SCHEMA THEORY-BASED PRE-READING TASKS: A NEGLECTED ESSENTIAL IN THE ESL READING CLASS
Parviz Ajideh
Email: Parviz_333@ yahoo.com

Abstract

Reading comprehension is one of the main purposes of ESL teaching/learning. In brief there are two main outlooks on reading. The first, a product oriented approach to reading, assumes meaning exists in the text itself, and it is text-based factors that determine meaning. In this view pre-reading activities rely mostly on clarifying the meaning of difficult words or complex structures. Whereas, for the second, process-oriented approach to reading, meaning is obtained through a successful interaction between the reader and the text, and it is inside-the-head factors that play an important role in comprehension. Accordingly, background knowledge will be of primary importance for ESL readers, and schema-based pre-reading activities should be used for activating and constructing such background knowledge. In this study, as an ESL reading instructor I worked with a group of intermediate-level students for one academic term, with a special focus on schema-theory-based pre-reading activities. At the end of the term, in a retrospective study the students’ impressions and thoughts of the strategies covered during the term were taken into consideration.

Reading as a Process

Reading is a selective process. It involves partial use of available minimal language cues selected from perceptual input on the basis of the reader’s expectation. As this partial information is processed, tentative decisions are made to be confirmed, rejected or refined as reading progresses (Goodman, 1970, p.260). According to Mackay and Mountford (1979), from this statement, inferences can be drawn which are important in the preparation and use of second language reading materials: First, the definition assumes that reading is an active process. The reader forms a preliminary expectation about the material, then, selects the fewest, most productive cues necessary to confirm or reject that explanation. This is a sampling process in which the reader takes the advantage of his knowledge of vocabulary, syntax, and the real world.

The second inference, closely tied to the first, is that reading must be viewed as a two-fold phenomenon involving process comprehending- and product-comprehension. Third,
reading involves, an interaction between thought and language. The reader brings to the task a formidable amount of information and ideas, attitudes and beliefs. This knowledge, coupled with the ability to make linguistic predictions, determines the expectations the reader will develop as he reads. Skill in reading depends on the efficient interaction between linguistic knowledge and knowledge of the world.

Widdowson (1979) mentions that recent studies of reading have represented it as a reasoning activity whereby the reader creates meaning on the basis of textual clues. This view of how meanings can be negotiated in discourse is consistent with Goodman’s comments on the reading process. Furthermore, what Goodman is describing is a general discourse processing strategy of which reading is simply a particular realization. Accordingly, reading is an act of participation in a discourse between interlocutors. It seems to follow from this that reading efficiency cannot be measured against the amount of information contained in a text. This is incalculable since it depends on how much knowledge the reader brings to the text and how much he wishes to extract from it. Rather, reading efficiency is a matter of how effective a discourse the reader can create from the text, either in terms of rapport with the writer or in terms of his purpose in engaging in the discourse in the first place. In fact, in this view, reading is regarded not as reaction to a text but as interaction between writer and reader mediated through the text.

Alderson and Urquhart (1984) assert that it is possible to view reading both as product and as process. Research has tended to focus upon the product rather than the process. But this is inadequate because of the unpredictable and normal variation in product, and because knowing the product does not tell us what actually happens when a reader interacts with a text. The process underlies the product (which will vary from reader to reader, purpose to purpose, time to time and so on). The value of concentrating on process in research and teaching is that if processes can be characterized, they may certain elements that are general across different texts, and learners can learn in order to improve their reading. The basic rationale behind attempts to describe process is that an understanding should lead to the possibility of distinguishing the processing of successful and unsuccessful readers. This view is dynamic rather than static- that is, it emphasizes a reader’s progression through a text rather than as a product. As Alderson and Urquart (ibid) point out, a product view relates only to what the reader has got out of the text while a process view investigates how the reader may arrive at a particular interpretation. Wallace (1992) reports that researchers into both first and second language reading have argued against the view that texts are self-contained.
objects, the meaning of which it is the reader’s job merely to recover. Texts do not contain meaning; rather they have potential for meaning. This potential is realized only in the interaction between text and reader. That is, meaning is created in the course of reading as the reader draws both on existing linguistic and schematic knowledge and the input provided by the printed or written text.

**Schema: A Brief History**

To clarify the nature and function of schemata, first, I will take a brief look at their historical background: Plato elaborates the Greek doctrine of ideal types -such as the perfect circle that exists in the mind but which no one has ever seen. Kant further developed the notion and introduced the word schema. For example, he described the “dog” schema a mental pattern which “can delineate the figure of a four-footed animal in a general manner, without limitation to any single determinate figure as experience, or any possible image that can be represented in concreto.” (Kant, 1781). Thus, important features of the schema-concept can already be found in the writings of the philosopher Immanuel Kant in the 18th century where he speaks of ‘innate structures, which organize our world’.

According to Brewer (1999) Bartlett developed the schema construct in the 1920s, yet the idea had its main impact on cognitive psychology and cognitive science in the 1970s and 1980s. What was the cause of this 50 years lag? In developing the schema construct Bartlett was essentially proposing a completely new form of mental representation. Unfortunately for Bartlett, he made the proposal during the period when behaviorism was becoming the dominant intellectual framework in psychology, and a core component of the behaviorist framework was the mental entities were to be excluded from scientific psychology. Bartlett gathered much of his data on human memory during the period around World War I. He published some of it without an overall theoretical framework. In the early 1920s he was very frustrated by his inability to work out a theoretical account of his data. He stated that during this period he wrote up several chapters for a book describing his memory research, but eventually destroyed them. However, during the early 1920s he spent much time interacting with the neurologist Henry Head and he reports that these discussions led him to the development of the schema construct. Finally, in 1932 he published his famous book, *Remembering*, which contained a more detailed account of his empirical findings.

The schema concept is frequently attributed to Bartlett (1932) who posited that people’s understanding and remembrance of events is shaped by their expectations or prior
knowledge, and that these expectations are presented mentally in some sort of schematic fashion. Bartlett’s concept was decried for being too vague to be incorporated into any form of testable theory. The lack of a precise definition has isolated various conflicting interpretations of his work. Bartlett’s ideas were swept aside by the impeding tide of behaviorism, until a return to more naturalistic approaches to human memory in the 1970s provided a favorable climate for their revival. Computational models made it possible to tie down Bartlett vague notion and understand the basic properties of schemata.

Khemlani and Lynne (2000) assert that since the late 1960s, a number of theorists (Goodman, 1970; Smith, 1978) have developed interactive theories of reading which place great importance on the role of the reader and the knowledge s/he brings to bear on the text in the reading process. These interactive theories, which now dominate reading research and strongly influence teaching practice, draw heavily on schema theory.

What is a schema?

A schema (plural schemata) is a hypothetical mental structure for representing generic concepts stored in memory. It’s a sort of framework, or plan, or script. Schemata are created through experience with people, objects, and events in the world. When we encounter something repeatedly, such as a restaurant, we begin to generalize across our restaurant experiences to develop an abstracted, generic set of expectations about what we will encounter in a restaurant. This is useful, because if someone tells you a story about eating in a restaurant, they don’t have to provide all of the details about being seated, giving their order to the server, leaving a tip at the end, etc., because your schema for the restaurant experience can fill in these missing details.

Schemata can be seen as the organized background knowledge, which leads us to expect or predict aspects in our interpretation of discourse. Bartlett (1932) believed that our memory of discourse was not based on straight reproductions, but was constructive. This constructive process uses information from the encountered discourse, together with knowledge from past experience related to the discourse at hand to build a mental representation. The past experience, Bartlett argued, cannot be an accumulation of successive individuated events and experiences, it must be organized and made manageable—“the past operates as an organized mass rather than as a group of elements each of which retains its specific character (1932;p.197). What gives structure to that organized mass is the schema, which Bartlett did not propose as a form of arrangement, but as something which remained
active and developing (1932; p.201). It is this active feature of discourse that leads to the constructive processes in memory (p. 249).

For Yule (1985) the key to the concept of coherence is not something which exists in the language, but something which exists in people. It is people who make sense of what they read and hear. They try to arrive at an interpretation which is in line with their experience of the way the world is. Indeed, our ability to make sense of what we read is probably only a small part of the general ability we have to make sense of what we perceive or experience in the world.

Cook (1989: 69) states “The mind stimulated by key words or phrases in the text or by the context activates a knowledge schema.” Cook implies that we are not necessarily dealing with conscious processes, but rather with automatic cognitive responses given to external stimuli. This view clarifies that schemata are activated in one of two ways:

1. New information from the outside world can be cognitively received and related to already known information stored in memory through retrieval or remembering. In this case, new concepts are assimilated into existing schemata which can be altered or expanded;

2. New information can be represented by new mental structures. In this case, in absence of already existing schemata, new knowledge builds up new schemata.

According to Plastina (1997), in both cases, the individual is piecing bits of knowledge together, attempting to make sense of them. It follows that the main features of schemata are flexibility and creativity. Schemata are flexible in that they undergo a cyclic process within which changes are brought about actively and economically, i.e., information is stored in memory and provided when needed with the least amount of effort. They are creative in that they can be used to represent all types of experiences and knowledge, i.e., they are specific to what is being perceived.

Carrell and Floyd (1987) maintain that the ESL teacher must provide the student with appropriate schemata s/he is lacking, and must also teach the student how to build bridges between existing knowledge and new knowledge. Accordingly, the building of bridges between a student’s existing knowledge and new knowledge needed for text comprehension.

A number of organized pre-reading approaches and methods have been proposed in the literature for facilitating reading through activation of background knowledge.
Pre-reading

According to Chastain (1988), the purpose of pre-reading activities is to motivate the students to want to read the assignment and to prepare them to be able to read it. Because the major emphasis in the past has been on the product rather than the process, the teacher is assuming that meaning resides in the reading itself. Too often, pre-reading preparation has consisted little more than the following: “Tomorrow’s reading is really interesting! Read the whole text, pages 32 to 38, and write in complete sentences the answer to the questions on page 39.” A quick analysis of this assignment reveals that it is based on certain assumptions that the reading experts are currently questioning. First, the teacher is assuming that students know the vocabulary and grammar and they are already prepared to read the text. In such an approach to reading the ultimate pre-reading activities may include word definitions, to clarify the meaning of difficult words; and/or some syntactic explanation to help the students to understand complex structures in the text.

According to Chia (2001), some students report that they have no problem with understanding both words and sentence structures of the paragraph, but they cannot reach satisfactory interpretation of the text. In fact, most of college students rely too much on bottom-up processing individual words and analyzing sentence structures, but do not apply top-down processing for the overall view of the text. This may result from the lack of appropriate instruction and practice in applying reading strategies. That is why, it is claimed that providing students with traditional pre reading activities such as word definition, and structure explanation seems to be questionable.

Ringler and Weber (1984) call pre-reading activities enabling activities, because they provide a reader with necessary background to organize activity and to comprehend the material. These experiences involve understanding the purpose(s) for reading and building a knowledge base necessary for dealing with the content and the structure of the material. They say that pre-reading activities elicit prior knowledge, build background, and focus attention.

Pre-reading activities

Pre-reading tasks have tended to focus exclusively on preparing the reader for likely linguistic difficulties in a text; more recently attention has shifted to cultural or conceptual difficulties. However, pre-reading, activities may not just offer compensation for second language reader’s supposed linguistic or socio-cultural inadequacies; they may also remind
readers of what they do, in fact, already know and think, that is to activate existing schematic knowledge.

The experience-text-relationship (ETR) method of Au (1979) consists of students expressing their own experience of knowledge about the topic prior to reading. After the students have adequately shared their knowledge, the text becomes the focus of the class. During this segment of the lesson, the teacher asks the students to read short sections of the text and then questions about the content. The teacher must be sensitive to those text areas that could elicit misunderstandings and work through any difficulties that the students may have. In the final stage, the teacher aids the students to draw relationships between personal experiences and the material discussed in the text stage. This provide an opportunity for each student to make comparisons and contrasts with what they already know and to accommodate the new information into their preexisting schemata. Through this process, student’s schemata become redefined and extended. The teacher has the responsibility of leading the students to the appropriate answers without giving them too much information, so the task becomes one of self-discovery and integration.

Langer’s (1981) pre-reading plan is a three-step assessment / instructional procedure, which, like Au’s ETR method, uses a discussion-based activity in the assessment stage, which allows the teacher, as well as the student, to define the amount of information is needed and which vocabulary items need to be taught or reinforced in order to facilitate comprehension of the text.

The pre-reading plan begins with the teacher introducing a key word, concept or picture to stimulate a discussion. By having the students say anything that initially comes to mind and having that information recorded on the blackboard, participants are able to see the associations. By asking the students questions, such as, “What made you think of…?” they become aware of their network of associations. Like Au’s ETR method, the students also have the opportunity to listen to other explanations and interact with other students. This interactive process also provides students with the opportunity to accept, reject or alter their own initial associations and to integrate them into more accurate pictures of the target concept. The third and final step is the reformulation of knowledge, which provides the opportunity for students to verbalize any changes of modifications of their associations that may have occurred during the discussion phase. The purpose of helping the student to link his/her background knowledge with concepts in the text is to set up appropriate expectations about the language and content of the passage.
Auerbach and Paxton (1997: 259) suggest the following pre-reading strategies of which three major ones as a good indication of schema-theory-based pre-reading tasks/strategies more favor us in this study.

- Accessing prior knowledge
- Writing your way into reading (writing about your experience related to the topic)
- Asking questions based on the title
- Semantic mapping
- Making predictions based on previewing
- Identifying the text structure
- Skimming for general idea
- Reading the introduction and conclusion
- Writing a summary of the article based on previewing

1. Previewing

Swaffar et al (1991) point out the benefits of previewing techniques that allow students to formulate hypotheses about the text. By taking advantage of contextual clues – titles, headings, pictures, students are encouraged to draw inferences prior to reading. In addition, Swaffar views identification of text genre: articles, poetry, nonfiction, and plays, as a very important preview exercise. She suggests that engaging in this type of analysis enables students to identify the probable rhetorical grammar, stylistic markers and possible constraints on the development of ideas.

According to Chia (2001), The aim of previewing is to help readers predict or make some educated guesses about what is in the text and thus activate effective top-down processing for reading comprehension. Several stimuli in a text, such as the title, photographs, illustrations, or subtitles, are usually closely connected to the author’s ideas and content. So, based on any of them, students can make predictions about the content of the text. To make more specific predictions, however, students obviously need more guidance. The following guidelines can help:

1. Ask the students to read the title of the article. Do they know anything about this subject?
2. Have the students read the first few paragraphs, which generally introduce the topics discussed in the text. Can they determine the general themes of the text?
3. Then ask them to read the first sentence of each paragraph, usually the topic sentence,
which gives the main idea of the paragraph. Can they determine the major points of the article?

4. Read the last paragraph, which often reveals the conclusion of the author. Have the students discuss how the author organizes the information to present his point of view.

2. **Questioning**

Some pre-reading activities simply consist of questions to which the reader is required to find answer from the text. Traditionally, this type of question followed the text and was designed to test comprehension, but in more recent materials questions often precede the text and function as scanning tasks.

Questioning can be regarded as another type of top-down processing activity. Questions may be generated by the teacher or by the students and should be done before the reading, rather than after the reading. Reutzel (1985) has proposed the Reconciled Reading lesson to help teachers form effective pre-reading questions. Teachers who adopt the Reconciled reading questions from the comprehension questions that appear in the textbook after the reading selection or in the teachers’ manual. A problem, here, is that not all the questions originally designed as post-reading exercises can be appropriately converted to pre-reading activities.

How do students generate text-related questions even before they read the passage? Williams (1987) gives an interesting three-phase (pre-reading, while-reading, and post-reading) approach to reading, with particular attention to the pre-reading phase. The approach begins by introducing the topic of the passage that students are going to read. Once the topic is presented, students are asked to work in groups and write a list in two columns. The first column lists things about the topic that they are sure of, and the second lists things that they are not sure of or don’t know. See for an example of what a list about whales might look like:

<table>
<thead>
<tr>
<th>Sure</th>
<th>Not Sure /don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Whales are not fish</td>
<td>1. How many kinds?</td>
</tr>
<tr>
<td>2. The largest are 40 meters long.</td>
<td>2. How long do they live?</td>
</tr>
<tr>
<td>3. There are different kinds.</td>
<td>3. What do they eat?</td>
</tr>
<tr>
<td>4. They are used to make soap</td>
<td>4. How fast can they swim?</td>
</tr>
<tr>
<td></td>
<td>5. How heavy are they?</td>
</tr>
</tbody>
</table>
Williams suggests that each member of the group in turn volunteer a fact or question, so that no group member is neglected. Afterwards, the teacher asks a representative from each group to write one or two items from their lists on the chalkboard so that some interesting items, which other groups may not have thought of, can be included.

3. Semantic mapping

According to Chia (2001), many teaching techniques have been developed to activate student’s prior knowledge for effective top-down processing in order to facilitate reading comprehension. Several of them have been empirically proven to be helpful, but some have not. Surprisingly, pre-reading vocabulary exercises, despite widespread use, do not improve overall comprehension (Hudson, 1982; Johnson 1982). In fact according to Johnson, vocabulary study may result in a word-by-word, bottom-up approach that is detrimental to comprehension. But direct vocabulary instruction does not necessarily involve teaching specific words rather equipping learners with strategies necessary to expand their vocabulary. It is also argued that most vocabulary is learned through context, but that the learning-from-context method is at its best for teaching learning-to-learn skills not for teaching vocabulary (Steinberg, 1987; Oxford and Scarcella, 1994). Williams (19871) suggests that pre-teaching vocabulary probably requires that the words to be taught in semantically and topically related sets so that word meaning and background knowledge improve concurrently. Zimmerman (1997) maintains that direct vocabulary instruction focusing on semantic mapping as an acquisition strategy is more effective than vocabulary acquisition activities that teach only words rather than strategies for acquiring words.

According to Wallace (1992), one very popular kind of pre-reading task is “brainstorming”. This may take the form of giving the class a particular key word or key concept. Students are then invited to call out words and concepts they personally associate with the keyword or words provided by the teacher. Brainstorming has many advantages as a classroom procedure. First, it requires little teacher preparation; second, it allows learners considerable freedom to bring their own prior knowledge and opinions to bear on a particular issue; and third, it can involve the whole class. No - one need feel threatened when any bid is acceptable and be added to the framework. For example, these are the kinds of associations which might be called up by the key word money: ‘coin’, ‘bank’, ‘poverty’, ‘pay day’, ‘interest’, ‘purse’, and etc. These bids reflect very different categories and levels of generalization. However, the initial random association can be classified and subcategorized
either by the teacher or the students, and additional contributions from class members or the teacher added to stretch existing concepts. The result of this kind of activity resemble what has been called “semantic mapping”.

As an ESL reading instructor in Tabriz University I worked with a group of intermediate-level students for one academic term, with a special focus on schema-theory-based pre-reading activities. At the end of the term, to conclude, I invited feedback from the students on their impressions and thoughts of the strategies covered during the term. What follows are some students’ retrospective comments on the above mentioned activities:

1. The method you have introduced us made me conscious my subconscious. I tended to read a text word for word until then, being afraid to misunderstand the contents. Now I’m trying to skip as many words as possible even when I am going to read about something not familiar, and I am going to deal with the text I have already had quite a few knowledge.

2. I have never noticed the importance of prediction in reading without your teaching. So far, I have paid attention to the sentence structures and the word meanings rather than the whole meaning of a story. Therefore, it takes a long time for me to read through a whole story. I am afraid that I have not been taught in this way. I want to confess that I have wasted most of my time in English classes in high school.

3. There are many positive aspects of using “predictions”. Firstly, we immediately thinking about the topics help us to understand contents of articles. Secondly, we can improve our reading speed by predicting the following contents. Thirdly, we can associate our knowledge we have concerning the topics and it can help to make our learning much more easier.

4. Finding key words in any text was an interesting technique. I think relying on Key words are more helpful than relying on the structure in reading a text. Now, I am not afraid of unfamiliar texts, because thinking about the key words and making relationships among them will help me to get the main Idea. Even if there is no topic, Key words will guide me to the content of the text.

5. Reading classes were more boring to me. The teacher read through the passages. He wrote new words on the board. He, himself, gave explanation on some complex structures. We had no job except writing the new words from and grammatical points from the board. But now, I think reading comprehension is not boring, I can challenge
all difficult words actively, I can take part in class discussions, I can give my comments, And I can enjoy reading class.
6. During this course I feel I am shopping in the store, and strategies are like the clothes in the store. I am free to choose any clothes (strategy) I want to choose, I just have to buy one or two clothes (strategy) that is really fit to me and that I mostly like.
7. I think it is more easier to ask question when I read something I have prior knowledge with because I have something to base in to ask question.
8. Now I think my brain is more active in reading as if, I read with my brain rather than my eyes.
9. I find that right now I have more confidence to read English; I am not worried with difficult words, because I can go everywhere in the text to get an idea.
10. Now I can see the changes of myself when I read in English . I feel comfortable to read just like I read Farsi.
11. After previewing I can decide how I will deal with any particular text, and which other strategies I am going to follow to have better comprehension.
12. Before, I was a poor imitator of the text. I was with the author’s point of view only. Now it’s not like that. I have a critical reading and I can use my background knowledge
References


Brewer, W.F. (1999). Bartlett’s Concept of the Schema and it Impacts on theories of knowledge Representation in Contemporary Cognitive Psychology. Department of Psychology. University of Illinois at Urbana-Champaign, downloaded from Reading Room-20 th century list: http://www-instruct.nmu.edu/psychology/hwhitake/content/bartlettschema.htm


Chia, H.L. (2001). Reading Activities for Effective Top-down Processing. FORUM vol 39 No1 January March 2001 page 22


---

Parviz Ajideh is a lecturer at English Department of Tabriz University in Iran. He is teaching ESL Reading, Translation, and Testing. He holds a Ph.D. in TEFL.