

Effectiveness of Mnemonics Technique for Happiness Teaching-Learning in Higher Secondary School

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Abstract

The periodic table shows all the elements and their physical properties; it is arranged based on atomic numbers and electron configurations. The arrangement of the periodic table leads us to visualize certain trends among the atoms. The vertical columns (groups) of the periodic table are arranged such that all its elements have the same number of valence electrons. All elements within a certain group thus share similar properties. Anyone cannot understand what they read without mastering periodic table of elements. The elements of the periodic table can be easily memorized through Mnemonics Technique

A mnemonic is a tool that helps us remember certain facts or large amounts of information. They can come in the form of a song, rhyme, acronym, image, phrase, or sentence. Mnemonics help us remember facts and are particularly useful when the order of things is important. This method of teaching and reinforcement of information helps students to commit new information to memory and continue to use this material throughout their lives. Using mnemonics is a lessons way to teach and make the classroom a unique learning environment.

Key Terms: Mnemonics, Happiness Teaching-Learning

Introduction:

The periodic table is one of the most important tools in the history of chemistry. It describes the atomic properties of every known chemical element in a concise format, including the atomic number, atomic mass and relationships between the elements. Elements with similar chemical properties are arranged in columns in the periodic table. Memorizing the periodic table is important because it is organized and gives a lot of information about elements. Also, it makes students understand how elements relate to one another. The elements of the periodic table can



be easily memorized through Mnemonics Technique. A mnemonic is a tool that helps us remember certain facts or large amounts of information. They can come in the form of a song, rhyme, acronym, image, phrase, or sentence. Mnemonics help us remember facts and are particularly useful when the order of things is important. This method of teaching and reinforcement of information helps students to commit new information to memory and continue to use this material throughout their lives. Using mnemonics is a lessons way to teach and make the classroom a unique learning environment.

Scope:

- The study is related to Chemistry of 11th grade
- The study is related to Mnemonics Technique.

Limitations:

- The study is conducted at 11th grade students of Sinhgad College of Science, Ambegaon.
- The study is limited to Mnemonics Techniques the treatment.

Objectives:

1. To implement mnemonics technique to memorize Periodic table of elements at 11th Grade Students of Sinhgad College of Science, Ambegaon.
2. To measure how far is the improvement in memorization of periodic table at 11th Grade Students of Sinhgad College of Science, Ambegaon.

Methodology: In this research, the researcher uses classroom action research. This research was done in two cycles to overcome all students' problem in learning periodic table of elements.



There is 2 meeting in each cycle. In each cycle divided into three activities. The first activity is pre-test which conducting before explaining the materials. The second activities are explaining the materials. The third activities are post-test.

Each cycle consists of four steps, they are planning the action, acting, observing and reflecting the result of the observation. The teacher applied the steps in the class based on lesson plan. The research was designed as follow:

Cycle :

1) Planning the action

There are some preparations that prepared by the researcher related to the action as follows:

- a) Preparing the materials.
- b) Preparing lesson plan and designing the steps in doing the action.
- c) Preparing list of students' name and scoring.
- d) Preparing sheets for classroom observation. It will be prepared to know the situation of teaching-learning process when the technique will be applied
- e) Preparing teaching-aids.
- f) Preparing test.

2) Acting

The researcher implemented the teaching learning activity of Periodic Table of Elements using mnemonics technique based on the lesson plan.

3) Observing the action

Observation is one of the instruments used in collecting the data. The researcher observed the students' activities while teaching and learning process occur.



4) Reflecting the result of the observation

The researcher made an evaluation. The test is in the form of multiple choice tests. In this test, the students asked to answer the questions in the form of objective option.

Based on the weaknesses of the activities that carried out using mnemonics technique in teaching vocabulary, the researcher revises the plan for the next cycle.

Data Collecting Technique:

In this classroom action research, the researcher uses qualitative and quantitative approach in collecting the data. Qualitative approach included observation. The data was in the form of words taken form the result of observation. Quantitative approach included written test which also as an instrument in this research, covered pre-test and post-test. The data was in the form of numbers taken from the tests that conducted before and after the cycles done.

Data Analysis Technique:

The researcher compared the student's achievement in the pre- test and post-test to know whether there is improvement of students' memorization of periodic table of elements. Mean, S.D, t Test, Observational Checklist for cycle I & II is used as data analysis technique

| Sr. No | Analysis | Cycle I | Cycle II |
|--------|--------------------------------|---------------|----------------|
| 1 | Mean Pre- test Post-test | 60.56 60.9 | 64.62 83.21 |
| 2 | N=32 | 2.04 | 2.04 |
| 3 | t | 7.10 | 9.38 |



From the table above, we know that the mean of post-test 69.09 is higher than pre-test 60.56 in cycle I. the mean of post-test 83.21 is higher than pre-test 64.62 in cycle II. The table above also shows T-calculation in cycle I and cycle II, which is 7.10 in cycle I and 9.38 in cycle II. It concluded that mnemonics technique can increase student's memorization of periodic table significantly.

Observational Checklist of Cycle I

| Sr.No | Statement | Yes | No |
|-------|--|-----|----|
| 1 | Teacher prepared the material well | ✓ | |
| 2 | The teacher explains about recount text | ✓ | |
| 3 | Teacher can be conditioned classroom | ✓ | |
| 4 | Teacher use time effectively | | ✓ |
| 5 | Teacher being friendly to the students | ✓ | |
| 6 | Teacher able to use the media well | ✓ | |
| 7 | Teacher provide an evaluation after lesson | ✓ | |
| 8 | Teacher asks students difficulties | ✓ | |
| 9 | Students pay attention to the strategy | ✓ | |
| 10 | Students pay attention the teacher's explanation | | ✓ |
| 11 | Students understand the teacher's explanation | | ✓ |
| 12 | Students become more active during | ✓ | |

By analyzing the result of cycle I, the researcher found that the students excited with new thing in learning of periodic table of elements, especially in memorizing Periodic Table. So, the teacher must have interesting ways in teaching and learning process. The passing grade was 70. The target of the passing grade was 85%, but only 59% from the students could reach the target. Therefore, the researcher would conduct the cycle II to achieve the target of the passing grade.



Observational Checklist of Cycle II

| Sr.No | Statement | Yes | No |
|-------|--|-----|----|
| 1 | Teacher prepared the material well | ✓ | |
| 2 | The teacher explains about recount text | ✓ | |
| 3 | Teacher can be conditioned classroom | ✓ | |
| 4 | Teacher use time effectively | ✓ | |
| 5 | Teacher being friendly to the students | ✓ | |
| 6 | Teacher able to use the media well | ✓ | |
| 7 | Teacher provide an evaluation after lesson | ✓ | |
| 8 | Teacher asks students difficulties | ✓ | |
| 9 | Students pay attention to the strategy | ✓ | |
| 10 | Students pay attention the teacher's explanation | ✓ | |
| 11 | Students understand the teacher's explanation | | ✓ |
| 12 | Students become more active during | | ✓ |

By observing teaching and learning process during cycle I until cycle II, the researcher found that mnemonics technique was very helpful for the students who have difficulties in remembering periodic table of elements. Mnemonics technique can motivate the students to be more active and creative because it was based on their imagination. The passing grade was 70, and the target was 85%. 93% of the students could pass the passing grade. Therefore, the students achieved the target of the passing grade, so the researcher stopped the research until cycle II.

Conclusion:

Based on the data described previously, it can be concluded that using mnemonics technique can increase students' memorization of periodic table of elements. There were several improvements reached by the students, not only on their academic score, but also on their behavior to the lesson. Dealing with the score that the students got, there was a significant improvement. The use of mnemonics technique can increase the students' achievement in learning Periodic table of elements.



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