
The effectiveness of a suggested strategy on cognitive maps in modifying the alternative conception of some scientific concepts among elementary school pupils

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The problem of the present study is exemplified in that there are some alternative conceptions of some scientific concepts among elementary school pupils, the thing which is considered an obstacle in learning science .- To face this problem, the present study will attempt to answer the following questions :-1. What are the alternative conceptions of some scientific concepts among elementary school pupils ?2. What is the form of the suggested strategy in modifying the alternative conceptions of some scientific concepts among elementary school pupils ?3. What is the effectiveness of the suggested strategy in modifying the alternative concepts of some scientific concepts among elementary school pupils ?* Aims and significance of the study :-1- Preparing a diagnostic test of alternative conceptions of some scientific concepts, the thing which may be useful for researchers in the field in preparing similar tests .2- Preparing the teacher's guide for illustrating how the suggested strategy can be applied, the thing which science teachers can make use of in modifying conceptions among their pupils .3- Preparing a suggested strategy in modifying the alternative conceptions of some scientific concepts, the thing which those who are responsible for teacher preparation can make use of in implying it in teacher preparation programs .* Limitations of the study :-This study will be limited to the following :-1- Some kinds of cognitive maps which suits the nature of the content and elementary school pupils' level .2- The alternative conceptions related to the concepts of "the structure of the living organism" unit . This unit includes many related concepts which the pilot study emphasized that there are alternative conceptions among pupils in this unit – gist one of the first term units .3- A group of sixth year elementary school pupils, as it is the end of the elementary stage and at the end of this stage, it is necessary to make sure that pupils have correct scientific conception, the thing which is the base of subsequent learning .* Procedures of The study :-The following procedures will be followed :-1) Identifying the alternative conceptions of some scientific concepts among elementary school pupils through :-a- Review of theoretical literature related to alternative conceptions (its definition – nature – modification strategies – diagnosis techniques).(b) Preparing a diagnostic test (Prepared by the researcher) in the concepts of " the structure of the living organism " unit and applying it on a large

group of sixth year elementary school pupils.(c) Preparing a list of alternative conceptions, submitting it to a jury and modifying and setting it in its final form according to their suggestions.(2) Preparing the suggested strategy through:(a) Review of theoretical literature related to cognitive maps (its definition – kinds – characteristics)(b) Identifying the bases and principles upon which this strategy will be built in the light of the theoretical and procedural identification of some kinds of cognitive maps, the nature of the content, learners, maturity level and the nature of alternative conceptions that will be revealed.(c) preparing media, tools and equipments required for doing activities and experiments involved in " the structure of the living organism" unit.(3) Identifying the effectiveness of the suggested strategy in modifying the alternative conceptions of some scientific concepts among elementary school pupils through:-(a) Preparing the teacher's guide for implementing the suggested strategy.(b) Selecting a group of sixth year elementary school pupils, and dividing them into two groups: the experimental group and the control group.(c) Applying the diagnostic test on the two groups before teaching.(d) Teaching to the experimental group using the suggested strategy and to the control group using the regular method.(e) Applying the diagnostic test on the two groups after teaching.(f) Analyzing and interpreting results.(g) Recommendations and suggestions.

Terms of The Study:-(1) Cognitive Maps:Ackerman et. al (1991 : 1) defined cognitive maps as " A net of ideas that have shared connections in an assigned topic".Venable (2000 : 1) defined it as " A technique for connecting aims, strategies, outputs and specific activities".The researcher defined cognitive maps in the present study as " A diagram which represents the cognitive structures in a topic which the teacher builds with students in the light of their previous background and experience, and information or ideas connect with each others with ties and connections. These maps are characterized by their variety and the fewness of limits which hinder their building.