

USING AN PERIODIC TABLE MULTIMEDIA IN ORDER TO SIMPLIFY A NEW UNIVERSAL LANGUAGE, THE CHEMICAL LANGUAGE.

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There is a little bit analogy between chemistry and foreign languages. Most languages have different alphabets for each one. In order to learn a second language, one needs to know the new symbols.

In chemical language, it is necessary to learn more than 103 symbols, the chemical alphabet. After knowing the alphabet, the students are ready to begin the formation of chemical words. In this case, learning the compounds names is easier when only two elements are involved, but when there are more than two, the chemical language is more complex.

After a few classes of chemistry, the students are ready to attempt intelligent conversation by combining the chemical alphabet words into sentences, the reactions. When students know the chemical alphabet, some elements properties and after all, students can combine these words into meaningful sentences. They can translate between Spanish and Chemistry.

As a foreign language, chemistry demand hard work in the form of many hours of repetitions examples and problems, but why not easy the burden by beginning at the beginning using the chemical alphabet to teach students how to speak the language.

Chemical education researches have recognized that students often have difficulty learning chemistry concepts, language and so on. Researchers have proposed several suggestions as to the reasons for this difficulty, including frequent overloading of student working memory [1-3]. As a student, I was used to learning with a typical text book, but nowadays as an instructor, I would like to teach with new method, which would improve the students' motivation. One of the major goals in teaching chemical language with a contextual approach is that students will develop the ability to understand a make decision about issued they may face in their everyday lives outside of the classroom [4,5]. Teachers must better prepare students for the modern world teaching with a modern approach. In this work, we report a study that employed computer simulations.

The proposal of this study is intended to design and implement a teaching strategy for teaching and learning the chemical language, first of all the chemical alphabet, the Periodic Table and then, the language which it is built the chemistry. For this proposal we will use some multimedia application (Information and Communication Technologies (TIC)), which consists in a interactive periodic table. Student will be able to push one element and they will be able to see the properties of this element and which other element will be able to combine with it, and furthermore, if this element will be able to combine with itself. Whenn they know properly the simple language, they will be able to continue studying more complex words, in this case, the reactions. With this multimedia application, the students will be able to watch how the atoms will change, one atom changes to a new atom during a whole reaction. And finally, they will be able to watch how these new atoms have new properties, and they combine each one.

[1] Carlson, R., Chandler, P., Sweller, J., *J. Educ. Psych.*, 95, (2003) p. 629.

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[3]. Johnstone, A. H., *J. Chem. Educ.*, 87, (2010) pp 22.

[4] King, D. 2007. Teacher beliefs and constraints in implementing a context-based approach in chemistry. *Teaching Science- the Journal of the austalian Scinece teacher association*, 53 (1), 14.

[5] King, D., Bellocchi, A., and Ritchie, S.M. 2008. Making connections: learning and teaching chemistry in context. *Research in Science Education*, 38(3) 365.