particular activity, while selective attention requires the inhibition of responses to distracting stimuli. Sustained attention, on the other hand, is related to the ability to keep hold of attention on the required stimuli/ information over time.

Simultaneous process is a method of information coding which integrates several different stimuli into a whole. In this process, individual needs to acquire the power of creating connections among the pieces of information to develop an overall concept. According to Naglieri and Das (1997c), "Simultaneous processing may be a process by which the individual integrates separate stimuli into one whole or group". Simultaneous processing has strong spatial and logical dimensions for both nonverbal and verbal contents. In academic setting, it is involved in understanding grammatical statements that demand the mixing of words into an entire idea. This integration involves comprehension of word relationships, prepositions and inflections, so that the person can obtain the meaning supporting the entire idea involved in the text (Naglieri 1999).

Successive process is another method of information coding that demands respondents to recollect or use information that follow a strict, defined order. Naglieri and Das (1997c) describe successive processing as "a process by which the individual integrates stimuli into a selected serial order that forms a chain-like progression". It is involved in reading, especially in initial reading or decoding of words. This can be illustrated within the use of phonics in English. Children must learn the association of the sounds, in correct order with the letters of the words in order to spell them out. In case of a sentence, on the other hand, children learn the order of words to form a grammatically correct sentence. For example, "Who is this man?" which cannot be "This man is who?" It is important to remember that all the four PASS processes are involved in all the intellectual activities people carry out including reading.

The PASS processes are essentially involved in the process of reading in different ways. Thus, attention helps to focus on relevant information to the exclusion of irrelevant ones. A cyclical system of involvement of simultaneous and successive processes is seen in the entire process of reading. Thus, successive processing helps to identify and remember the sequence of letters in a word, whereas, simultaneous process helps in combining these letters and sounds and pronouncing the word. Similarly individual words are identified and their sequence in a sentence is remembered using the successive processing, whereas, comprehending the meaning of the sentences i.e., contextual interpretation of the knowledge, seeing the interrelationship among information, and combining them into broader information units demands simultaneous processing. Planning, on the other hand, is needed for overall organization and supervision of all these activities in order to attain a goal. PASS processes are tested by means of a test battery, known as Cognitive Assessment System (CAS) which is based on PASS theory of intelligence.

PASS Theory of Intelligence, adapted from Das (2018).

In India, including Odisha, where the present research was carried out, comprehension difficulties are frequently seen among school children. Current newspapers have pointed out repeatedly that schools in primary grades emphasize rote learning at the expense of comprehension. This is more harmful for using a second language (English) as the medium of instruction in the schools. If, somehow the children manage to pass the school final examination and get admission into Higher Secondary courses where the medium of instruction is English and where education is more challenging, the problem proliferates further. The situations are still worse in case of students coming from ODL medium schools who are taught English as one of the language subjects only. Comprehension difficulties experienced by the students at Higher Secondary level may be due to several reasons, like, poor instruction, poor instruction in a foreign language which is student's second language (L2) or even deficits in various cognitive processes. But these need to be investigated systematically so that proper steps can be taken for amelioration of such difficulties and improvement can be brought in their academic attainment. The present research is an attempt to fulfil their requirements.

III. SUMMARY OF RESEARCH FINDINGS

The review of extensive research works carried out in the field of reading may be summarized in the following manner.

1. Research findings suggest that, reading comprehension depends on word decoding, word recognition, vocabulary knowledge, background knowledge, and listening comprehension ability of the reader. The reading materials as well as the reading activities must be interesting for the students so that they can comprehend the text better and will be motivated to read. In fact, both extrinsic and intrinsic motivation have been found to be playing important role in the reading achievement of the students.
2. Research findings reveal that adequate linguistic knowledge about text forms, good long-term memory as well as working memory capacity and strategic reading are essential for good reading comprehension skill. Inference making, predicting and summarizing information while reading are essential strategies for reading comprehension. Readers engaged in active memory storage, integration of information, retrieval and updating information are found to have good comprehension skills.
3. Studies suggest that home literacy environment, socioeconomic background, teaching pedagogy and strength in the first language of the reader contribute towards reading comprehension skills of students.
4. The pass theory of intelligence explains all human intellectual operations as the consequences of interaction among the processes of planning, attention, simultaneous and successive processes. Hence several attempts were also made to study the acquisition and development of reading skills in the context of PASS theory. The findings of these studies suggest that the PASS processes contribute remarkably towards one's reading achievements. Thus, both simultaneous and successive processing are needed for word decoding, but successive processing is particularly needed for acquisition of this skill during the early stages of reading. Simultaneous processing, on the other hand, is needed for reading comprehension at any stage. Planning and attention are needed to initiate and complete the performance on the task at hand and reach the goal.
5. Basing upon these findings, remedial program called PREP (PASS Reading Enhancement Programme) was developed and implemented successfully to improve the reading skills as well as the underlying cognitive processes of children.

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