Chemistry and Biology Terminology and Modern Methods of its Teaching

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ABSTRACT

This article analyzes the terminology of natural sciences for students majoring in armachetics and biology, chemistry, which is currently emerging in each field due to the demand for foreign languages in their field, and offers suggestions for problems in teaching.

Keywords: Absolute zero, actual yield, chemistry, biology, pharmaceuticals and medicine

Terminology is a general word for the group of specialized words or meanings relating to a particular field, and also the study of such terms and their use.[1] This is also known as terminology science. Terms are words and compound words or multi-word expressions that in specific contexts are given specific meanings—these may deviate from the meanings the same words have in other contexts and in everyday language.[2] Terminology is a discipline that studies, among other things, the development of such terms and their interrelationships within a specialized domain. Terminology differs from lexicography, as it involves the study of concepts, conceptual systems and their labels (*terms*), whereas lexicography studies words and their meanings. Terminology is a discipline that systematically studies the "labelling or designating of concepts" particular to one or more subject fields or domains of human activity. It does this through the research and analysis of terms in context for the purpose of documenting and promoting consistent usage. Terminology can be limited to one or more languages (for example, "multilingual terminology" and "bilingual terminology"), or may have an interdisciplinarity focus on the use of terms in different fields.

Terminology science is a branch of linguistics studying special vocabulary.

The main objects of terminological studies are special lexical units (or special lexemes), first of all terms. They are analysed from the point of view of their origin, formal structure, their meanings and also functional features. Terms are used to denote concepts, therefore terminology science also concerns itself with the formation and development of concepts, as well as with the principles of exposing the existing relations between concepts and classifying concepts; also, with the principles of defining concepts and appraising the existing definitions. Considering the fact that characteristics and functioning of term depend heavily on its lexical surrounding nowadays it is common to view as the main object of terminology science not separate terms, but rather the whole terminology used in some particular field of knowledge (also called subject field).

It is important to note from the findings that in the field of chemistry and biology, pharmaceutics in the field of pharmacy and medicine use terms that are pronounced clearly and in English, and these are as follows:

absolute zero - Absolute zero is 0K. It is the lowest possible temperature. Theoretically, at absolute zero, atoms stop moving.

accuracy - Accuracy is a measure of how close a measured value is to its true value. For example, if an object is exactly a meter long and you measure it as 1.1 meters long, that is more accurate than if you measured it at 1.5 meters long.

acid - There are several ways to define an acid, but they include any chemical that gives off protons or H^+ in water. Acids have a pH less than 7. They turn the pH indicator phenolphthalein colorless and turn litmus paper red.

acid anhydride - An acid anhydride is an oxide that forms an acid when it is reacted with water. For example, when SO_3^- is added to water, it becomes sulfuric acid, H_2SO_4.

actual yield - The actual yield is the amount of product you actually obtain from a chemical reaction, as in the amount you can measure or weigh as opposed to a calculated value.

addition reaction - An addition reaction is a chemical reaction in which atoms add to a carbon-carbon multiple bond.

alcohol - An alcohol is any organic molecule that has an -OH group.

aldehyde - An aldehyde is any organic molecule that has a -COH group.

denature - There are two common meanings for this in chemistry. First, it can refer to any process used to make ethanol unfit for consumption (denatured alcohol). Second, denaturing can mean breaking down the three-dimensional structure of a molecule, such as a protein is denatured when exposed to heat.

diffusion - Diffusion is the movement of particles from an area of higher concentration to one of lower concentration.

dilution - Dilution is when a solvent is added to a solution, making it less concentrated.

dissociation - Dissociation is when a chemical reaction breaks a compound into two or more parts. For example, NaCl dissociates into Na^+ and Cl^- in water.

double displacement reaction - A double displacement or double replacement reaction is when cations of two compounds switch places.

effusion - Effusion is when a gas moves through an opening into a low-pressure container (e.g., is drawn by a vacuum). Effusion occurs more quickly than diffusion because additional molecules aren't in the way.

electrolysis - Electrolysis is using electricity to break the bonds in a compound to break it apart.

electrolyte - An electrolyte is an ionic compound that dissolves in water to produce ions, which can conduct electricity. Strong electrolytes completely dissociate in water, while weak electrolytes only partially dissociate or break apart in water.

There are special methods for studying these terms, which make it easier for students to learnIn the original vocabulary field trip, the teacher begins with a large poster of a topic, such as weather. Students are seated on the carpet, and the teacher leads a field trip that includes having students observe and record what they saw as they read books and other materials. As students volunteer weather words, the teacher records them on sticky notes or tag board and puts them up beside the poster. After the observations are concluded, the teacher returns the students' attention to the words, repeating them and linking them to the poster. Next, students sort the weather words into conceptually related groups and engage in other semantic activities. Teachers can create a digital version of a vocabulary field trip using a free online program called TrackStar . Like the popular WebQuest (Dodge, 1995), TrackStar allows you to collect a series of websites and annotate them so that students follow the online journey. On the left side of the figure you can see the questions and multiple websites that we selected to guide students in finding out about weather in Alaska, where the Iditarod takes place. We selected a context where weather is extreme to heighten students' interest and to provide a dramatic contrast to their own local weather. We begin with a website featuring

photos and video of dogsledding in Alaska and asked students to respond with descriptions of the weather conditions.

Next, students visit a website on the aurora borealis and look for connections between the aurora and Alaskan weather. They complete the virtual field trip with a visit to a website on weather comparisons, where they examine the differences between local weather and Alaskan weather. Throughout this process, they visit several teacher-selected websites and gain knowledge about words through multiple exposures in different contexts and through different media, including reading, viewing, writing, and conversation.

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