Simple Techniques to Activate Schemata

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ABSTRACT

The importance of activating schemata to improve reading comprehension has long been advocated in the academic world for decades. However, activating students’ schemata proves to be a challenging task for some teachers. It is generally assumed that schemata activation requires heavy preparation and certain skills and expertise. This article offers four simple techniques that can help activate students’ schemata which, in turn, allow them to perform better in reading comprehension tasks. What is more, the techniques can be performed with minimum preparation, equipments and less time consumption.

1. Introduction

English is positioned as a foreign language in Indonesia. Most people do not study English until they reach junior high school or upper elementary school (4th grade to 6th grade). As a result, we hardly find people communicating in English in public places, simply because it is not the first language. Since learners already have their first language, generally, the second one should be obtained through conscious learning (Cook, 2016). This holds true, especially because most people do not have sufficient access to native users of the language to communicate with. It is only after one reaches certain grades where English is taught at schools that one is formally introduced to the language. Students get to learn English in an environment where most of the language learning is presented in the form of reading materials. Sentence formation, rules of words arrangement and even listening and writing materials are text-book based.
This makes reading probably the most important skill to master in order to learn English properly, particularly reading comprehension.

2. Reading Comprehension

Various definitions of reading have been proposed by experts, each with its own limitations. These varied definitions are mostly resulted from differences in viewpoints and approaches of looking at the skill. Among them are those who view reading as psychological activities where readers transform the symbols they see into knowledge and place them inside their mental storage (Rayner, Pollatsek, Ashby, & Clifton Jr, 2012). Thus, reading is a mental process that occurs when one looks into a written text and starts to absorb the information from the written linguistic message. In Longman Dictionary of Applied Linguistic, reading is defined as:

1. “Perceiving a written text in order to understand its contents. This can be done silently (silent reading). The understanding that results is called reading comprehension.

2. Saying a written text aloud (oral reading). This can be done with or without understanding of the content.”

Other definition by Collins English Learner’s Dictionary is that reading is “an act of looking at and understanding point”. This is very true because reading entails the use of vision to understand words in a sentence and make them meaningful.

To properly understand reading materials, readers should be able to find meaning of the symbols and interpret them. Beyond that, readers are required to see the flow of ideas and grammatical forms of what they read. Beginning readers learn to read, but more advanced ones read to learn and accumulate new knowledge (Alvermann & Hruby 2015). The process involves critical reaction toward what they read to find significance, values and connection among parts of the reading and to broader aspects of life based on what the readers have accumulated to the point where they start reading. Readers are simultaneously using their awareness and understanding of phonemes (individual sound “pieces” in language), phonics (connection between letters and sounds and the relationship between sounds, letters and words) and ability to comprehend or construct meaning from the text.

There are two elements that make up the process of reading comprehension: vocabulary knowledge and text comprehension (Graesser, 2013). In order to understand a text the reader must be able to comprehend the vocabulary used in the piece of writing. If the individual words do not make a sense, the overall story will not either. Students need to continually be taught new words, but they also need to draw their prior knowledge of vocabulary (Gough, Ehri, & Treiman, 2017). Parents and teachers should pre-teach new words that children will encounter in a text or aid them in understanding unfamiliar words. In addition to being able to understand each distinct word in a text, children also have to be able to put them together to develop an overall conception of messages the text wants to deliver. This is text comprehension. Text
comprehension is much more complex and varied than vocabulary knowledge. Readers use many different text comprehension strategies to develop reading comprehension. These include monitoring for understanding, answering and generating questions, summarizing and being aware of and using a text’s structure to aid comprehension.

Comprehending reading material is the key to gain as much knowledge as possible from a piece of writing. The reason is simple; comprehension is always the main goal of reading, despite the many reasons people might have when reading a text. People may start reading because they want to find certain information, to entertain themselves, or as a means of spending leisure time, looking for some topics for an upcoming discussion, and so on. Whichever goal that leads people to read, the accomplishment will always depend on how well they can comprehend the texts. Without comprehension reading is merely a process of transferring information of what eyes see to brain and optionally sounding it. When reading, eyes recognize symbols of meaning, allowing it to enter and become a part of the knowledge. Most of the time readers are not even aware of such process.

According to Clark and Silberstein as cited in An (2013) “research has shown that reading is only incidentally visual”. More information is contributed by the reader than by the print on the page. Comprehension of a text material largely depends on how much knowledge we have accumulated to the point we start reading in regard to the subject. It is this interaction of new information with old knowledge that we mean when we use the term comprehension. To say that one has comprehended a text is to say that the person has found a mental “home” for the information in the text (Anderson & Pearson as cited in An (2013). In other words, our understanding of a text depends on how much related background knowledge we, as readers, possess while reading. Consequently, readers’ failure to make sense of a text is caused by their lack of appropriate prior knowledge that can easily fit within the content of the text since new concepts or ideas can have meaning for an individual only when they can be related to something that individual already knows. Imagine an EFL learner born and lived in Indonesia being handed a short story with no pictures written in Sanskrit with no understanding of their meaning. You may appreciate the words aesthetically and perhaps even be able to draw some small bits of meaning from the page, but you are not truly reading the story. The words on the page mean absolutely nothing but some piece of art. They are simply symbols.

People read for many reasons but understanding is always a part of their purpose. Reading comprehension is important because without comprehending the text, reading doesn’t provide the reader with any information. Another example is when we watch a sequel movie. People who already watch the prequel will more likely catch the ideas behind every action and plot of what they watch. Those who have not may enjoy the show and get entertained to some extent, but do not come to the same level with the ones mentioned earlier. People who watch individual movies of marvel superheroes like Hulk, Iron Man and Captain America would be more excited when “Infinity War” and “Endgame” were released.
Beyond this, reading comprehension is essential to life. There are many situations we can find about the importance of functional literacy. In order to survive and thrive in today’s world individuals must be able to comprehend basic texts such as bills, housing agreements (leases, purchase contracts), and directions on packaging and transporting documents (bus and train schedules, maps, travel directions). Reading comprehension is a critical component of functional literacy. Think of the potentially troublesome effects of not being able to comprehend instruction on how to install new apps for our gadget. We may accidently remove all the important files in it. Even an adult proficient reader might find difficulties when handed some unfamiliar expository text with technical terms like mortgage agreement or banking documents. Failure in comprehending can even cause dire consequences when someone misunderstands the dosage directions on a bottle of medicine or warnings on a container of dangerous chemicals. With the ability to comprehend what they read, people are able not only to live safely and productively, but also to continue to develop socially, emotionally and intellectually.

3. Schema Theory
There are various influential ways of defining schema, and nearly all cognitive definitions of schema stem from Bartlett (Bartlett & Bartlett, 1995) in *Remembering: A study in experimental and social psychology*. He claimed “an active organization of past reactions of past experiences, which must always be supposed to be operation in any well-adapted organic response”. According to Emmott and Alexander (Emmott & Alexander, 2014) Schema theory is a key idea within cognitive stylistics which derives primarily from psychology and artificial intelligence. A schema (plural 'schemata') is a cognitive structure which provides information about our understanding of generic entities, events and situations and so doing scaffoldings our mental understanding of the world.

Schema theory basically is a theory of how knowledge is mentally represented in the mind and used. Singer in An (2013) wrote that “all knowledge is packaged into units. These units are the schemata”, while schema refers to “cognitive constructs which allow for the organization of information in a long-term memory”. From the above definitions, we may conclude that schema is the prior knowledge gained through experiences and is stored in one’s mind. It is an abstract structure of knowledge.

According to Spiro et al. (2018), there are three major types of schemata, namely, linguistic schemata, formal schemata and content schemata, which are closely related to reading comprehension.

3.1 Linguistic schemata
Linguistic schemata refer to readers’ existing language proficiency in vocabulary, grammar and idioms. They are the foundation of other schemata. As is known, linguistic knowledge plays an essential part in text comprehension. Without linguistic schemata, it is impossible for the reader to decode and comprehend a text. Therefore,
the more linguistic schemata a reader has in his mind, the faster the reader acquires information and the better understanding the reader may get.

3.2 Formal schemata
Formal schemata are the organizational forms and structures of written texts. They include knowledge of different text types and genres, and also include the knowledge that different types of texts use text organization, language structures, vocabulary, grammar and level of formality differently. Formal schemata are described as abstract, encoded, internalized, coherent patterns of meta-linguistic, discourse and textual organization that guide expectation in our attempts to understand a meaning piece of language. Readers use their schematic representations of the text such as fictions, poems, essays, newspaper articles, academic articles in magazines and journals to help comprehend the information in the text. Studies show that the knowledge of type and genre of a text can facilitate reading comprehension for readers because the type of the text will offer detailed evidence of the content of the text. Nonetheless, compared with the linguistic and content schemata, the formal schemata offer less power in the reading process (Carrell, in Tomlinson 2003).

3.3 Content schemata
Content schemata refer to the background knowledge of the content area of a text, or the topic a text talks about. They include topic familiarity, cultural knowledge and previous experience with a field. Content schemata deal with the knowledge relative to the content domain of the text, which is the key to the understanding of texts. Since one language is not only the simple combination of vocabulary, sentence structure and grammar, but also the bearer of different levels of the language’s culture, content schemata can make up for the lack of language schemata, and thus help learners understand texts by predicting, choosing information and removing ambiguities.

Perhaps one of the most important schemas that pose immediate threat to students is content or topical schema. As Aebersold and Field as cited in Jahangard, Moinzadeh, and Karimi (2012) assert “If the topic is outside students experience or base of knowledge, they are adrift to an unknown sea”. They follow up by suggesting that activating content schema is an area that needs further exploration.

4. Classroom Implementation
Amongst the main reasons why many people, particularly students, consider reading comprehension difficult is because the students fail to find the connection between what the text says and what they already know. A text material about traveling by train will be more likely understood better by students who live in Java, the only island where train is operational in Indonesia, than students from other places. In comparison, a group of students who has never seen a train, let alone boarding it, and always travel by ferryboats or ships can be expected to get the feel of a text about traveling across the sea better than the first group. If students are showing any or all of the following signs, something needs to be fixed in teaching reading comprehension:
They cannot answer questions about what they just read;
They do not understand the logical sequence of a story;
They are unable to tell the story after reading it;
They cannot connect individual sentences or paragraphs of text together to make sense of what they’ve read;
They do not know the meaning of individual words;
They lose interest in reading or give up quickly.

The above signs suggest that students cannot comprehend the text they read.

When kids do not understand what they read, it affects their ability to succeed in school. All subjects, including science and math, require reading comprehension. Even Tests and exams require good reading comprehension. Lack of it may result in low grades and poor test scores.

Studies of this field can be traced back to decades ago whereas many of them show that readers’ content schemata influence their reading comprehension more greatly than formal schemata. On the whole, familiarity with the topic has a direct influence on readers’ comprehension. The more the reader knows about the topic, the more easily and quickly he gets the information of the text (Mokhtari, 2018). Therefore, if one wants to be an efficient reader, one needs to possess the knowledge about more fields and topics. Learners with more prior knowledge can better comprehend and remember more about the text. For example, when a reading text about Jakarta is presented in a classroom, students who are from Jakarta or have visited the city are more likely comprehend the text better and faster than the rest of the class.

Throughout the time, there are more than a few techniques that have been invented and developed in order to gain access to this schemata for the benefit of reading. According to He et al. (2014) as a number of studies have been done on the effectiveness of learner strategies in second language acquisition, many researchers advocate that teachers should provide students with direct training on strategy use, either in classroom teaching or outside the classroom. Furthermore, they explain that the way to teach reading comprehension is by setting a top-down task. This task is actually the same as the warming-up activities by choosing a topic related to the content of the text, and then ask the students to work in groups to express their opinions on that issue with their background knowledge.

Some of the techniques known to be helpful are quite handful and complex, rendering teachers reluctant to study, let alone apply them in the classroom. The preparation to be made, the required equipment and certain skills to perform the techniques meet the available time for each course are enough to make teachers neglecting these techniques and stay on the conventional ways of teaching reading comprehension. However, by taking advantage of the advance organizers instruments, teachers can devise some simple ways to work with schemata in classroom.

There are, however simple techniques that any teacher can apply with minimum preparation. This article offers four simple techniques that may help activate schemata prior to reading comprehension activities to help students understand better and faster.
Technique 1, Using picture
Let’s say, for example, we are having a text about Jakarta. A teacher can bring up pictures of landmarks or famous places which are well known as the city’s signature. Pictures of national monument (Monas), Ragunan - the biggest zoo in Indonesia, Parliement house and Taman Mini Indonesia Indah (which is said to be the miniature of the country) should be provided. All of these famous places can only be found in Jakarta. Step by step to perform the technique can be as follow:

1. The teacher explains the goals of the lesson and the roles of the teacher and students in the process of teaching learning;
2. The teacher shows the picture related to the topic;
3. Expands the students’ knowledge about the topic through picture related to the topic to attract students’ attention;
4. Ask the students to examine the title of the text together and write down everything they have already known about title of the topic;
5. Discuss what the students have written and ask the students to check their comprehension about the text they are going to read;
6. Ask the students to predict the texts’ content based on students’ knowledge and experience related to the text they want to read;
7. Ask the students to build on what the students have already known, they are required to expand on the terms and information they already understand through series of picture by writing some information related to each picture;
8. Ask the students to elicit a large number of associations by using their prior knowledge that they already posses and make clear connection about their prior knowledge to the topic under the guidance of teacher and then discuss together;
9. Teacher distributes the text of the story;
10. Ask the students to make notes of the new information which they find in the text e.g. difficult words, new terms and generic structure of text;
11. Ask the students to read the text in depth to develop their ability to infer some information from the text;
12. Discuss the generic structure of the text;
13. Ask the students to comprehend the text by answering the questions about the main idea, explicit information, vocabulary, reference and inference of the story.

Note that the schema activation strategy occurs in steps 3, 4, 5 and 6. Teachers can use four or more pictures in pre-reading to give optimum results.

Showing pictures helps giving students a mental image of what they are going to read. The process occurs automatically in an instant. Someone who is originated from certain place or at least spend some time there will instantly think of the place when they see something that characterized the place. It’s a cognitive work which is closely related to one’s storage of memory. Background knowledge plays an essential role in reading comprehension. In an effort to comprehend a text, students rely on their background knowledge to link what they already know to the text they are reading.
Background knowledge includes both a reader’s real-world experiences and literary knowledge. Drawing parallels between background knowledge and texts prior the actual reading activity helps students becoming active readers, thus improving their reading comprehension. For example a student who have visited Jakarta surely has different level of anticipation and expectation toward the text in comparison to students who have not.

**Technique 2, Pre Questioning**

1. The teacher explains the goals of the lesson and the roles of the teacher and students in the process of teaching learning;
2. The teacher asks a couple of questions related to the topic;
3. Expands the students’ knowledge about the topic through the questions related to the topic to attract students’ attention;
4. Ask the students to guess and examine the topic of the text together and write everything they have already known about title of the topic;
5. Discuss what the students have written and ask the students to check their comprehension about the text they are going to read;
6. Ask the students to predict the texts’ content, based on students’ knowledge and experience related to the text they want to read;
7. Ask the students to elicit a large number of association by using their prior knowledge that they already posses and make clear connection about their prior knowledge to the topic under the guidance of teacher and then discuss together;
8. Teacher distributes the text of the story;
9. Ask the students to make notes of the new information which they find in the text e.g. difficult words, new terms and generic structure of text;
10. Ask the students to read the text in depth to develop their ability to infer some information from the text;
11. Discuss the generic structure of the text;
12. Ask the students to comprehend the text by answering the questions about the main idea, explicit information, vocabulary, reference and inference of the story.

No comprehension activity has a longer or more pervasive tradition than asking students questions about their reading, whether this occurs before, during, or after the reading (Durkin, in Mokhtari 2018). We also know much about the effect of asking different types of questions on students’ understanding and recall of text, with the overall finding that students’ understanding and recall can be readily shaped by the types of questions to which they become accustomed. This is in line with Hansen in Cartwright (2015) who said that if students receive a steady diet of factual detail questions, they tend, in future encounters with text, to focus their efforts on factual details. If teachers desire recall of details, this is a clear pathway to shaping that behavior. If, by contrast, more general or more inferential understanding is desired, teachers should emphasize questions that provide that focus. When students often
experience questions that require them to connect information in the text to their knowledge base, they will tend to focus on this more integrative behavior in the future. In a classroom context, teachers can start by preparing two open ended questions which for sure will expand along the course.

The question should be able to draw students’ inner knowledge and by the time they give out the answers, either written or oral, students’ mind were all set up. Because of the question, the students were ready to read the text because they already had some idea or prediction of what the topic of the upcoming text, quite different from what they had always done where they just read the question and try to find the answer in the text. Other reason for the students to actually read the texts was because when confirming their answer for the Pre-questioning they become interested to the text, and decided to read it through. Coincidently for their part, that way when they came across some questions that are related to the text, the students already knew where to look for the answer and did not spend much searching time. A situation that is relevant to Harmer, cited in Taboada and Guthrie (2006) function of Pre-questioning whereas association between interest which develops motivation to read and comprehension level has been occurred.

“The use of pre-questioning as a tool for placing great emphasis on the lead-in stage (where students are encouraged to become interested in the subject matter of the text), encourages students to predict the content of the text, and gives them an interesting and motivating purpose for reading”.

**Technique 3, Pre Discussion**

1. The teacher explains the goals of the lesson and the roles of the teacher and students in the process of teaching learning;
2. The teacher asks a couple of questions related to the topic;
3. Expands the students’ knowledge about the topic through the questions related to the topic to attract students’ attention;
4. Ask the students to guess and examine the topic of the text together and make a few notes of what they have already known about title of the topic;
5. Discuss what the students have written;
6. Ask the students to predict the texts’ content, based on students’ knowledge and experience related to the text they are going to read;
7. Ask the students discuss the content of the text they are going to read where teacher acts as moderator;
8. Teacher distributes the text of the story;
9. Ask the students to make notes of the new information which they find in the text e.g. difficult words, new terms and generic structure of text;
10. Ask the students to read the text in depth to develop their ability to infer some information from the text;
11. Discuss the generic structure of the text;
12. Ask the students to answer the questions about the main idea, explicit information, vocabulary, reference and inference of the story.

In light discussion, students pool what they know about the topic of a text and share their knowledge with fellow students. The objective is to activate learners’ horizon of expectation and helps them identify what the text is about. Since pre-reading activities are ideally in the form of learner-centered, this technique promises to be effective. For example, if the text is about a film review and only one student has seen the film, that student can tell others about the plot, characters and or other notable features of the film.

**Technique 4, Free writing**

1. The teacher explains the goals of the lesson and the roles of the teacher and students in the process of teaching learning;
2. The teacher asks a couple of questions related to the topic;
3. Expands the students’ knowledge about the topic to attract students’ attention;
4. Ask the students to write as much as possible of what they know about the topic of the text that they are going to read;
5. Discuss what the students have written and ask the students to check their comprehension about the text they are going to read;
6. Ask the students to predict the texts’ content, based on students’ knowledge and experience related to the text they want to read;
7. Ask the students to elicit a large number of association by using their prior knowledge that they already possess and make clear connection about their prior knowledge to the topic under the guidance of teacher and then discuss together;
8. Teacher distributes the text of the story;
9. Ask the students to make notes of the new information which they find in the text e.g. difficult words, new terms and generic structure of text;
10. Ask the students to read the text in depth to develop their ability to infer some information from the text;
11. Discuss the generic structure of the text;
12. Ask the students to answer the questions about the main idea, explicit information, vocabulary, reference and inference of the story.

Writing to measure or improve reading comprehension has been applied for ages in academic world. The activity may be conducted prior to or after the reading, depending on the purposes. When students write about any given text, their cognitive works to find information from the piles of data inside their brain and link them with their writings. In addition, when a student was asked to share what he or she has written, teachers have given other students access to view the given topic from the writer’s perspective to some extent. In classroom scenario, some of the students may
write a lot while some others barely write anything. However the looking may be interested to read what their friends have written.

This is relevant to Shanahan (2019) statement that reading involves a process where a reader is trying to predict the topic being read and the on going messages being conveyed by the writer along the course of reading process. Our brain processes the visual information from our eyes, rapidly forming and revising hypotheses about the form and content of what is being read. More to this issue, this idea was also supported by Clarke and Silberstein in Perfetti (2010) capturing the definition of schema theory as follows:

“Research has shown that reading is only incidentally visual. More information is contributed by the reader than by the print on the page. That is, readers understand what they read because they are able to take the stimulus beyond its graphic representation and assign it membership to an appropriate group of concepts already stored in their memories…….Skill in reading depends on the efficient interaction between linguistic knowledge and knowledge of the world”.

5. Conclusion
The four techniques presented above show that activating schemata does not have to be performed with a complex technique that requires elaboration of a set of skills to apply; rather, it can be performed using simple techniques that do not take much time and preparation. Yet, they work just as effective. The most important point of the whole process concerns how teachers build engaging atmosphere, keep monitoring the class and provide assistance when needed to facilitate the activation of schema. In order to accomplish this task, teachers need to be aware and to have a better understanding of their students’ background knowledge. The implication is clear. Activating schemata, which can be done with simple techniques, could help students improve their skills at the most crucial field of learning activities - reading comprehension. Any teacher can adopt these recommended simple techniques in an attempt to improve the quality of English teaching and learning at schools, particularly as far as reading comprehension is concerned.

References


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