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The effect of concept maps in teaching sportive technique

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Abstract

This study examines the effect of concept maps in teaching sportive technique. In this study, 20 students voluntarily participated as experimental group and 20 as the control group. The subject of sportive technique was told to the experimental group one hour a week, for 6 weeks by using both traditional method and concept maps. As for the control group, the subject of sportive technique was told via traditional method one hour a week, for 6 weeks. Tests of 20 questions was applied as pre-test and post-test to assess sportive technique. In conclusion, using both concept maps and traditional method is more efficient for students' learning.

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Keywords: physical education; concept maps; technique; sport

1. Introduction

The concept map is a method of introducing concepts and the relationship between these concepts graphically. The concept map is a two-dimensional schema introducing the conceptual structuring that belongs to a specific subject and the cognitive connections among the concepts in a visual way (McGowen and Tall 1999, Novak et all 1983). In other words, the concept map is the method of representing the data via graphics to remember it for a longer time and use it more efficiently. The concept maps are graphic means like concept networks. But unlike them, the concept maps include the relations between concepts as propositions or principles. The concept maps make students learn new data by creating integration between the present data of students and new data.

The concept maps enable new data to insert into present data networks and they allow the data to be remembered for a longer time. This is the most important feature of meaningful learning (McGowen and Tall, 1999; Novak et all, 1983).

As an efficient learning technique, the concept map technique has been reported to improve thinking, problem solving, and creative skills of students (e. g. Novak et all, 1983, Ault, 1985). Jegede, Alaiyemola, Okebukola (1990), Briscoe and LaMaster (1991) have found that the concept map technique makes students be aware of their own cognitive levels, detect the topics that they don't know and understand, help learning the content better by

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organizing the data. Moreover, concept maps increase the permanence of data. Trowbridge and Wandersee (1998) have determined that students that design a concept map on their own are more confident in their experience and results because they explore success within an activity.

Consequently, the use of concept map technique in Physical education and sports will be useful in the development of students' creative skills and understanding. It will also help the student to better understand specific topics, as well as to develop problem solving skills. Sportive technique is meant to solve a specific action flow in a purposive and economic way via the experiences generally formed through applications. Technique is important in different degrees for each sports branch. But technique is the basic element and prerequisite to reach the success in sports (Sevim 2002). In struggle sports and sportive games, technique is necessary for solving highly complicated competition problems, as for the endurance sports, technique is necessary in order to behave economically (Balsom, 1994). Therefore, the aim of this study is to examine the effect of concept maps in the teaching of the sportive techniques theory.

2. Material and method

A total of 40 healthy physical education students (mean±SD; age: 23.12±1.82 years) volunteered to participate in this study after having all details explained to them before the investigation. They were divided randomly into 1 of 2 groups: experimental group (n=16) and control group (n=16); The mean (SD) age was 22.65±1.69 years for experimental group; the mean (SD) 23.60±1.93 years for control group. Sportive technique was told to the experimental group via traditional method and concept maps. As for the control group, it was told only via traditional method. The study carried out 6 weeks, one day a week and for one lesson period. Before the research, the students were told the data about concept maps for 2 weeks and supplied with the applications about how the concept maps were formed. Before and after the research, a success test including 20 questions about sportive technique was applied. This study was carried out in accordance with 21/12/2009 dated and 2009/25 meeting numbered ethics committee decision of Selcuk University, Department of Physical education and Sports.

The reliability of the sportive technique success test

Sportive technique success test was applied to 50 people as a pre-application and KR reliability co-efficient of 20 items in the research was calculated 0.791 according to the ITEMAN Item analysis statistics.

3. Statistical Analysis

The SPSS statistical program (version 16.0) was used for data analysis. Standard statistical methods were used for the calculation of means and SD. The Kolmogorov-Smirnov test was used to determine if dependent variables were normally distributed. The Levene test was used to determine if there was homogeneity of variance. Paired t-tests were used to determine significant differences over time for each dependent variable. Unpaired t-tests were used to compare the experimental group and control groups. For all analyses, the criterion for significance was set at an alpha level of $p = 0.05$.

4. Results

The main results are sinthetically presented in tables 1 and 2.