

Feeding Your Mind, Improving Your Writing

Alimentando tu mente, mejorando tus escritos

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Abstract

The central concern of the present investigation is to guide high school students to learn and write paragraphs using the traffic signal colours mnemonic technique while studying biotechnology topics. These students participated actively in laboratory experiments, practical workshops and computer classroom sections. They expanded their knowledge and written practice using the resources compiled in a web page and sending some of their compositions via e-mail. From the paragraphs created and corrected by students themselves, it is possible to assert that the “Step Up to Writing” program and content-based instruction provided them with a very useful path to improve both their writing skills and their knowledge about food.

Key Words: Content-based instruction; biotechnology; interactive resources; secondary education.

Resumen

Esta investigación se preocupa principalmente por guiar a estudiantes de secundaria para que aprendan a escribir párrafos usando la técnica nemotécnica del semáforo para estudiar temas relacionados con biotecnología. Estos estudiantes participaron de manera activa en experimentos de laboratorio, talleres prácticos y sesiones en el salón de computadores. Su conocimiento y práctica escrita se expandieron con el uso de los recursos compilados en una página web y con el envío de algunas de sus composiciones vía correo electrónico. A partir de los párrafos creados y corregidos por ellos mismos es posible aseverar que el programa de “escritura intensiva” e instrucción basada en contenidos abrió un camino importante para el desarrollo de sus habilidades escritas y su conocimiento sobre alimentos.

Palabras Claves: Instrucción basada en contenidos; biotecnología; recursos interactivos; educación secundaria.

REVIEW OF LITERATURE

Writing and content-based approach connections

Nowadays, public schools in Colombia are implementing more strategies to motivate English as a Foreign Language teaching in order to help students to be competitive communicators. In the Bogota Bilingualism Program, the Colombian Ministry of Education (Ley 115 feb 8 de 1994) emphasizes understanding, talking and writing in the target language. The Ministry affirms that when people communicate effectively, they can compete and be successful in our globalized world.

Guiding students to improve their writing skills and their academic background knowledge is currently essential to increase their English level while gaining insights to a specific subject matter. That is why this research focused its attention to combine the *Step Up to Writing* program (Auman, 2003) with content-based instruction. This research also dealt with the use of new interactive resources encouraging both teachers and students to make use of web pages, e-mailing, and computer programs.

Among the English language skills, writing has an outstanding relevance since it provides an essential base for students in their learning process. Although the writing practice in this investigation was one of the biggest challenges for some students, researchers found that when students learned to follow the step-by-step instructions, they became more confident and motivated to continue improving their written abilities. When students incorporated new strategies and concepts from a subject of their interest to create their own compositions, they developed not only their understanding about the language, but also their self-value and knowledge.

The writing practice provides important tools to foreign writers of English to strengthen their learning process. Hedge (1991:6) asserts that “effective writing requires a number of ideas and information; a high degree of accuracy; the use of complex grammatical devices; and a careful choice of vocabulary...” The writing training encourages kids to improve their target language. Besides, writing motivates students to be active communicators, Hedge (Op Cit) states: “Through writing we are able to share ideas, arouse feelings, persuade and convince other people.”

When writing lessons are aimed to cover a particular topic, such as biotechnology for the purposes of this investigation, students have more opportunities to learn about the subject using the English language for improving their linguistic abilities. Peachey (2003; 12) declares that “studying a specific subject is thought to be a more natural way of developing language ability and one that corresponds more to the way we originally learn our first language.”

Taking into consideration the importance of writing along with the content-based approach, this research guided a group of high school students to improve their writing skills while studying biotechnology topics. The participants were 29 eleventh graders from the public school INEM Santiago Pérez in Bogotá, Colombia. They developed biochemical laboratory experiments, practical workshops, interactive resources, and obtained access to the information compiled in a web page. They followed the *Step Up to Writing* program, which provided students with easy and simple instructions to produce written texts by means of the traffic signal colors mnemonic technique.

Writing paragraphs

Step Up to Writing teaches students a way to write and organize paragraphs using colors to communicate their ideas. Auman (Op. Cit) explains:

“*Step up to Writing* reminds students of traffic signal colors in which green, red, and yellow enhance each one of the parts of a paragraph. Green presents the topic sentence. Yellow shows the main reasons, details, or facts that relate to and support the topic sentence. Red is the E’s one because it represents the examples, explanations, evidence, events, and experiences to support the reason sentences. Finally, green is used again to restate and remind the reader about what the paragraph or composition is about.”

Lytle and Botle (1990) state that school provides personally meaningful opportunities to students in using writing for articulating, clarifying, critically examining, and remembering ideas in all the disciplines, and thus for making sense in and of their worlds. It was a very valuable and

outstanding task to guide a group of students to produce, correct, and appreciate their own written texts with the purpose of interacting and sharing their feelings, ideas, and knowledge related to food consumption.

Writing paragraphs with content-based instruction

In addition to the use of *Step Up to Writing*, researchers used content-based instruction strategies to help students enrich their written compositions. With Biotechnology topics, students gained practical knowledge in order to develop experimental classes to understand the way to classify food as acid or alkaline, establish differences between natural and fast food, combine food for setting up their own diets, and make milk. Both the results of these practical activities and the students' insights were communicated in their paragraphs.

According to Peachey, (2003) "Content-based instruction is a process in which students focus their attention on any subject using the target language." As a consequence, in this process students made efforts to improve their writing abilities using new concepts and vocabulary while following instructions related to food. Peachey explains (2003):

Content-based instruction can make learning a language more interesting and motivating. Students can use the language to fulfill a real purpose, which can make students both more independent and confident. Students can also develop a much wider knowledge of the world. Taking information from different sources, re-evaluating and restructuring that information can help students to develop very valuable thinking skills that can then be transferred to other subjects. The inclusion of group work helps students to develop their collaborative skills, which can have great social value.

Using new interactive devices

As part of the students' written practice and the acquisition of biochemistry knowledge, kids also used new interactive devices. They explored and worked the activities pasted in the web page [www.freewebsinemresearch](http://www.freewebsinemresearch.com); they also used e-mail for feedback.

The web page created for the purpose of this investigation has eight activities (see appendix 1). Students were instructed to consult this cite during their standard classes as well as part of their extra classroom activities. The page has hyperlinks for looking up the guides, quizzes, tests, hot potatoes activities, short readings, and virtual laboratories; all of these new interactive devices helped them to expand their knowledge. Additionally, students received instructions to write, correct and send their paragraphs via e-mail. They included comments, and opinions about the exercises pasted in the web page and suggestions related to the usefulness of its illustrations and virtual links.

RESEARCH PROCESS

This research comprised three stages: before, during and after intervention. Each one of them was carefully analyzed in order to implement new strategies to get better results.

Before the intervention

A diagnostic test was designed and applied to the students for identifying their knowledge about life styles, food in general, and chemical properties of food. In addition, this instrument tested the subjects' written abilities in the use of vocabulary, punctuation, connectors and the content and organization of a paragraph.

From the results of the diagnostic test (see Appendix 2) researchers concluded that students were able to recognize the vocabulary related to life styles because they had studied this topic in previous classes. However, they did not distinguish the words and meanings about food in general and chemical properties of food. Also, they had difficulties with the content and organization of the paragraphs, especially in terms of the use of connectors.

During the intervention

In order to take advantage of these students' strengths and to help them to overcome their difficulties they were given three classroom activities, two laboratories, and a web page exploration with six interactive activities. (see Appendix 3)

At the end of the intervention stage, students knew the sequence for writing a paragraph, and had written some texts using the traffic signal colors. Nevertheless, they needed to reinforce the way to support the main idea (yellow color); and give examples, explanations, and evidence (red color). They also required more practice with linking words, organization and length of paragraphs.

Because they found some difficulties prioritizing and organizing ideas about biochemistry, it was necessary to provide them more sequenced and concise instructions. Likewise, they were encouraged to expand their reading knowledge by doing the supplemental materials attached in the web page. In the experimental laboratories, kids learned alternative uses of food as pH indicators (red cabbage), homemade gadgets (milk buttons), and a balanced diet.

After the intervention

After the intervention, students answered the diagnostic test again. From the analysis of their answers (see appendix 4) researchers conclude that most of the students supported the main idea and provided examples, explanations, and evidence in their paragraphs. They also improved the use of linking words and the organization and length of paragraphs.

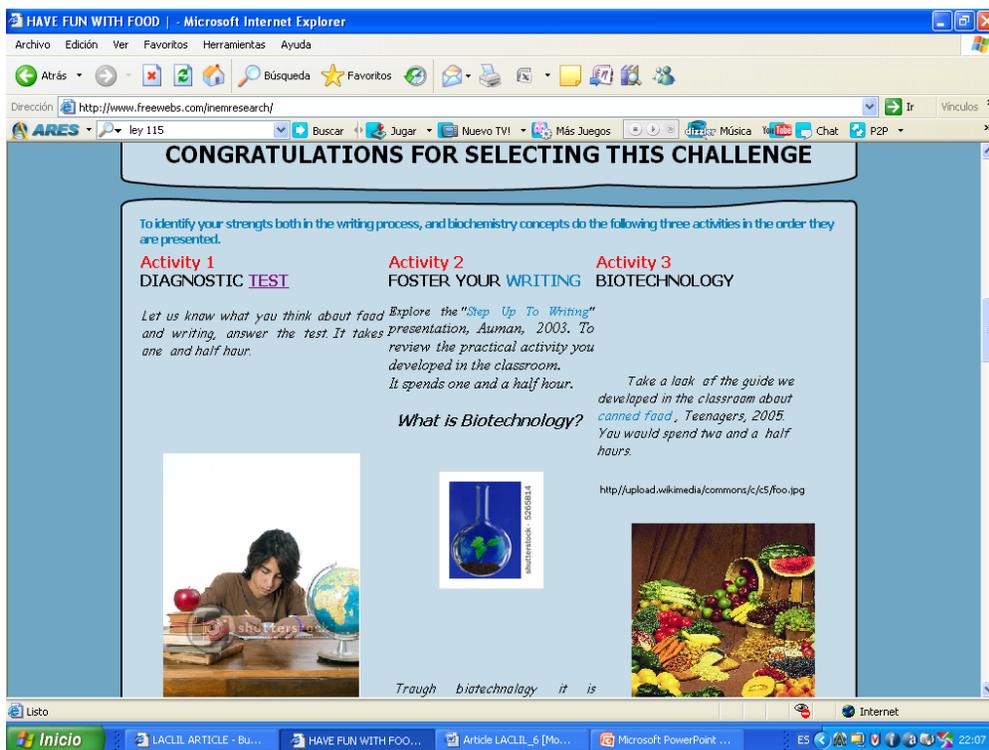
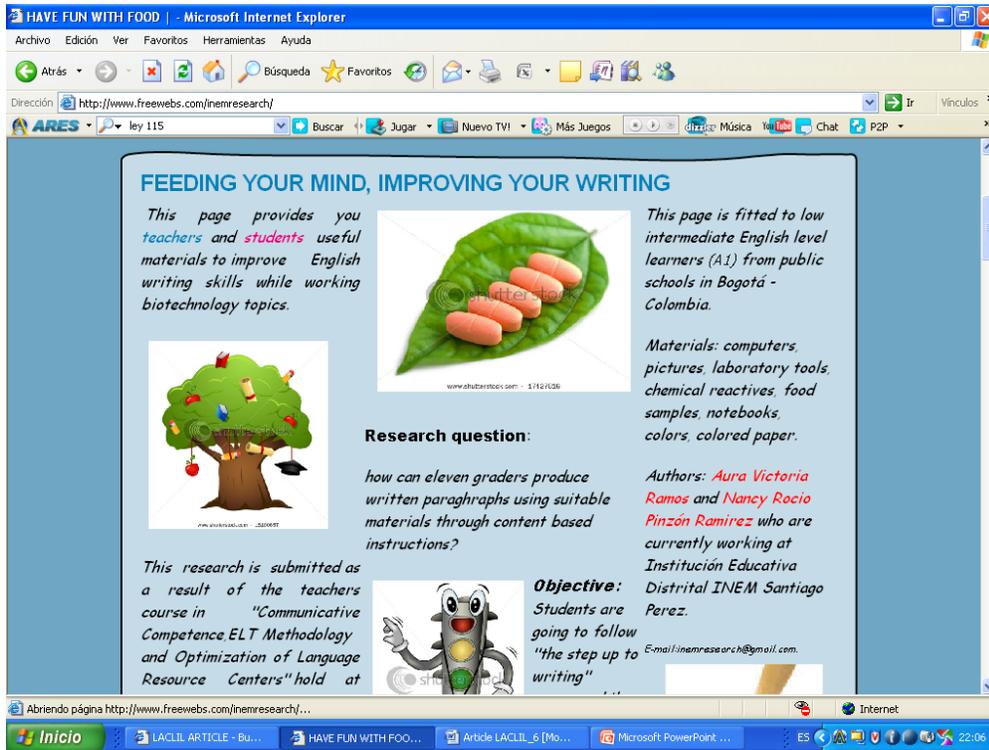
At this stage, students became more familiarized with biochemistry concepts and vocabulary, as well as realizing the importance of some nutritional habits. They also learned some of the industrial uses of food such as milk bottoms. Writing was a compulsory task and the participants became more skilful in writing paragraphs.

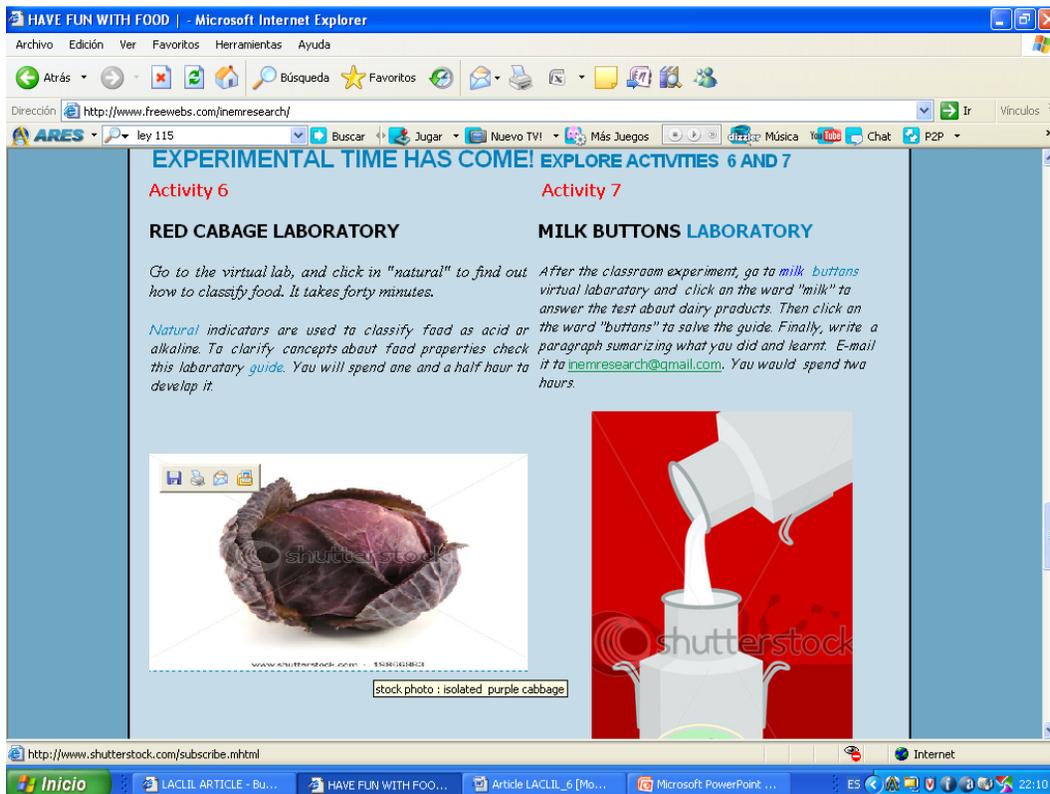
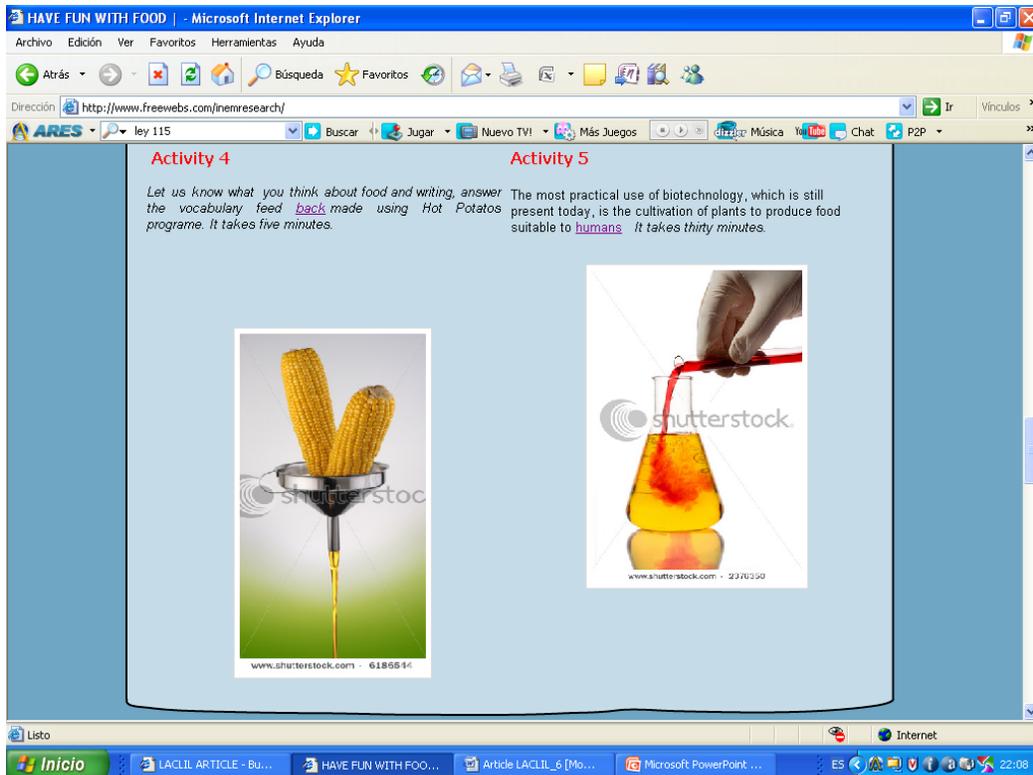
CONCLUSION

From the final compositions corrected by students themselves, researchers noted that through the traffic signal colors mnemonic method and biotechnology topics, students found useful exercises to improve their English writings skills. Furthermore, the web page stimulated them to expand their information about biotechnology concepts and to be much more engaged in the writing practice. The impact of this research resides in the way other teachers and students could be instructed to combine and put into practice *Step Up to Writing* with content-based instruction while gathering and using various interactive resources.

APPENDICES

Appendix 1: The web page





Appendix 2: Results of the diagnostic test

CATEGORY	SUB-CATEGORIES	SCORE %			
		Excellent	Good	Satisfactory	Need improvement
KNOWLEDGE	Life styles	70	10	5	5
	Food in general	3	30	20	47
	Chemistry food properties	0	15	25	60
WRITING ABILITIES	Vocabulary	20	20	20	20
	Punctuation	15	30	35	20
	Connectors	3	15	20	62
	Paragraphs content	50	30	10	10
	Paragraphs organization	30	30	20	20

Appendix 3: Activities during the intervention

Lesson plan	Purpose	Activities	Resources	Results
<i>Step up to Writing</i> (ANNEXED 3)	-Checking the stages for writing a text: prewriting, drafting, revising, proofreading, publishing -Follow the steps to write a paragraph using the traffic light colors -Check the use of connectors	- Ss fill in the blanks with connectors. -They learn the meaning of the traffic light colors to write the: main idea, supporting ideas, examples, explanation and conclusion. -Ss were given a guide with useful connectors and examples.	power point presentation, colors, paper and web page, guide	They understood the sequence to be followed to write a paragraph based on the traffic signal colors (green, yellow, red, green)
Canned food (ANNEXED 4)	- Develop the guide designed about canned food - Learn the way to prewriting and drafting about canned food using the traffic light colors	-Do the exercises presented in the guide -Worked in groups pointing out one disadvantage of canned food -Drafted a paragraph about that disadvantage	Guide, color and paper	Some of the students completed well-written paragraphs while others did not understand the sequence EVIDENCE 1

Chemistry food properties	-Understand how to classify food as acid and alkali -Write a paragraph summarizing the laboratory experiment -Apply listening strategies in order to acquire new vocabulary	- Brainstorm about specific vocabulary to be used during the experiment - Practical experiment about natural indicator and food pH -Writing a paragraph about the experiment using traffic light signals colors	Guide, reading about food, laboratory instruments, oil, water, salt, cabbage, milk, potato, lemon	Students used the traffic light colors to categorize and follow the sequence for writing a paragraph. -Some of them presented difficulties in supporting the main idea they wanted to convey.
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Appendix 4: Results of the second application of the diagnostic test

CATEGORY	SUB-CATEGORIES	SCORE %			
		Excellent	Good	Satisfactory	Need improvement
KNOWLEDGE	Life styles	70	10	5	5
	Food in general	30	40	20	10
	Chemistry food properties	35	20	25	15
WRITING ABILITIES	Vocabulary	30	20	30	20
	Punctuation	20	35	35	10
	Connectors	15	20	35	30
	Paragraphs content	60	30	10	0
	Paragraphs organization	45	35	20	0

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BIODATA

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