To study the effect of construction concept maps on gender

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Abstract

The purpose of this research paper was to determine the effect of construction concept maps on gender for effective Learning process accordance on the achievement of 9th grade Students in science and technology. The result of this study indicates that the mean of experimental group of boys were positive than experimental group of girls. Concept mapping helps students for summarising their knowledge as well as to create linkage between two concepts. Girls are so active while constructing concept maps. Girls and boys are having different attitude regarding construction of maps.

KEYWORDS: effect, construction, concept map, gender.

Introduction

The main focus of formal education is to promote learning for the purpose of improve learning there has always been a search of various ways of instruction. Concept maps are one such important strategy that evolved as a useful to in leading students towards meaningful learning for the sake of study. When we considered about gender then we observed that girls are very sincere or punctuate in their work. If we are gone through the present classroom in a class near about 80 to 90 students are there. It is impossible to a teacher to pay attention towards each and every student. So teacher must have adopted some strategy to engaged students in learning process. Concept mapping is that strategy.

Importance of Research:

Here, we’ll try to understand how to use concept map in teaching science subject to 9th std. Students studying in Marathi medium school. IF we see the present situation of class room, in one class near about 80 to 90 students are there .It is impossible to the teacher to pay attention towards each and every student personally. As well as a teacher is having only 35 minutes time in a period at that time .Within that time they are managing their teaching learning process. Side by this they are doing necessary work in the same time .we are always worry about the things which we don’t have ,but we are not thinking about that we have. Once when the children entered in a class then it is duty of teacher to fell students happy in a classroom. For that he/she must keep students engaged them in regular activity. Teaching by lecture method is making students inactive .So concept mapping is a technique which making students active as well as happy in a classroom. For that first let’s try to understand what concept map is.
Meaning of concept map:

Concept map is a diagrammatic representation, which shows meaningful relationships between concepts in the form of propositions that are linked together by words, circles and crosslink’s.

Concept mapping is a method used to visualize the structure of knowledge. Since the knowledge expressed in the maps is mostly semantic, concept maps are sometimes called semantic networks.

In present study the researcher wants to improve the teaching learning process by using concept mapping because science has contributed to bringing about changes in our ways of thinking, attitude interest and outlook. Hence, the Science Education imparted in our school plays a vital role.

Concept map is a very useful technique of integrated science teaching and for student to discovering their knowledge. It also helps them for creative thinking. Findings from these studies indicate that concept mapping is an effective tool for teaching process.

Objective:

1. To analyses the concept maps of the students.
2. To study the effect a concept Map of Science subject gender wise (male, female)

Assumptions:

1. Students have different styles of learning.
2. Every student has previous knowledge (about things).
3. Every student builds his own knowledge based on his previous knowledge

Hypothesis

1. There is no difference between concept maps of the students.
2. There is no difference between mean of achievement test of boys and girls from urban and rural area.

Research design

The focus of this research study was to determine the effects of using concept mapping for student’s achievement of class 9th only. Posttestsingle group design was used. There was only one group that is experimental group.

Sample

A sample of 80 students was selected. By purposive sampling method. Sampling taken from randomly selected school. Semi English medium (Mahatma Phule High school Nanded urban area and Sant gadge Maharaj high school Loha Nanded).

Tools

Achievement test was used for present study as well as observations done by researcher during experiment.
Analysis and interpretation of data
In the present study the researcher has analyzed the data using the statistical methods. Mean, Variances, and t-test. The researcher collected the data on variables. The data collected was analyzed and interpreted. The researcher explains the importance and need of analysis and interpretation of the data. The collected data is systematically organized and analyzed. Then interpreted using proper appropriate statistical methods. Following order in which the various hypothesis of the study have been formulated.

Findings:

For Objective 1:-
To analyses the concept maps of the students
- There is difference between concept map of boys and girls.
- Mostly girls are having maps in design form ex (rangoli, painting).
- Boys were constructed their maps in hierarchical manner.
- Boys took more time for construction than girls.
- Girls were used more linkage than boys.
- Boys were not so serious while construction beside girls was so serious during construction.
- In girls map very minute concepts are included that are not seen in boys maps
- Girls taking more time rather than boys
- Neatness observed in girls map.
- Girls made dictation while construction maps.

Objective 2:-
2. To study the effect a concept Map of Science subject gender wise (male, female)

For the purpose of further study mean variances and t-value given in table of Comparisons between mean of experimental group boys and girls

Table 1:-mean of boys and girls concept map and difference of Variances

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable 1(girls)</th>
<th>Variable 2(boys)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>37.57142857</td>
<td>35.03846154</td>
</tr>
<tr>
<td>Variance</td>
<td>2.417582418</td>
<td>15.63846154</td>
</tr>
<tr>
<td>Observations</td>
<td>14</td>
<td>26</td>
</tr>
<tr>
<td>Hypothesized Difference</td>
<td>Mean</td>
<td>0</td>
</tr>
<tr>
<td>df</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>t Stat</td>
<td>2.878810791</td>
<td></td>
</tr>
<tr>
<td>P(T&lt;=t) one-tail</td>
<td>0.003339044</td>
<td></td>
</tr>
</tbody>
</table>
From table 1:-
: - given above table shows the mean scores experimental group’s girl was 37.57 whereas boys was 35.08. The obtain t-value was 2.87 which is greater than the required table value that is 2.42 and therefore the mean difference between the two unequal groups was found to be significant. At df 36 t-value is more thus the null hypothesis rejected.

From table 1:-
: - given above table shows the variances scores experimental group’s girl was 2.41 whereas same group’s boys was 15.63. There is more distribution of score from mean of experimental group’s boys (15.63) whereas less distribution of score from mean of experimental group’s girls (2.41). More value of variances observed in boys because of training of construction of concept maps. Boys are variation of thinking than girls.
Table 2:-Mean, variance, and t-test of experimental group's girls and boys from rural area

<table>
<thead>
<tr>
<th></th>
<th>Variable 1(girls)</th>
<th>Variable 2(boys)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>32.53333333</td>
<td>36</td>
</tr>
<tr>
<td>Variance</td>
<td>9.695238095</td>
<td>4.416666667</td>
</tr>
<tr>
<td>Observations</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>Hypothesized Mean Difference</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>df</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t Stat</td>
<td>-3.821272236</td>
<td></td>
</tr>
<tr>
<td>P(T&lt;=t) two-tail</td>
<td>0.000931714</td>
<td></td>
</tr>
<tr>
<td>t Critical two-tail</td>
<td>2.073873068</td>
<td></td>
</tr>
</tbody>
</table>

Table 2:- given above table shows the mean scores experimental group’s girl was 32.53 whereas boys was 36 from rural area. The obtain t-value was -3.821 which is very smaller than the required table value that is 2.42 and therefore the mean difference between the two unequal group was found to be insignificant. At df 22. t-value is less than table value so the null hypothesis accepted.
Table 2:- given above table shows the variances scores experimental group’s girl was 9.69 whereas same group’s boys were 4.41. There is more distribution of score from mean of experimental group’s girls (9.69) whereas less distribution of score from mean of experimental group’s boys (4.41). More value of variances observed in girls because of training of construction of concept maps. Girls are variation of thinking than boys.

Conclusion:-
There is no significance difference among the experimental group of boys and girls group at 0.01 significance level. The mean of girls group was 37.57 and the mean of boys group was 35.03. variances of girls group is 2.41 and boys group is 15.63 which is more scattered than girls group.t-value is0.0033 which is very less than table value .so acceptance of null hypothesis and rejection of research hypothesis .If we study variance then we find that female variance value is 2.41 and male variance value is 15.63 which is so scared than the female variance value.

References:

1) Ausuble,D.P (1968), Educational psychology: cognitive view new yark 
3) NCERT (2005), National Curriculum Framework. 
4) Novak, J.D. (1990 concept mapping: useful tool for science education, journal of research in science teaching 1990 )
6) Sangita Sultania, Times of India. 