The Effect of Using Concept Maps Strategy on the Maintenance Level in Kinetic Education for Grade One Female Students in Faculty of Physical Education for Girls in Elgezira

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Abstract: This research aims to identify the effect of using concept maps strategy on the level of maintenance in kinetic education (content of theoretical article) and the level of practice performance of the basic psychomotor skills (practical applied content of the subject) for female students of first grade, as well as to identify the trend of the experimental group students towards the use of concept maps strategy in teaching kinetic education for them, that was applied on a sample of 94 students divided into two groups, control group of (49) Student and the experimental group of 45 student. For collecting data, the researcher used the experimental method and used the cognitive maintaining test, reviewing practical performance form and questionnaire to identify the experimental group student's trends towards concept maps strategy.

The results indicated the following:

C There are significant differences between the two sets of the research (experimental and control groups) in the post-application for each of maintenance cognitive test and reviewing practical performance form in favor of the experimental group.
C Increasing the percentage of the student's responses of the experimental group towards the use of concept maps strategy concerning teaching them.

Key words: Concept maps %Kinetic education %Maintenance of education

INTRODUCTION

Concept maps strategy is one of the important strategies by which the concepts are arranged on a particular topic hierarchically, so it looks consistent. Using these strategies leads to achieve the derived learning based on the theory of Oozbil; it helps to learn best if used properly and to determine its purpose and clearing it in the minds of students in order to lead to a positive participation in the acquisition of experiences, developing abilities and modifying behavior [1].

These theories are working on the organization of educational themes by linking the concepts that are learned by incorporeal links between the pre-existing and new knowledge as well as help assess the students by allowing them conducting a map of concepts at the end of the lesson or the educational unit and to compare between them and the first understanding of the theme [2].

The concept maps are considered as an effective tool in helping students to link theoretical topics to be applied in the practical lectures and clarification of those concepts in their structure of knowledge and showing the knowledge and maintenance advancement during the study and retain knowledge which not to be forgotten by presenting it in a visual form of liner [3].

The concept maps help students to remember pictures and they are considered as one of the methods in learning and rapidly remembering, moreover they are a good way of learning as they enable students to acquire, retain and apply information in other similar situations [4].

And as the teaching process of the kinetic education theme is not conducted as a comprehensive plan for the content and the relations between parts of the content may be missing, with no consistency between the operated plan and what is actually applied, therefore reflected on the students understanding of the content.
objectives in general and relations between kinetic education theme content in particular. So, the evaluation of the student's level is not real.

That encourage the researcher to think of using concept maps in teaching, which depends on transmuting and keeping the effect of learning, meaning that whatever learned in an earlier educational situation by the individual will facilitate his learning in new educational situations, especially if there were common elements or similarities between the previous educational situations and recent educational situations [5].

As inventory of previous studies that used the concept maps strategy, the researcher found that many of them address other educational sciences which also noted that concept maps strategy studies in the field of physical education are limited and particularly rare in the theoretical topics and linking them to the applied side, prompting the researcher to use concept maps strategy onto the kinetic education theme to identify the effect of using this strategy on the level of maintenance (content of the theoretical theme - applied content) to grade one students, in the Faculty of Physical Education for Girls.

**MATERIALS AND METHODS**

The researcher used the experimental method as it suits nature of the study by using the experimental design of two groups, one is an experimental and the other a control group using post measurements of the two groups. The research was applied on a sample of 94 of first year college students whom were divided to two groups, 49 students for the control group and 45 students for the experimental group. Data were collected using the following tools:

The cognitive maintenance test of the assigned curriculum (taught using the concept maps strategy for the students of the experimental group and the traditional method for the students of the control group) was prepared for kinetic education theme in its both parts the theoretical and application for grade one girls. The key dimensions were calculated (Theme topics) to determine the statements of each dimension and present them to the experts to determine the relative importance of these dimensions and to determine the test questions taking into account that the test includes the levels of learning.

A formulation of the test parts has been prepared determining the time of answering the test questions (45 minutes) that consisted of five questions containing 40 statements, where the fifth question represents a model of concepts map to be answered. The test was standardized by applying it on 20 students as a pilot sample outside the sample of the research to calculate the test scientific coefficients using the following equations:

- Difficulty and easiness factors of statements, which ranged between 0.30-0.70.
- Coefficient of excellence, which ranged between 0.38-0.63.
- Coefficient correlation between the degree of each of the test dimensions and the total score for the test that ranged between 0.615 -0.775, all were statistically significant for the test validity.
- Alpha coefficient of test dimensions, which ranged between 0.674 -0.852 indicated that the maintenance test achieved high degree of stability.
- Preparing the practical performance reviewing card of the basic psychomotor skills that consists of 18 statements, to identify the effect of using concept maps strategy on improving the performance level for grade one girls in teaching the basic motor skills. The card has been formulated in a procedural feature that reflects the performance and determines the card instructions and the degrees quantification and adjustment of the card. Statements achieved less than 70% of the experts’ opinions was excluded.
- A questionnaire has been prepared to measure the experimental group student's (45 students) trends to identify their attitudes towards using concept maps strategy in teaching kinetic education theme for first grade students, the questionnaire included 10 statements.

**Procedure and Measurements Instruments:** The proposed education program was prepared using the concepts maps strategy by following the building maps steps as follows:

- Selecting the topics to be the work of the map.
- Analyzing the content of kinetic education theme to determine the main and sub concepts in each educational unit and the relationships between these concepts where each unit was identified through its objectives, content and setting time assigned for teaching each unit and the number of lectures.
- Preparing a general concepts map including the theoretical and applied content for kinetic education theme where educational sub-units' maps will be branched that will include essential cover of each educational unit including a map of educational unit topic's content vocabularies in each of the theoretical and practical content.
Constructing concept maps for each lecture according to the followed fundamentals when building these maps to clarify the main concept at the top of the map then the more generality and comprehensive concepts, then the less generality and comprehensive concepts and the more specific concepts in next levels along with putting the necessary associated arrows and words till the map ends with examples, 85 maps have been prepared to explain the content of kinetic education theme divided to 49 maps of the theoretical content and 36 of the applied content (practical). A linkage was created between the theoretical and applied content in the topics of "aspects and dimensions of movement and basic motor skills education program".

Maps were presented to a group of professional arbitrators in the curriculum and teaching methods. Teaching for the two groups has taken 11 lectures of the theoretical theme inside the classroom and 10 lectures of the practical theme (Applied) within the teaching methods field for each of the two groups as Two lectures per week (one theoretical and one applied lecture), that means teaching process took 21 lectures in the period from 4/10/2009 to 13/12/2009.

Statistical Analysis: Statistical analysis has been made by using arithmetic mean and standard deviation to calculate the significant differences between the two research sets (the experimental and control) in all dimensions of the post cognitive maintaining test and the form of reviewing practical performance, coefficient of excellence and coefficient correlation to calculate the test validity and calculation of the test stability using the coefficient of alpha Cronbach.

Table 1: Significant difference between the two research sets the experimental and control groups in the dimensions of the cognitive maintaining test

<table>
<thead>
<tr>
<th>No.</th>
<th>Dimensions</th>
<th>Experimental group N=45</th>
<th>Control group N=49</th>
<th>T value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The concept of kinetic education</td>
<td>5.711</td>
<td>0.661</td>
<td>3.617</td>
</tr>
<tr>
<td>2</td>
<td>Motor development</td>
<td>5.700</td>
<td>0.573</td>
<td>3.551</td>
</tr>
<tr>
<td>3</td>
<td>Motor learning</td>
<td>5.100</td>
<td>0.653</td>
<td>3.346</td>
</tr>
<tr>
<td>4</td>
<td>kinetic education contributions in learning other educational sciences</td>
<td>1.583</td>
<td>0.328</td>
<td>1.076</td>
</tr>
<tr>
<td>5</td>
<td>Evaluation</td>
<td>3.711</td>
<td>0.432</td>
<td>1.857</td>
</tr>
<tr>
<td>6</td>
<td>Aspects and dimensions of movement</td>
<td>8.355</td>
<td>0.853</td>
<td>4.418</td>
</tr>
<tr>
<td>7</td>
<td>Basic motor skills learning program</td>
<td>8.450</td>
<td>1.366</td>
<td>4.061</td>
</tr>
</tbody>
</table>

*T* Indexed value at (0.05) = 2.000

RESULTS AND DISCUSSION

The cognitive maintaining test - reviewing practical performance form - questionnaire was prepared to identify the experimental group student's trends towards concept maps strategy.

The results were presented in 3 Tables, where the results in Table (1) and Figure (1) indicate the significant differences between the two research sets of experimental and control groups in the dimensions of the cognitive maintaining test that the value of calculated "T" statistically significant at the level of 0.05 between the two research sets (experimental and control groups) in all dimensions of the cognitive maintaining test in favor of the experimental group.

Table (1) clarifies that there are significant differences between the research's two sets (experimental and control groups) in all dimensions of the post cognitive maintaining test in favor of the experimental group, the surpass of the experimental group students over the control group are due to the concept maps strategy that contributes to increasing the amount of information and knowledge collected by students as a result of sequencing from the public to the private, which led to increased uptake of students to the concepts of the topic being learned whether these concepts increased or decreased and put these concepts in a hierarchical sequence system (the broader concept at the summit, then the next until the least general at the base) and to determine between these concepts of connections and relationships and to put all on a map where students can understand the main concepts and inter-relationships in the content that is being studied, leading to the collection of the assigned part taught in each lecture [6].
The concept of kinetic education

Motor development

Motor learning

Contributions in learning other educational sciences

Evaluation

Aspects and Basic motor skills learning program

Table 2: The significant difference between the two researches sets (the experimental and control groups) in the reviewing card

<table>
<thead>
<tr>
<th>No.</th>
<th>Reviewing Card</th>
<th>A</th>
<th>S</th>
<th>A</th>
<th>S</th>
<th>T value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reviewing Card</td>
<td>73.888</td>
<td>4.633</td>
<td>48.346</td>
<td>5.24</td>
<td>24.92</td>
</tr>
</tbody>
</table>

"T" Indexed value at (0.05) = 2.000

Moreover, the researcher returns the surpass of the experimental group students on the control group in cognitive maintenance test results to the questions directed to them that contain a lot of information regarding the participation of students in the construction of maps, which help to easily absorb the information and to the speed recovery when answering questions loping the disadvantages of the traditional method of paper and pencil tests.

Table (2) and Figure (2) illustrate that the calculated "T" value is statistically significant at the level of 0.05 between the two research groups (experimental and control) in the reviewing card in favor of the experimental group.

These results are consistent with the findings of Pankratius [7], Jaines [8] and Cañas [9]. Their studies have agreed that the use of concept maps strategy as a teaching method positively affects the level of cognitive maintenance of the educational theme, as it also helps to remember, understand and organize the educational content in a way more meaningful than the used traditional methods.

Moreover, the researcher returns that to the speed of absorption, understanding and applying the information relating to the basic motor skills to be learned as a result of linking each of the theoretical content to the applied content within the concepts map in the field during the show's demonstration that describes the concept maps...
Table 3: Frequencies and percentages for the statements of student's trends towards using the concepts maps strategy form (N=45)

<table>
<thead>
<tr>
<th>No.</th>
<th>Statements</th>
<th>Agree</th>
<th>Do Not Agree</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I prefer learning using the concept maps strategy.</td>
<td>38</td>
<td>7</td>
<td>83</td>
<td>92.2</td>
</tr>
<tr>
<td>2</td>
<td>My achievement increases when learning using concept maps.</td>
<td>40</td>
<td>5</td>
<td>85</td>
<td>94.4</td>
</tr>
<tr>
<td>3</td>
<td>I prefer learning through the followed traditional explanation methods.</td>
<td>39</td>
<td>6</td>
<td>84</td>
<td>93.3</td>
</tr>
<tr>
<td>4</td>
<td>I remember the topics that I receive through concept maps more than the followed methods.</td>
<td>39</td>
<td>6</td>
<td>84</td>
<td>93.3</td>
</tr>
<tr>
<td>5</td>
<td>I assimilate the lessons better when they were formulated using the concept maps strategy.</td>
<td>36</td>
<td>9</td>
<td>81</td>
<td>90.0</td>
</tr>
<tr>
<td>6</td>
<td>I recall the topics of the theoretical content when I put in its assigned map</td>
<td>38</td>
<td>7</td>
<td>83</td>
<td>92.2</td>
</tr>
<tr>
<td>7</td>
<td>Linking the theoretical content to the applied content within the concepts map contributes to the easy assimilation of the assigned curriculum whether within the lecture class or on the pitch.</td>
<td>41</td>
<td>4</td>
<td>86</td>
<td>95.6</td>
</tr>
<tr>
<td>8</td>
<td>Linking between new concepts and information to the previous ones.</td>
<td>40</td>
<td>5</td>
<td>85</td>
<td>94.4</td>
</tr>
<tr>
<td>9</td>
<td>I realize the relationship of the hierarchy organization's of concepts beginning of the general concept in stature to a less general concepts through the concept maps.</td>
<td>36</td>
<td>9</td>
<td>81</td>
<td>90.0</td>
</tr>
<tr>
<td>10</td>
<td>Can be used as a teaching and learning tool in the teaching and learning various situations.</td>
<td>40</td>
<td>5</td>
<td>85</td>
<td>94.4</td>
</tr>
</tbody>
</table>

of each basic skill, as well as through maps, which students are required to build some basic skills similar to these maps provided by the researcher, with consideration to link aspects and dimensions of movement to the basic motor skills, whether within a model of a small game, or a model of motor story or applying a skill using tools.

The researcher returns all of that to characterize of teaching by the concept maps strategy due to the positive and effective participation of the students and provoking their motives to reach out the proper performance of those skills to the level of mastery and proficiency. These results are consistent with the results of Attiya [10] and Shehata [11] which addressed the effectiveness of using concept maps in the physical education lesson with reference to the importance of concept maps in maintaining education especially in the sport activities skills.

Table (3) illustrates the high percentage of the student's responses towards the use of concept maps strategy where it ranged between 90% as the less value of statements numbers 5 and 9 to 95. 6% as the highest value for statement number 7, which indicates the success of concept maps strategy in teaching kinetic education for students of first grade, the researcher returns that to the fact that teaching using concept maps strategy is considered as a thinking and communication method where students interacts during their discussion within the lecture as well as a method to discuss what the students have learned of concepts relevant to the theoretical content of the theme and its application within the practical content, that is due to the concept maps characteristic of interesting and distinct style during the presentation to the students through data show, where presenting the lecture content through a large screen attracted the students attention and increased their passion and motivation towards learning, as the students senses are stimulated thereby increase their concentration which had effective impact in the learning process, also the maps design, which demanded of them led to gain increased self-confidence in the theoretical content and improved performance in the applied side.

This result consistent with the study of Carol and Vierick [12] which illustrated that the concept maps help in identifying the concepts, arrange information and to understand and remember content of the theme, this contributes to increase the student's self-confidence when building concepts map, thus have the power to amend their trends and beliefs about the theme. This is consistent with the result of the current study, in the improvement of percentage of student's responses toward the use of concept maps strategy in teaching.

CONCLUSIONS AND PRACTICAL APPLICATION

As cleared through the objectives of the research and in the framework of the used method, within the research sample, as well as statistical analysis and displaying the research results and its discussion, the researcher was able to reach the following conclusions:

There are significant differences between the average scores of the experimental group, which studied using concept maps and the control group, which studied using the traditional method in the post application of the maintenance test in favor of the experimental group.

There are significant differences between the average scores of the experimental group and the control group in the post application of the review practical performance form in favor of the experimental group.

The proposed education program using the concept maps strategy had a positive effect on the level of students in the theoretical aspect and the level of practical performance in the kinetic education theme.
The percentage of response for the students of the experimental group has increased towards the teaching strategy using the concept maps.

REFERENCES