

# **Abstract**

## **The Effect of Teachers' Epistemological Beliefs on Teaching**

This study aimed at describing the epistemological beliefs of biology teachers of tenth grade, and to study the effects of those beliefs on the strategies they use in teaching a genetics unit, the number and the quality of alternative conceptions and on their students' achievement

This study gains its importance from the scarcity of research on epistemological beliefs and their effects on teaching.

The population consisted of biology teachers of tenth grade in Ramallah and Jerusalem, who hold a Bachelor's degree and who have, at least, three years experience in teaching biology. Six teachers were chosen, three of them had constructive beliefs, while the others held empirical beliefs.

Three data collection instruments were used to reveal and describe these beliefs. Those tools were a questionnaire to measure the beliefs, interviews with the teachers, and classroom observation. In order to study the effects on teaching practices, the researcher adapted the followings procedure: 1. developing an examination for teachers to identify the alternative conceptions in genetics. For this reason the chapters related to genetics were also analyzed. This revealed that the text could have an effect on establishing alternative conceptions.

2.developing an examination for the students, 3.observing different classes to describe the strategies that the teachers used in teaching genetics..

It was found that there were differences between the constructivist teachers and empirical ones in the contents of the material they taught, the number of questions they asked, and the activities and analogies they used. The differences favored the constructive teachers. The percentage of students who hold the correct conceptions and alternative ones were also calculated. It was found that the students of constructivist teachers had more correct conceptions and less alternative ones compared to the students of empiricist teachers