

scientific reasoning. The sample included 53-53 classes from 52 Hungarian schools (grade 5: N= 549, males 49.9%, grade 7 (N=551, males 47.7%). An online test was developed to assess scientific reasoning (Cronbach's alpha grade 5: .76; grade 7: .84). In order to complete the tasks students had to operate different thinking processes such as conservation; proportional, correlational, probabilistic reasoning and classification skills in science context. The domain-general online inductive reasoning test comprised 55 items with four subtests: 15 figural series, 15 figural analogies, 14 number series and 11 number analogies (Cronbach's alpha was .90 in both grades). Results indicate that students' scientific reasoning skill changed significantly between the two school years. The correlation between scientific reasoning and domain general inductive reasoning was stronger in grade 7 ($r_{\text{grade5}}=.40$, $r_{\text{grade7}}=.62$). Linear regression analyses showed that inductive reasoning explained 39.7% of variance in grade 7 and 16.3% of variance in grade 5. Our results highlight the importance of improving reasoning through the content of teaching in everyday school practice.

Online assessment of scientific reasoning and motivation to learn science: a pilot study in Namibia

Keywords: Motivation, Quantitative methods, Reasoning, Science education

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Abstract The purposes of this study were to explore the possibilities of online assessment and to investigate the relationship between scientific reasoning and motivation to learn science in Namibia. The sample of the study was drawn from the fifth (N=275) and seventh graders (N=346). The online assessment tool for scientific reasoning skills consisted of 36 items with 16 tasks assessing conservation; proportional, correlational, probabilistic reasoning and classification skills in science context. The Science Motivation Questionnaire II. (SMQ, Glynn et al., 2011) was also applied. The eDia platform was used to collect the data. Learners were ferried from their schools to the University of Namibia's ICT rooms. Due to the low reliability in grade 5 (Cronbach alpha=.64) we excluded them from further analyses. For grade 7 Cronbach alpha=.70. The tasks were moderately hard for the students: $M=40.56\%$; $SD=13.47\%$. One-parameter Rasch analyses showed that there were few items for differentiate students at low skill levels. The reliability of the SMQ was good, Cronbach alpha=.91. Average scores were relatively high, thus, students reported that they are motivated to learn science. Except self-efficacy significant (p

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Single Paper

Teaching and Teacher Education

Teaching and Teacher Education - J

Keywords: Bilingual education, Educational Psychology, Language (Foreign and second), Motivation, Pre-service teacher education, Reading comprehension, Science education, Self-regulation, Teacher Professional Development, Teaching / instruction, Video analysis

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Linking Instruction and Student Achievement to Reading in English as a Second Language

Keywords: Language (Foreign and second), Reading comprehension, Teaching / instruction, Video analysis

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This study follows teachers and students in seven classrooms at seven different schools across three school years, by identifying components of classroom practices that can be related to reading achievement. The study combines achievement data (national English reading tests), instructional data (video observations from English lessons), and student survey data (perceptions of their English instruction). The findings indicate low quality English instruction; evidence of implicit rather than explicit reading strategy use and instruction; and that while the majority of the students expressed satisfaction of the support they received in their English lessons, the observed support was primarily given in the first language aimed at the poor readers. This study contributes with systematic findings of what characterizes second language reading instruction.

Effects and Surprises of Teaching Biology in a Foreign Language

Keywords: Bilingual education, Language (Foreign and second), Motivation, Science education

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Didactics often assume cognitive and motivational effects within properly conducted bilingual classroom settings for STEM-education, where a science is taught in a foreign language, which the students also learn at school. This quasi-experiment investigates commonly assumed effects on grades, grade change, motivation, interest and self-concept within a full-semester six point repeated measurement design with eight-graders ($n=51$). While none of the often-predicted effects on