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Review of the publication: Ivana Rochovská, “Natural Science Education of Preschool and Primary School Teachers in V4 Countries”

The publishing house of Szent Istvan University in Szarvas has published a scientific monograph devoted to natural science education within the field of study at the preschool and elementary levels. The author, Dr. Ivana Rochovská, has produced several publications and studies related to this issue.

Her monograph *Natural Science Education of Preschool and Primary School Teachers in V4 Countries* focuses on natural science education in V4 countries and the achievements of the V4 countries in terms of international measurements of scientific literacy. The starting point for the monograph was the idea that students of various types and levels at school do not have a sufficient amount of natural-science knowledge. International studies such as PISA and TIMSS present findings that the level of scientific literacy of pupils in V4 countries is about average. The author believes that it is important improve this situation by strengthening the quality of natural science education within the university preparation of students, who are preparing for the profession of preschool and primary school teachers.

The goals of the publication were to define the concept scientific literacy and to characterize the science education in V4 countries. At a methodical level, the goal was to propose the developmental programme for natural science education of students within the study field Preschool and Elementary School Pedagogy.

The achievement of the above mentioned goals is presented in three chapters. In the first chapter, the author deals with the issue of natural science education as the process of the formation of scientific literacy. She also analyzes the achievements of the V4 countries in terms of the international measurements of scientific literacy – PISA and TIMSS – and depicts science education in V4 countries.

The second chapter focuses on the characteristics of natural science education of preschool and primary school teachers in V4 countries. On the basis of the accessible information on the web pages of pedagogical faculties and the information acquired from university/college teachers, the author processed the overview of courses oriented towards natural sciences which are included in the curriculum at the Preschool and Elementary School levels in V4 countries – the Czech Republic, Hungary, Poland and Slovakia. She characterized the objectives, contents and teaching resources of natural science education in the field of study of Preschool and Elementary School Pedagogy as well as interpreting the opinions of university/college teachers of natural science-related courses on the implementation of these courses in the mentioned field of study.

In the third chapter of the publication a proposal for a developmental programme for students is presented. The developmental programme focuses on the development of scientific literacy of students preparing for the professions of preschool and primary school teachers. The developmental programme consists of four parts: 1) Introduction to natural science education in pre-primary and primary education, 2) Teaching methods of natural science education, 3) Experiment as a method of cognition with pre-school and primary school children, 4) Illustration of the experiment in primary education during a natural science lesson.

The author presents the theoretical background of the problem under discussion and analyzes various approaches for a practical solution of the problem under consideration. The results obtained make it possible to assert that the used methods help students best in their zone of proximal development.

The author has used 27 sources to prove her points of view concerning the problems which are the subject-matter of the article. Among

the above mentioned sources there are the works by world-class scholars (Davis B., Glasser V., Sousa D. A., Their M., Wassermann S., etc.). The sources and reference are presented in conformity with the rules established and serve to prove the discussing points.

According to the author, science education in the field of study of Preschool and Elementary School Pedagogy is closely linked with the investigative methods and activities that are interconnected with the epistemology of constructivism. She believes that applying investigative methods is a verified way of developing innovations in the educational process, which is reliable to use, leading not only towards the development of the learner's scientific literacy, but also towards the development of others' key competences.

Reviewed publication:

Ivana Rochovská

"Natural Science Education of Preschol and Primary School Teachers in V4 Countries" [Óvópedagógusok és általános iskolai tanárok természettudományos képzése a V4 országokban]

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