

# Using textbooks and learning resources to scaffold students' learning

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The paper reports on an empirical research focused on the problem what role the teaching and learning resources play in scaffolding students' learning, i.e. what support they provide and how teachers mediate it. The following research questions were formulated:

RQ1: How do teachers apply and understand the use of textbooks and other teaching and learning resources for student learning?

RQ2: What strategies supporting learning can be identified in teaching and learning resources?

RQ3: How do teachers use teaching and learning resources to support learning?

Theoretical background represents a socio-cultural perspective on learning which enables to view how both the cognitive and social aspects influence students learning. An essential feature of students learning is the zone of proximal development (Vygotsky, 1978), where learning involves internal developmental processing as students interact with people and learning resources in their environment. We understand instructional scaffolding as strategies that teachers use to help learners bridge a cognitive gap or progress in their learning to a level they were previously unable to accomplish. A framework has been developed for analysing scaffolding strategies, based on the combination of scaffolding means, intentions and types of scaffolding (van de Pol, Volman & Beishuizen 2010; Yelland & Masters, 2007; Sikorova & Cervenkova, 2016).

The research used both qualitative and quantitative methods to explore and analyze data, the methods of in-depth interviews with teachers and textbook content analyses have been applied. Based on the results of the qualitative stage, a questionnaire has been developed as a tool for investigating teachers' use of resources and application of scaffolding strategies. The questionnaire will be introduced to the conference participants to invite them to join the research and carry it out in their own countries.

In the first phase, content analyses have been conducted to identify scaffolding strategies in Czech printed and digital secondary school textbooks for various subjects (RQ2). The analyses used the developed framework, identifying scaffolding types, intentions and means. Then, two kinds of in-depth interviews with 15 Czech secondary school teachers were applied. First one was focused on the use of the resources (RQ1) and the second one aimed at scaffolding strategies which teachers apply in resources-based teaching (RQ3). The teachers were addressed according to the method of maximum variation sampling, the main methodological tool used for analysing the data was typological analysis.

The results showed that potential scaffolding elements built-in the textbooks were not frequent both in printed and, surprisingly, in digital textbooks, though they could be tracked in textbooks based on constructivist foundations. The findings suggest that form of the text may be less important than concept of the book. It was also apparent that textbooks of different subjects may manifest different scaffolding strategies. The analysis of data on the use of resources concluded that there were two distinct types of teachers, differing in the kind of the key printed resource used and the purposes of resources use. The analysis of data on teachers' scaffolding strategies suggested that teachers used mainly such scaffolding means as hints, questions and modelling, while they rather neglected feedback on students' learning and metacognitive strategies.

## References:

Sikorová, Z., & Červenková, I. (2016). Možnosti scaffoldingu v procesu rozvoje a hodnocení kompetence k učení [Possibilities of scaffolding in development and evaluation of the competence for learning]. In J. Malach, I. Červenková, & M. Chmura (eds.). *Pokroky v hodnocení klíčových kompetencí* (s. 60–78). Ostrava: Ostravská univerzita.

Van de Pol, J., Volman, M., & Beishuizen, J. (2010). Scaffolding in teacher-students' interaction: A decade of research., *Educational Psychology Review* 22(3), 271–296.

Vygotsky, L. S. (1978). *Mind and Society*. Cambridge, MA: Harvard University Press.

Yelland, N., & Masters, J. (2007). Rethinking scaffolding in the information age. *Computers & Education*, 48, 362–382.