

Contents

Preface	3
1. Introduction	5
1.1. Overview	5
1.2. The basics of examining of cartographic products.....	6
2. Information value of the map	9
2.1. Graphical space-filling and complexity of the map.....	9
2.2. Relation of graphic variables and map's usability.....	10
3. Evaluation methods in cartography	13
3.1. Principles of research methods and techniques	15
3.2. Subjectively-based evaluation methods	17
3.3. Objectively-based evaluation methods.....	20
3.4. Mixed-research design	22
4. Usability of the map	25
4.1. Aspects of usability	25
5. Usability testing of cartographic visualizations	28
5.1. Types of tasks on the map	30
5.2. Structural model of solution of cartographic tasks.....	33
6. Psychological aspects of working with the map	35
6.1. Perception of visual information	36
6.2. Locating and recognizing objects.....	37
7. Inter-individual differences in visual perception	41
7.1. Cognitive style.....	41
7.2. Characteristics of cognitive styles	43
7.3. Cognitive style in cartographic research	46
8. Possibilities of testing differences between users	48
8.1. Object and spatial imagery tests.....	48
8.2. Tests of global-analytical dimension of cognitive style	49
9. Research software Hypothesis	51
9.1. Technology	53
9.2. Database structure	55
10. Functionality of the software Hypothesis	56
10.1. Description of XML configuration files	57
10.2. Types of components, which can compose a slide.....	64
10.3. The Map element – an image with functions for receiving feedback	66
10.4. Sections of the element <i>Map: Layers</i>	69
10.5. Sections of the element <i>Map: Controls</i>	76
11. Hypothesis Manager	83
12. Conclusion	88
References	90
Appendix 1 – database tables information	100
Appendix 2 – database ER diagram	106