



Developing Problem-Oriented Worksheets for Improving Science Latency

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The PISA assessments created by the OECD measure skills and abilities which are indispensable in the 21. century. The problem based, and digital competence requiring science questions in the tests demand the practical usage of the lexical knowledge. The PISA tests' results so far point out that the Hungarian pupils science latency is not reaching the desired level. There is a large gap between their lexical knowledge and in their skills of applying their knowledge. The traditional Hungarian education system and the available teaching aids are not helping to prepare our pupils for the modern PISA test, and as such, they are not prepared for the challenges of the modern world.

After the recognition of our educational system's serious deficiency, a small research team of University educators, experts and practicing teachers aim to develop innovative educational aids for teachers working in the field of science education. The currently developed aids intended for grade 8 to grade 13 consists of two parts: the student's handbook and the teachers's resource book. Both of them include worksheets for processing certain Hungarian micro- and mesoregions and Hungarian towns' local environmental and social challenges. Similarly to the PBL process, the worksheets start with a central problem and continue with tasks to understand the origins of the problem and encourages students to make suggestions about their solutions. The pupils have to use diverse sources (Studies, maps, diagrams and others) which are reachable via multimedia devices (QR codes). These colorful and motivating worksheets project the local problems and challenges on a nation-wide level. This helps to build complex scientific latency and model based learning.

There are teacher's resource books beside worksheets currently in development. These books include didactic tips and key. The research team's distant goal is to spread science competence developing and student-centered active learning methods in the Hungarian Educational System and among the Hungarian teachers. The team also aims to motivate teachers to create their own problem based worksheets.

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