

THE INTERRELATIONSHIP BETWEEN COMPREHENSION AND PRODUCTION IN SUMMARIZING TEXT

Elânia L. J. Valkimil*

RESUMO: O presente artigo discorre sobre a interdependência entre leitura e escrita no processo de sintetização. As estratégias e os processos cognitivos usados pelo leitor/escritor na compreensão e de sua capacidade de sintetização através de pistas deixadas pelo escritor no texto-fonte e dos esquemas mentais que eles compartilham entre si.

PALAVRAS-CHAVE: Interdependência; leitura, escrita; sintetização..

Reading comprehension and production in summarizing texts is an active process of meaning construction, by which the summary writer derives a personal interpretation of the textual content, this is, the meaning that he/she has grasped during the inferential processing in reading, according to his/her background knowledge.

Summarization requires the comprehension, evaluation, condensation, and frequent transformation of ideas that have been presented in the original material. In this reduction process, the summary writer has to be aware of what to include and eliminate from the original text, and what combinations make sense in order to generate an appropriate summary based on an already planned and generated discourse.

General factors may influence the task demands of summarization, such as the length, genre and complexity of the original material, as well as unfamiliarity of concepts, ideas, elaborate

* Professora de Língua Inglesa na UNIVATES. Mestranda em Lingüística Aplicada ao Ensino de Língua Inglesa na PUC/RS.

sentence structure, inappropriate or vague organization and lack of background knowledge.

Research has shown that students have to be taught in effective search procedures at a very early age. Starting with very short basic texts, and little by little introducing more sophisticated ones, because the ability to find the central information and transform it into a short summary increases with age and experience.

Sophisticated activities require mental representations of the text, not only in a linear, forward-moving manner, but the summarizer must process the propositions recursively at the whole-text level.

According to Kintsch and van Dijk (1978), and van Dijk and Kintsch (1983), the processes in omitting, transforming, condensing propositions of a text are fundamental in the summarization of the target material.

1 READING AND WRITING RELATIONSHIP

Reading and writing are both cognitive processes that demand linguistic and cognitive activities in the construction of the meaning of a text.

According to Tierney and Pearson (1983), reading and writing are both acts of composing. The reader as well as the writer compose meaning. There is no meaning on the page until a reader decides there is. The meaning is created when a reader uses his/her background of experience together with the author's cues to come to grips both with what the writer is getting him/her to do or think, and what the reader decides and creates for himself/herself. A writer as he/she writes uses his/her own background of experience to generate ideas, in order to produce a text to his/her idealized reader.

Tierney and Pearson also relate reading with thought. Reading generates thought, and writing is the transformation of the thought into a text. Reader and writer assume a reflexive position and interact with the world, bringing their experience and background into the text.

To Squire, (1983), composing and comprehending are process-oriented thinking skills which are basically interrelated. Composing is a process that actively engages the writer in constructing meaning, in developing ideas, relating ideas, and in expressing ideas. On the other hand, comprehending requires the reader to reconstruct the structure and meaning of ideas expressed by the writer. It demands competence in transforming the idea of another.

Squire, in his short stories study with adolescents, demonstrated that the processes of composing and comprehending proceed through predictable stages. For instance, the domain of the language structure, the knowledge and experience in comprehension and production of concepts and ideas, and the acquisition of strategies to unlock the world knowledge they have accumulated are aspects that enhance the composing and comprehending from the very beginning, but in different levels. Children seek to communicate at a very early age within a total context. But the knowledge about rhetorical structures, knowledge and experience to understand and/or to write about an important concept or idea is a lifelong process.

Frederiksen and Frederiksen (1982) state that the cognitive processes that underlie in comprehension, recall and production do not occur isolately. The writer generates the structures and the reader regenerates them. Reader and writer are both active in the construction of the meaning. The writer has to give clues so that the reader can construct the meaning as similar as possible to the writer's intention.

According to Spiegel (1992), the elements of cohesion as referents, ellipsis, vocabulary, connectives are text clues that help the reader in the construction of the meaning. But the ability and success in reading depend on the experiences the reader and writer have in common, as well as, the knowledge and familiarity the reader has about the subject to make the connection and build coherent links with what the writer has expressed.

Poersch, (1993), points out that besides the cohesive elements mentioned before, there are also suprasegmental features,

prosodic clues, such as stress, pitch, expression, intonation, rhythm that help the listener/reader in the comprehension and construction of the meaning.

According to Smith (1983), people not just learn reading by reading, and writing by writing, but they also learn reading by writing as well as writing by reading. He believes that the development in reading and writing just happens if people participate actively in reading and writing experiences that are meaningful for both, reader and writer.

The learning process happens naturally, unconsciously, without effort. People improve their writing by reading through the input of the written material, linguistic structures, elements of the sentences, vocabulary that they have contact with.

According to Stotsky (1993), a number of studies have found a relationship between writing quality and reading experience. The effective writer is also a good reader. There is a positive correlation between good readers and the use of complex syntactic structures in composing. Studies suggest writing activities for improving comprehension or retention of information in reading material. It means that, expressive writing practice combined with reading improves the reading comprehension significantly. She defends that reading may be as good as, or better than, grammar study in improving writing.

2 COGNITIVE STRATEGIES IN SUMMARIZING

During the past years researchers have increased their interest in understanding the strategies and cognitive processes the summary writer uses in reducing a text into its gist.

The different investigators use different terminology in describing fundamentally similar processes in summarizing a text.

To Kintsch and van Dijk (1978), the deletion, omission of irrelevant information, generalization, subsumption of details into higher level categories, and construction, the integration of details into topic sentences are the basic operations to summarize a text.

Brown and Day (1983) identified corresponding processes. According to them to produce adequate summaries, the summarizer has to delete the trivial and redundant information, condensate material by substituting the list of specific items by a more general concept, select and create, if necessary, a topic sentence for each paragraph. And Johnson, N. (1983) suggests that in order to produce concise summaries, a summary writer must perform transformations on the information that are identified as important, such as, deletion of inferable material and replacement of segments by compressing original information.

Wigner, (1991), states that each text can be object of rewriting considering the principles of economy and fidelity. Economy in omitting the irrelevant information, and fidelity, in keeping the most important information of the original text in the transformation of the target material. In summarizing a text a mental model has to respond for the operations of globalization and generalization used in the deletion, substitution and integration of the information. Vigner still presents a third operation that he calls the conceptualization, that means, reducing the information to a theoretical explanation.

In relation to linguistic aspects, the three operations are related to comprehension. Comprehending a text means transforming the information into semantic material, organizing it in the long-term memory, because of the previous knowledge available in the subject memory.

Different researches carried out by linguists have shown that there are cognitive operations that seem to be specific to the task of summarization: a selection process in which conscious judgments are continuously made, and a reduction process in which propositions are deliberately condensed through a variety of higher order transformations, Johnson, (1983). Another aspect that is shared among them is that the concise representation of the main topics requires a more complex integration and combination. The transformation of the original propositions of the text into topic sentences involves complex cognitive operations such as backtracking and reviewing, manipulating larger chunks of a text, in which the

summarizer actively transforms using his/her own words in combining and rearranging the text segments. This demands a general background knowledge of the representations built at the linguistic, conceptual and contextual level.

Ruth Garner, (1985), shows in her findings that the ability in identifying the main information and transforming it into a summary increases with age and experience. Many other researches confirm that the transformation of a text into its gist requires an increased processing capacity that may be unrealistic to expect young children to be able to acquire this skill before adolescence.

3 A READING COMPREHENSION AND TEXT PRODUCTION MODEL

In the processing of text comprehension and transformations involved in summarizing underlie mental operations that demand previous knowledge of the syntactic-semantic structures of the language, as well as, the ability to infer the information necessary for the comprehension and summarization.

The text in its surface structure is formed by a set of sentences or propositions connected by semantic relations. Some of these relations are expressed in the surface structure of the text, and other ones have to be inferred during the process of reading comprehension with the support of different contexts, as specific or general knowledge, a social inference schema.

According to Kintsch and van Dijk, (1978), the semantic structure of a discourse is characterized at two levels, at the level of microstructure and macrostructure. The microstructure is the local level of the discourse, that is, the structure of the individual propositions and their relations. The macrostructure is of a more global nature, characterizes the discourse as a whole. These levels are related by a set of specific macrorules that are responsible for the cohesion of a text. A text is not merely a set of isolated sentences, but a set of structures connected among them that form a global coherent unit, in which is established a linear or hierarchical sequence of

propositions that must be connected to form a meaningful whole, characterized in terms of a discourse topic.

Kintsch and van Dijk ,(1978), propose a propositional model, based on a cyclical process. This processing model specifies the sets of mental operations that underlie in the process of comprehension and production of a text. The use of macrorules that through a cyclical process provides a coherent discourse, reducing the text to its essence, generating a new text that comes out from the processes of comprehension, this means, the construction of a macrostructure, organized globally during the reading comprehension process.

According to this model, readers progress through a text reducing and organizing its microstructure into a macrostructure through the application of a series of transformations known as macrorules. These macrorules systematically condense the text until it is reduced to its macropropositions.

Macrorules include rules of **deletion**, **generalization** and **construction**. Readers apply a deletion rule to eliminate irrelevant or redundant propositions, that do not presuppose another proposition in a sequence of propositions. A generalization rule is applied to substitute a list of items, or a sequence of propositions for a single proposition or statement.. A construction rule replaces a sequence of propositions, or several sentences, with a single proposition or sentence.

The macrorules are applied under the control of a schema, which constrains their operation so that macrostructures do not become meaningless abstractions or generalizations. To establish a connection and coherence is required general information and world knowledge for the operation of macrorules.

To Winograd, (1982), these macrorules are not applied in a random manner, but they are constrained by the reader's goals. The reader's goals determine which elements in the text are considered relevant or irrelevant. Relevance may also be defined in terms of the various clues signaled in the text structure , called textual relevance, and the contextual relevance, on the other side, may derive from the reader's personal interest or background knowledge.

4 FACTORS THAT MAY AFFECT SUMMARIZATION

According to Hare (1992), there are person, text, and task variables that might affect selection and condensation strategies in summarizing. If the summarizer comes to his/her task with different views of its nature, doesn't know how to use the macrorules, the prior knowledge is unavailable or inaccessible, then the processes of selecting and condensing are impossible to be worked out.

The summarizer may also face text variables in the summarizing process as, the length of the material to be summarized, the genre of texts and its complexity as low-frequency vocabulary, elaborate sentence structure, abstractness, unfamiliarity of concepts or ideas that may lead him/her to difficulties. There are also task variables that may affect profoundly the summarizing process, as the presence or absence of the original material, as well as, the purpose of the summary associated with the length that is being required. If unrestricted summary length may ease the processing demands, on the other side, restricted summary length imposes a greater selection and condensation on the summarizer and may make difficult the summarizing process.

The summarizing process is, without doubt, an intricate web of interrelationships among person, text, and task.

5 STRATEGIES THAT MAKE DIFFICULT THE SUMMARIZATION

According to Winograd, (1982), **the sensitivity** to identify the most important elements in a text, and **the task awareness** of what include and select in summarizing is much higher among fluent, good readers and adults than among children and poor readers. Children do not show any consistency in what to include in a summary. They aren't aware of the importance of the elements in the process of selection.

Researches indicate that good readers are better judges of importance than poor readers. Winograd, (1984), also found that adults are superior to children in conveying more ideas without using

more words. These results suggest that constructing concise representations of material is a skill that develops slowly.

Brown and Day, (1983), also state that activities that require mental representations of the text, processing the propositions recursively at the whole text level, identifying the most important elements are difficult and slowly developing tasks that may not be within the repertoire of young children, and may even be a problem at college level.

6 IMPLICATIONS FOR THE TEACHING OF SUMMARIZATION

As demonstrated in the previous sections the ability to summarize a text is very complex, and the ability to produce sophisticated summaries is late in developing. Although summarizing has become increasingly important to researchers it has not being transferred to the classroom yet..

The summarizing task demands some instructions and practice. Teachers should help students to become summarizers, by introducing in their classes short segments of a text, and little by little, providing more complex activities followed up with discussions about how they summarize. Students should be asked to reflect on their work. Teachers should also start with appropriate texts in terms of readability and familiarity of concepts and ideas according to the level of the students. At the beginning students should have the target text while writing their summaries, and as they become proficient at summarizing , they might start summarizing without its presence.

Another consideration concerns between teaching students to write summaries for themselves or for others. The writer-based summaries may be used for understanding text, keeping personal accounts, and for other personal reasons. So, the summarizer needs to be concerned only with personal study needs and not with the constraints imposed by an audience. Such summaries are easier to be worked out and might be a step to a more formal reader-based

summarization.

According to Winograd and Bridge, (1986), little is done in the classroom. The teachers continue working on comprehension activities rather than explicit instructions on how to comprehend. The inability to specify the cognitive processes of readers while comprehending a text is a major reason why little comprehension instructions occur in the classroom.

Although the summarizing model presented by Kintsch and van Dijk and other linguists will not respond to all the texts genres. Principally the texts that don't have a hierarchical linear sequence of propositions, teachers should start working on simple narratives, helping students to identify and apply the macrorules used in the act of summarization.

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information in written prose. In: BAUMANN, James. **Teaching main idea comprehension**. Newark, Delaware: IRA, 1986, p.18-48.

ABSTRACT: The present article discusses the interrelationship between comprehension and production in summarizing text. Strategies and cognitive processes the summary-writer uses in reducing a text into its gist, keeping the most important information of the original text by using his/her background knowledge together with the writer's clues signaled in the text structure to reconstruct the ideas expressed by the writer.

KEY-WORDS: Interrelationship, comprehension, production, summarizing.