

Reading and comprehension of scientific writing

[Science](#), [Chemistry](#)



Comprehending Texts of Chemical Bonding The topic of Chemical Bonding is taught at school for to understand the basic concepts of Chemistry. Chemical Bonding is considered as an abstract topic since the understanding of which requires diagrams and figures of the molecular activities to show the various reactions that occur during chemical bonding. The two modules “ Evaluating Student’s Understanding of Chemical Bonding” by Tan and Treagust, and “ Chemical Bonding” by Thompson and Staley both discuss the topic in different approaches resulting to different levels of response from readers and students.

The module “ Evaluating Student’s Understanding of Chemical Bonding” by Tan and Teagrust (1999) is a study that evaluates the understanding of students about the topic Chemical Bonding. The results of the study became a tool for better approach that can be used in the academe to help students understand the topic easily. The main purpose of the context is already given on the title. There are subtitles that reveal the various topics that provide better analysis of the context. Based on the subtitles, it can be seen that the paper is all about the understanding of the topic Chemical Bonding for students learning such as the definition of the problem of the students, the diagnosing treatment and instrument, results of their diagnosis, and lastly the conclusion.

The paper “ Evaluating Student’s Understanding of Chemical Bonding” is a paper that evaluates student’s learning capacity through the use of a “ two-tier multiple choice diagnostic instrument”. Accordingly, students encounter problems in understanding the concept. The diagnostic assessment provides an alternative way of teaching student 14-16 years about the topic. As a

result, the assessment instrument proves to be an easy to administer tool where students can learn the topic better and easier. The tool uses alternative conception that is summarized in the given Figure (figure 1: The Concept of Chemical Bonding). The Figure serves as a concept map showing the concepts included and their interconnections with each other. It provides better understanding of the topic through the given diagram. Every topic included in the Chemical Bonding context is interconnected with other topic where their relationship was shown through the lines.

Figure 1. Chemical Bonding Concept

The second article “ Chemical Bonding” by Thompson and Staley (nd) is a comprehensive paper about the topic chemical bonding. The paper is filled with diagrams for the better understanding of the topic. The subject matter is subdivided into groups for the better definition of the topic. The paper emphasizes more on the actual chemical reaction that happen in chemical bonding through presentation of the concept in diagrams. There are captions underneath the diagrams to support and explain what the diagrams are all about. Furthermore, the topic about Chemical Bonding is divided chronologically and arranged from the most basic topic, such as the electronegativity, increasing the level of complexity of the topic such as the road map (figure 2) of the chemical bonding, to the specific bonding behaviors of each type.

Figure 2. Road map of Chemical Bonding

The figure shown above is the road map for the chemical bonding. This diagram presents the various types of chemical bonding and the constituents for every type of bond. It also shows the location of the chemical involved in

the periodic table for better understanding of the behaviors of chemicals through groups.

The two papers about “ Chemical Bonding” are both helpful papers for the better understanding of the topic. The limitation of the first paper through the given diagram is that the assessment is given to Singaporean class.

There is bias in this manner such that more research assessment is required to quantify that the alternative assessment instrument presented works for all the students worldwide. Furthermore, the context is studied for the high school students where only the basics of the concept are included. How about the college students who knew the basic concepts but need them for review and increase of learning about the concept? These are just one of the biases that this paper pose. On the other hand, the second paper presents the topic in chronological manner giving the basic topic increasing the level of the complexity of the understanding of the subject. The presentation given in the second paper is more generic where there are no biases. The paper can be used for all people who want to understand the topic and get the basics of the topic in an easier way. The use of the various diagrams in the second paper is very helpful in the step by step learning of the various behaviors of elements during their bonding processes. The figure (figure 1) in the first paper presents a complex road map of the concept showing all the interrelated topics at one view. The second figure (Figure 2) is a simplified diagram showing only one aspect of the whole context of the topic.

References:

Tan, KD., and Treast, D. (1999). “ Evaluating Student’s Understanding of

Chemical Bonding". School Science review. 81(294).

Thompson, S. and Staley, J. (nd). " Chemical Bonding". Postsecondary Education (FIPSE): USA