

Abstract

Matýsková, P. (2010): Mathematical skills applied to the teaching of geography at secondary schools in the topic the Earth as a cosmic orb. Department of Social Geography and Regional Development, Charles University in Prague.

Submitted diploma thesis deals with interdisciplinary relationships between mathematics and geography at grammar schools in the topic the Earth as a cosmic orb. The relationships are generally described from the point of view of three curriculum forms (intended, implemented and achieved). In the area of the intended curriculum there is an analysis of curriculum documents carried out, especially of the Framework educational programme and of selected school educational programmes. Subsequently, the links between selected secondary school textbooks of geography and mathematics are evaluated on the basis of required curriculum, its quality, intelligibility and occurrence of examples from the practice. The subchapters of the selected unit, in which an application of mathematical skills can be found, are defined in detail and specified on the basis of the carried analysis.

Deep, semi-structured interviews were conducted with the teachers at selected grammar schools for the purpose of the study of the implemented curriculum. The achieved curriculum was found out on the basis of the questionnaire survey on the pupils – they were tested in the form of prepared exercises where they applied the links between mathematics and geography. The conclusions acquired from the research in the field are the basis for the design of possibilities to connect mathematical and geographical curriculum, which should lead to a better understanding and application of school knowledge and skills in a real life.

As one of the partial outputs of the thesis there are therefore also worksheets, in which this connection is applied in the practical examples. These worksheets can be used for teaching mathematics as well as geography at secondary schools.

Key words: interdisciplinary relationships, qualitative research, framework education programme, school education programme, textbook analysis, geography, mathematics

