# CRITICAL SPOTS IN UNDERGRADUATE CARTOGRAPHIC EDUCATION

ANALYSIS OF FINAL TESTS AND ORAL EXAMINATIONS

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**1,315 tests** 

long-term testing of students in the first year of the Bachelor's degree

course Geographical Cartography for various graduate profiles:

- single-subject Geography
- double-subject Geography (future Geography teachers)
- **Applied Geoinformatics (from 2021)**

CURRICULUM INNOVATION WITHIN THE BASICS OF CARTOGRAPHY

TAKING INTO ACCOUNT THE SPECIFICS OF THE GRADUATE PROFILE AND THE NEEDS OF THE LABOUR MARKET DISCUSSION PLATFORM ON CARTOGRAPHIC EDUCATION NOT ONLY AT CZECH UNIVERSITIES

BACKGROUND AND THE MAIN GOALS

#### STATISTICAL ANALYSIS STUDENT INFORMATION TEST IMADITATION MOLITARIAS OF THE PROPERTY OF TASKS WITH MATHEMATICS TASKS WITH VISUALS **DESIGN OF THE DIDACTIC TEST DATABASE CATEGORISATION STRUCTURE OF TASKS** PESULTS IN INDIVIDUAL TASKS TYPE OF TASKS, ETC. **Figured** THEMATIC CARTOGRAPHY, **MATHEMATICAL PRINCIPLES MAP AND CONTENT** OF MAPS TOPOGRAPHIC MAP, **MAP SCALE** PLANIMETRIC COMPONENTS **CARTOGRAPHIC MAP COMPOSITION ALTIMETRIC** III **CURRICULUM AND ITS ELEMENTS COMPONENTS CATEGORIES IDENTIFICATION** STATISTICAL DATA **MAP LETTERING PROCESSING SEMIOLOGY AND LINGUISTICS,** OTHER TOPICS - INSTITUTIONS, **GENERALISATION, HISTORY, ETC. MEANS OF EXPRESSION** Figured **METHODOLOGY**

### WHAT IS EFFECTIVE AND HOW TO IMPROVE **COURSE DESIGN?**

**Learning by doing (creation of map outputs** during seminars) is an effective way for students to learn the basic practical procedures of map production ...

- ... factual knowledge, can be acquired through the iterative process of map production.
- place even more emphasis on the mathematical background of operations
- encourage greater collaboration among lecturers in courses that promote these competences
- include factual tests during the semester (in seminars)
- consider including some glossary of key terms

## CONCLUSION

### WHICH TYPES OF TASKS ARE CHALLENGING FOR OUR STUDEN

VISUALS, MATHEMATICS, MAP LETTERING, MAP COMPOSITION?

#### **CRITICAL SPOTS** IN THE CURRICULUM

#### **SUCCESS**

map composition and its elements

#### **FAILURE**

general cartography and statistical data processing

#### **EFFECTS ON TEST RESULTS**

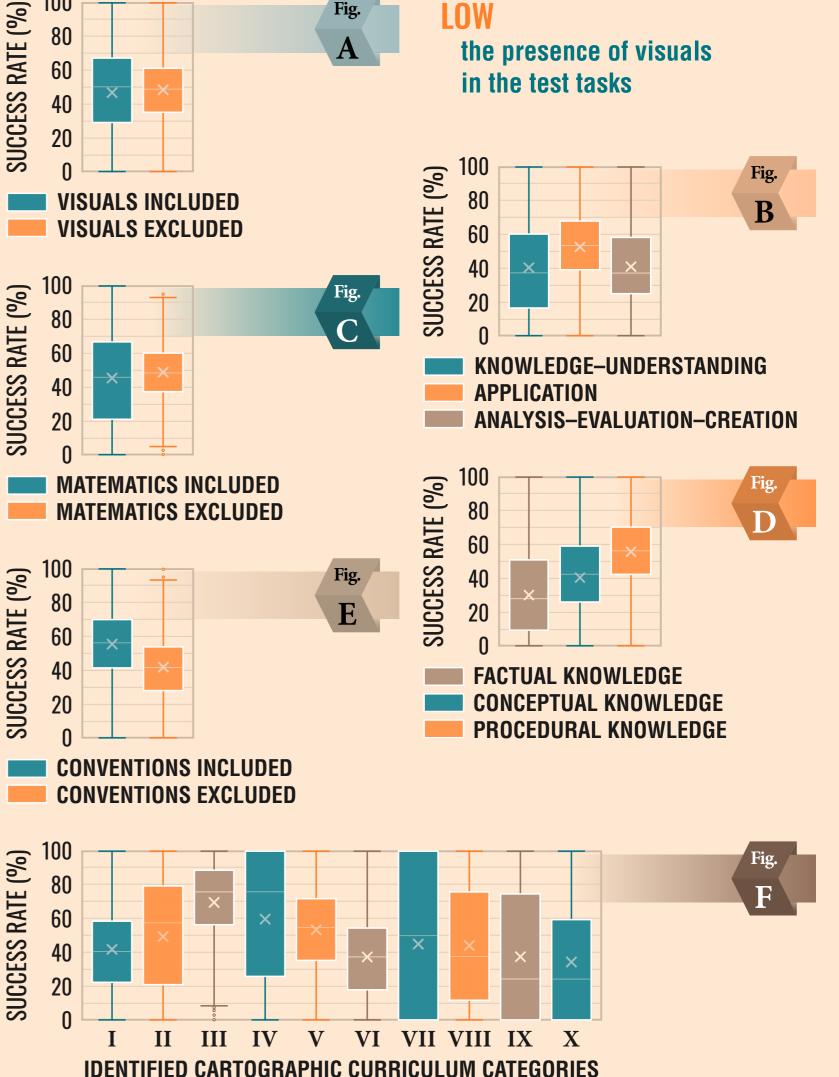
#### THE MOST

different cognitive demands and dimensions of knowledge (factual vs. procedural)

#### HIGHER

the presence of more complex mathematical operations

### **LOW**



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RESULTS

Faculty of Science

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