

THE EFFECT OF THE SOCIO – CULTURAL FACTORS DURING AN INTERDISCIPLINARY APPROACH OF TEACHING MATHEMATICS & TECHNOLOGY

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This research examines the effect of cultural factors during the implementation of an activity that was carried out by 6th grade students in the framework of an interdisciplinary approach of Mathematics and Technology courses. Two four-membered mixed teams formed the sample of students. The activity concerned the design of a window of the belfry of an Eastern Orthodox Church that laid nearby the particular High school. The students were asked to draw a window twice the size of the one appeared in an under scale photograph of the belfry. The activity was carried out by the students without the presence of the researchers and the discussions between the members of both teams were video and audio recorded. In the analysis of the discussions and the drawings collected, particular emphasis was given to the effect of the dominant cultural elements. The discussions as well as the drawings reveal the degree to which the cultural context of the problem activates previous experiences of the students. We find that during the implementation of the activity their discussion incorporated influences from themes that are related to modern television forms of entertainment. However, it is the traditional cultural factors that mainly influence the drawing proposals. With respect to the mathematical part of the activity, the students proceed with off-hand numerical calculations and with vague and spontaneous use of the notion of scale. The students do not appear to be familiar with this notion although they were taught this subject the previous year. The analysis of the recordings shows also that the boys are more familiar with the application of certain mathematical and technological ideas. The incorporation of "decorative" elements in the final drawing by the girls leads the first team to the adoption of this particular drawing and to the rejection of some other appreciable proposals that present remarkable harmonies. The second team does not manage to adopt a unique proposal since its members had been separated tacitly from the beginning in two subgroups: boys and girls. Thus, this team proposes two different drawings, both characterized by originality and by traditional cultural effects.

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