

## VOCABULARY AND GIST READING

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### **Abstract**

*This paper deals with the role of vocabulary in ESP reading. Different types of lexical repetition patterns are presented to show their importance in the hierarchization of the information. This is demonstrated by analysing a text following the framework developed by Hoey (1991). Some activities designed to raise student's awareness of vocabulary relations in the building of meaning are presented as well as conclusions about the importance of vocabulary.*

**Key-words:** *reading; lexical repetition; links; bonds.*

### **Resumo**

*Este trabalho trata do papel do vocabulário na leitura instrumental em inglês. Apresentam-se formas distintas de repetição lexical para mostrar sua importância na hierarquização da informação, através da análise de um texto seguindo o esquema de Hoey (1991). Apresentam-se algumas atividades preparadas para que os alunos tomem consciência do papel do vocabulário, bem como algumas conclusões a respeito da importância do léxico.*

**Palavras-chave:** *leitura; repetição lexical; links; bonds.*

## 1. Introduction

First of all, we will try to make clear what we understand as "reading", specifically in relation to second language reading. We think that reading is an active-interactive process, in which an optimum balance must be achieved between the background knowledge presupposed by the text and the background knowledge of the reader. It is an interpretive process that occurs between the reader and the text. In this view of reading, higher-level processing abilities, that is, background knowledge, topic of discourse, inferencing and schemata play a significant role and affect comprehension. Skilled readers make use of lower-level decoding skills such as vocabulary and syntactic pattern recognition. The problem with beginners is that they do not yet possess these decoding skills, at least not to an operative degree. Amos Paran, in his article "Reading in EFL - Facts and Fictions" published in the *ELT Journal*, January 1996, says that "readers must clearly have decoding skills in order to read at all, but at first, by way of compensation, they will also need a large amount of contextual support, since many of the words they are decoding are either unknown to them or accessed slowly". In other words, first-language readers recognise the language and can decode the syntactic structures and the lexis they encounter in texts automatically, while second-language readers, not being able to do so because of their shortage of linguistic knowledge, compensate for this by using top-down strategies, and therefore have to rely more on context and guessing.

## 2. Vocabulary and ESP reading

In EFL teaching, vocabulary has been a neglected area up to a relatively short time ago, but recently there has appeared a growing amount of literature which confirms its importance in all areas of language teaching and learning, in the study of the process of acquisition and in the determination of the linguistic structure of language. As McCarthy says in the Introduction to *Vocabulary* (1990: viii), “No matter how well the student learns grammar, no matter how successfully the sounds of L2 are mastered, without words to express a wide range of meanings, communication in an L2 just cannot happen in any meaningful way”. Nation and Coady, in Carter and McCarthy (1988:98), say that “vocabulary knowledge would seem to be the most clearly identifiable subcomponent of the ability to read”, and they quote Yap (1979) who concludes that “causal links probably do exist between vocabulary and comprehension and that vocabulary is likely to be the predominant causal factor”. Lewis (1993: 17) says that “vocabulary (or lexis) carries more of the meaning of a text than does the grammar”, and that “recent research suggests that using lexical items as pattern generators is more helpful than restricting that role to grammatical forms” (1993: 5).

What we intend to show is how, by means of the recognition of the important vocabulary in a text, a beginner can identify the important sentences and extract the main information. To achieve this, students should be trained in the identification of the lexical items that mark examples (*for example, for instance, like, such as, etc.*), clarifications or rephrasing (*that is, that is to say, i.e., which means, in other words, etc.*) to delete unimportant or redundant information. By means of text grammar students are also trained to recognise the semantic relations that mark cohesion: relations at intersentential level. *Our claim is that if students are able*

*to recognize the key vocabulary in a text and they can relate sentences linked by the repetition of these lexical items, they will be able to extract the relevant information.*

### 3. Types of repetition

In *Patterns of Lexis in Text* (1991), Hoey analyses the different types of lexical and non-lexical repetition in non-narrative texts. According to him cohesion is to a great extent the product of lexical relations rather than grammatical ones. He describes the different types of lexical repetition, and under this heading he includes the following: simple lexical repetition, complex lexical repetition, simple paraphrase, complex paraphrase, superordinate, hyponymic and co-reference repetition and other non-lexical ways of repeating. Only open-set lexical items should be considered repetitions in this analysis. Grammatical items will not be considered here, although they can and do play a role in the overall cohesion of a text.

**Simple lexical repetition:** a lexical item that has already occurred in a text is repeated and the only changes are those due to a closed grammatical paradigm: plurals or verb endings. For example: *substance - substances, move - moving*. One difficulty we can encounter here are the cases of polysemy and homonymy where the words do not retain the same meaning when they are repeated.

**Complex lexical repetition:** this is when two lexical items share a lexical morpheme, but are not formally identical, as for example in the case of some antonyms, or when they are formally identical, but have different grammatical functions. Examples: *compose - decompose, change (verb) - change (noun)*.



reference would be *Thomas Edison* and *the inventor of the electric bulb*.

There are other non-lexical ways of repeating: these include personal, demonstrative and possessive pronouns and other substitution links such as *one, another, do, so, the same*, etc. All these have to be distinguished from lexical links by their directionality. Lexical items in lexical repetition or paraphrase links do not depend on each other for their meaning, though they share a dependence on co-text for the realisation of their meaning potential. Textual or non-lexical items, on the other hand, entirely depend on other items for their interpretation and have no definitional meaning in themselves. Their function is to substitute for lexical items.

As it can be seen, meaning can be reiterated in different ways in a text. Repetition not only contributes to the cohesion, but also gives the reader important clues as to what the main information is and where we can find it. All these types of repetition are used to establish links. *Links*, then, are connections by repetition between items in a text; they are both lexical and non-lexical cohesive relations. A *bond* is a connection that exists between a pair of sentences by virtue of there being an above-average number of links relating them. Usually, the requisite number of links is three, and it is never less than three; but sometimes for texts in which there are a great number of repetitions, the threshold may be four links or more. As an example, let us consider two sentences (31 and 32) taken from the text *A chemical classification of matter* (Pottenger and Bowes, 1976:40)

*Matter that does not fit the description of a pure substance is classified as a mixture. A mixture is matter that is composed of two or more substances,*

*each of which retains its own characteristic properties within the mixture.*

The words *matter*, *substance(s)* and *mixture* are repeated in both sentences, so we can consider that there are three links connecting these sentences. Therefore, we say that they create a bond between the two sentences.

What is the significance of the identification of links and bonds in a text? Hoey (1991: 125-126 ) makes two claims about this. In the first one, which he calls the *weak claim*, he says that “each bond marks a pair of sentences that is semantically related in a manner not entirely accounted for in terms of its shared lexis”. The second or strong claim states that “because of the semantic relation referred to in the weak claim, each bond forms an intelligible pair in its context”. What these claims say is that two bonded sentences make sense when read together, even if in the text they appear quite far apart, and that their meaning together agrees with the meaning they have where they belong in the text.

What Hoey says, and what we are trying to show is that it is possible to get good sense out of a text by reading mutually relevant sentences, as long as these sentences are bonded. However, students need not be introduced to links and bonds. All they need to be told is to look for sentences with the same or closely related words in them. The ability to recognize repetitions influences the way in which a text is interpreted. If the reader does not recognize some of the links, for example in the form of synonymy, hyponymy or co-reference, he might fail to make important semantic relations between sentences. Therefore, text grammar should be emphasised so that students recognize lexical semantic relations between sentences.

#### 4. An application of Hoey's theory

We have applied Hoey's analysis to the text "Energy", taken from the book *CHEMISTRY - A First Course* (Kroschwitz & Winokur, 1980: 21-22):

*1. As you may recall, matter is defined as anything that occupies space and has mass. 2. It turns out that in addition to mass, all matter has what is called energy. 3. **Energy** is the ability to do work. 4. There are different types or forms of energy: heat energy, electric energy, solar energy, atomic energy, to name a few. 5. All forms of energy can be classified as either **kinetic** or **potential** energy. 6. **Kinetic** energy is the energy of matter in motion. 7. A moving car possesses kinetic energy, which lets it do the work of carrying people or pulling a trailer. 8. In chemistry, we talk more about **potential** energy, which is the energy matter possesses because of its position or composition. 9. A rock at the top of a hill has potential energy because of its position. 10. If it begins to roll down the hill, the potential energy will be converted into kinetic energy. 11. You contain a great deal of potential energy. 12. Move your arm. 13. You just changed some of your potential energy into kinetic energy. 14. Your potential energy comes from the composition of the matter in your body. 15. All matter contains **chemical energy**, the potential energy which comes from the way the matter is put together. 16. Gasoline contains chemical energy, which is released when it burns. 17. Note that chemical energy and all potential energy is **stored** energy. 18. Stored potential energy is used by changing it to a form of*

*kinetic energy. 19. The energy changes that occur within an automobile cylinder offer good examples of what is meant by a change in form of energy. 20. The gasoline-air mixture, rich in chemical energy, is introduced into the cylinder. 21. Electric energy produces the spark (light energy) that ignites the gasoline, converting the chemical energy of gasoline into heat energy and the mechanical energy of the moving piston. 22. Thus the potential energy of gasoline is converted into the kinetic energy of the moving piston and the moving car.*

*23. Although energy can change form, the total amount of energy in the universe is constant. 24. This is one way of stating the **Law of Conservation of Energy**. 25. Another way to state this law is to say energy is neither created nor destroyed in any change in matter. 26. Both statements tell us that we can never make new energy and we can never destroy what we have.*

*27. What is meant, then, when we hear on the news that we must save energy? 28. The answer is that saving energy means keeping it in a useful, potential (stored) form. 29. The message is that we must save fuels, rich sources of chemical energy. 30. If we burn all our fuel, the universe will still contain the same amount of energy, but it will not be in a form that is useful to us.*

The identification of links and bonds resulted in a repetition matrix where we could appreciate which sentences were linked and which ones established bonds. In this way we could detect *central* sentences: the ones with the larger number of bonds, and *marginal* sentences, the ones with few or no bonds. We could also see that there was a great

variation among the number of bonds that different sentences established. For example, sentences 3, 12, 20, 27 and 29 are not bonded to any other sentence. Sentences 1, 4, 16, 19, 23, 24, 26 and 30 have only one bond. All these can be considered marginal sentences. Sentences 10, 11, 13 and 14 are bonded to other sentences but are also considered marginal because they belong to examples. The function of marginal sentences is generally to relate earlier sentences to later sentences, they act like sentence-length adjuncts: they present examples, reject a possible topic of discussion or refer to tables, diagrams, figures, etc. Eight sentences are bonded to 4 or more other sentences: 2, 5, 6, 8, 15, 18, 25, 28. These could be considered central sentences.

If we omit marginal sentences, and also sentences related to examples and those that contain repeated or redundant information, we end up with a passage that is an abridgement of the original. Another abridgement procedure consists in the combination of central sentences:

*2. It turns out that in addition to mass, all matter has what is called energy. 5. All forms of energy can be classified as either kinetic or potential energy. 6. Kinetic energy is the energy of matter in motion. 8. In Chemistry, we talk more about potential energy, which is the energy matter possesses because of its position or composition. 15. All matter contains chemical energy, the potential energy which comes from the way the matter is put together. 18. Stored potential energy is used by changing it to a form of kinetic energy. 25. (Another way to state this law is to say) energy is neither created nor destroyed in any change in matter. 28. (The answer is that) saving*

*energy means keeping it in a useful, potential (stored) form*<sup>1</sup>.

In the matrix, we can also appreciate that sentence 5, bonded with sentences 10, 13, 18, 22 and 28, is clearly a *topic-opening sentence*, that is, it has bonds predominantly with later sentences. If we omit sentences 10, 13 and 22 that refer to examples, we have a short passage that makes sense on its own, even though these sentences are quite apart in the passage.

*5. All forms of energy can be classified as either kinetic or potential. 18. Stored potential energy is used by changing it to a form of kinetic energy. 28. Saving energy means keeping it in a useful potential (stored) form.*

Sentence 15, bonded with sentences 2 and 8, is *topic-closing*, that is, it is dominantly bonded with earlier sentences.

*2. It turns out that in addition to mass, all matter has what is called energy. 8. In chemistry, we talk more about potential energy, which is the energy matter possesses because of its position or its composition.*

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<sup>1</sup> This abridgement does not differ in any significant way from the one that would be obtained by applying van Dijk's deletion and selection macrorules (van Dijk: 1988). (Sentences: 3, 5, 6, 8, 15, 17, 23, 24, 28, 29):

3 *Energy is the ability to do work.* 5 *All forms of energy can be classified as either kinetic or potential energy.* 6 *Kinetic energy is the energy of matter in motion.* 8 *In Chemistry, we talk more about potential energy, which is the energy matter possesses because of its position or composition.* 15 *All matter contains chemical energy, the potential energy which comes from the way the matter is put together.* 17 *Note that chemical energy and all potential energy is stored energy.* 23 *Although energy can change form, the total amount of energy in the universe is a constant.* 24 *This is one way of stating the Law of Conservation of Energy.* 28 *(The answer is that) saving energy means keeping it in a useful, potential form.* 29 *(The message is that) we must save fuels, rich sources of chemical energy.*

*15. All matter contains chemical energy, the potential energy which comes from the way matter is put together.*

Thus, it can be seen that considering bonding as a main criterion, we have obtained these passages (coherent sub-texts), both of which make sense on their own. Hoey (1991) says that his claims not only apply to a passage as short as this one, but also to sentences in different chapters of a book. So we hope to have provided evidence that Hoey's claims are true as regards our passage, and we have used his claims about repetition to read a text and obtain the gist of it.

It is not necessary that teachers analyse texts in the way we have just shown because it is a complex and time consuming activity. However, special attention should be paid to vocabulary in the choice of texts. The usefulness of the vocabulary is an important factor to take into account.

In the appendix we present some activities that illustrate how we can extract the main information from a text by considering mainly lexical repetitions, even though students are not asked to follow Hoey's analysis closely. We will use the same text: "Energy". This type of text is used to teach ESP reading to university students who are taking up careers related to Exact Sciences. The students are beginners as regards English and their knowledge of chemistry is also elementary. The rubrics are in Spanish, because this is the language used in class in this type of course.

Previewing is the first activity. When a reader faces a text he has already got some information about it. Ordinarily, he is already acquainted with the title, the author, and he also has some expectations about its content. In the previewing

activities, students should be encouraged to think about the vocabulary, basic to the topic, or core vocabulary, in Spanish, so that when they read the text they recognize the English equivalents, especially if they are cognates, or otherwise infer their meaning. The aim of this activity, then, is to activate the appropriate schema. The activation of the schema will enable the reader to make use of top-down strategies to compensate for his deficiency or shortage of linguistic knowledge, that is, his poor decoding skills. Here attention will be paid to different letter types, in this case italics, the use of commas, number of paragraphs, etc.

The second activity encourages a global approach to reading. Most students think reading should be done in a linear way. The overall meaning may be grasped in the first reading, and details can be plodded on later. As Hoey (1991: 231) says, “given the range of reading purposes that do not require total comprehension, we have to wean readers from the belief that they must understand everything in a text to be able to make use of it”.

The third activity consists in the deletion of secondary, unimportant or repeated information, that is, information about examples, explanations, clarifications or references to tables, diagrams, figures, etc. As we have said, students should be trained to recognise marks that signal this type of information.

The next activity should be to pay attention to the words in italics, and to re-read the text to detect words or phrases that are repeated. Students should recognise pronouns and should be trained to identify synonyms and equivalents in the form of hyponyms or general words, while they are reading the text. (The repeated words in this text are: *energy*,

*matter, has/possesses/contains, types/forms, kinetic, potential, change/convert, move/moving.)*

In activity 5 sentences that do not have at least three of the most frequent lexical items repeated are deleted. Attention will be paid to the remainder of the text which will now supposedly contain the important information. This will be used to make a summary, the last activity:

*In addition to mass, all matter has what is called energy. Energy is the ability to do work. All forms of energy can be classified as either kinetic or potential energy. Kinetic energy is the energy of matter in motion. In Chemistry, we talk more about potential energy, which is the energy matter possesses because of its position or composition. All matter contains chemical energy, the potential energy which comes from the way the matter is put together. Stored potential energy is used by changing it to a form of kinetic energy. Although energy can change form, the total amount of energy in the universe is a constant. This is one way of stating the Law of Conservation of Energy. Saving energy means keeping it in a useful, potential form.*

It can be seen that we have been able to make a summary of the passage, and we have done so both deleting unimportant information and also taking into account the repetition of lexical items in different sentences. We have detected the important information by selecting the sentences that contained at least three of the repeated lexical items. We have included sentence 3 because, although it is not bonded to any other sentence, it is important since it presents the definition of energy.

## 5. Conclusions

We think that the recognition of the key vocabulary in a text and the ability to relate sentences linked by the repetition of lexical items will help students to extract the relevant information.

In this proposal emphasis should be placed on:

- \* The selection of texts taking into account the usefulness of vocabulary and paying attention to bonding as an important part of textual organisation.
- \* Teaching of key or core vocabulary and of procedural or indexical vocabulary.
- \* Application of a schema-based approach so that beginners use top-down strategies that compensate for their poor linguistic knowledge.
- \* Application of text grammar as a means for recognising semantic relations between sentences.

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## Appendix

### ENERGY

#### Actividades

1 - Aproximación al texto:

- a - Determine fuente y destinatario.
- b - Lea el título y observe tipografía y signos de puntuación.
- c - Prediga el contenido del texto.

2 - Lea el texto para confirmar predicciones y obtener una idea general del mismo.

3 - Elimine la información secundaria.

4 - Haga una lista con las palabras o frases repetidas.

5 - Elimine las oraciones que contengan menos de tres de estas palabras o frases repetidas.

6 - En base al tema del texto y teniendo en cuenta la información restante, elabore un resumen del texto.

*The authors form a research group at the **Consejo de Investigación de la Universidad Nacional de Salta, Argentina**. At present they are working on **Evaluation**. They have presented papers related to discourse analysis, textual grammar, testing and vocabulary in academic events in Argentina, Chile, Cuba, Germany, Peru and Venezuela.*