Abstract

Where do Teaching Aims meet in the Palestinian Geometry (classes 1- 12), Compared with Psychological and International Criteria for Learning and Teaching Geometry?

This study is intended to evaluate the Palestinian geometrical curriculum, compared with international geometrical curricula, such as, the Japanese curriculum, and the geometrical curriculum NCTM that has been derived from school Math criteria, which has been put by the National Council of Math Teachers in the USA, in the year 2000.

The study presented these questions: -

1- What are the similarities and differences between the teaching aims of geometry in the Palestinian curriculum, and the aims of geometry derived from school math criteria put by the NCTM in the year 2000?

2- What are the similarities and differences in the teaching aims of geometry in the Palestinian curriculum, and the teaching aims of geometry in the Japanese curriculum?

3- To what extent can the aims and activities of geometry in the Palestinian curriculum cope with the (Van Hiele) levels?

These questions have been answered by arranging the aims and activities of geometry to NCTM, Japan and Palestine in two tables. The first table concentrated on the aims and activities of geometry to NCTM and the Palestinian curriculum. The second concentrated on the aims and activities of geometry in the Japanese and the Palestinian curriculum.

Each table of the two included aims and activities of geometry to four levels according to classes (1 – 2), (3 – 5), (6 – 8) and (9 – 12).

Geometry was classified into four teaching Programs that were deeply investigated as follows: -

1- Analyze characteristics and properties of two and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.

2- Specify locations and describe spatial relationships using coordinate geometry and other representational system.

3- Apply transformations and use symmetry to analyze mathematical situations.

4- Use visualization spatial reasoning, and geometric modeling to solve problems.

In addition a check- list was designed to find out to what extent the NCTM aims are included in the Palestinian geometrical curriculum.

The check- list, which has been filled by the Researcher, included five points that shows the relation between the NCTM aims and the Palestinians in geometry. Similarities and differences in both the NCTM and Palestinian curriculum have been followed up; similarities and differences in both the Japanese and the Palestinian curriculum have also been followed up. Aims and activities of geometry in the Palestinian curriculum were arranged in a table to find out to what extent they are related to Van Hiele levels too.

Results show that there are similarities and differences between these curricula and the Palestinian geometric curriculum in unequal percentage.

Similarities and differences were more obvious after the check- list, which has shown that there are aims in the NCTM not included in the Palestinian geometric curriculum, and some other aims are included in a certain degree.

According to Van Hiele levels compared with aims and activities of the Palestinian geometry curriculum the checking list showed that there is a rapid shifting from the analysis level (1) to the informal Deduction level (2) and to the Deduction level (3).
Not only this but also, there aren't a rent enough activities in level (2) that help students shift into level (3).

On the light of these results the Researcher has recommended to review the aims and activities in accordance with Van Hiele levels and to present aims and activities that cope with level (2) and help the students find the links in the geometrical relations net.

The Researcher recommended also to start level (3) in the 9^{th} grade instead of the eighth.