A pilot study of adapting, validating and further developing a map skills model to improve the teaching and learning of map reading at primary and secondary school level

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Abstract:

Different types of visual information sources play an important role in both the primary and secondary level of formal education. Of all science-related school subjects, geography is probably the one that makes use of the widest range of visual information sources, out of which maps convey a huge variety of geographical information. Maps can be considered as the universal language of geography as a school subject, their use is a basic and traditional method in geography lessons. However, it has not been explored thoroughly how map literacy and the process of map reading develop in students in our more and more digital world, and how these changes affect, can be successfully addressed and incorporated in the learning and instruction of map reading skills.

The MTA-SZTE Research Group of Geography Teaching and Learning has been investigating the map reading strategies of Hungarian students in a cross-sectional study, by employing the method of eye-tracking analysis. The goals of our research involves 1) further developing a map reading competency model describing the levels students are expected to achieve during their formal education (Hemmer et al., 2010); 2) identifying students' map reading strategies to find possible methods of successful teaching and learning in our more and more digitalized world (Havelková és Hanus, 2021); develop personalized methods and tasks to enhance successful learning of map reading.

The main research focuses on two grades at present: grade 7, which is primary school level in Hungary and the starting year of formal geography education for all students, and grade 10, which is secondary school level, at which point most of the students finish their formal geography education. During the research, students are presented a series of map reading tasks (developed and validated by the researchers of the Department of Geography Didactics at Humboldt-Universität zu Berlin, Germany). Qualitative and quantitative data are collected and analysed, based on which possible intervention points and methods are planned to be developed, tested and suggested.

At this stage, pilot data have been analysed, and the pilot results are being incorporated into the further development of the diagnostic tool as well as the map reading competence model. Preliminary results have revealed that novice and expert levels of map reading can be distinguished with our method, though the small number of the pilot tests do not allow us to distinguish general methods of map reading connected to age groups yet.

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References

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