

ABSTRACT

An evolution is considered the single greatest unifying theory in biology. Therefore, evolution is a crucial topic from the perspective of didactics of biology because it reaches contemporary paradigm of science education. These doctoral thesis deals with the educative aspects in the field of evolutionary biology. Given the fact that educational content and understanding of causal patterns in science may be influenced by the sociocultural background, the whole research is carried out in comparison with Great Britain. The main aim of the thesis is carried out three successive analyzes. First, the occurrence and the content of definitions of evolutionary terms in Czech and British science or biology textbooks have been compared (16 Czech and 16 British textbooks). Data were evaluated using content analysis and hierarchical cluster analysis. Subsequently, a comparison of teaching evolution has been made using a questionnaire survey (350 Czech and 122 British teachers) and interviews (10 Czech and 7 British teachers). Finally, a comparison of the Czech and British pupils' knowledge and opinions on specific evolutionary topics were obtained via a questionnaire (964 Czech and 97 British pupils). Statistically significant differences between Czech and British respondents were verified by Chi-square test or the Z-score test. Several differences in content of definitions of evolutionary terms included in Czech and British textbooks were found. Also a differentiation in a range of interpretation were identified in teaching of evolution. The British teachers further interpret genetic while the Czech teachers focus on human evolution. Teaching methods and forms connected to the pupil's own activities are applied by British teachers in a greater extent than Czech teachers. Some opinions of pupils showed more frequent misconception in connection with the term "evolution" and "natural selection" among Czech pupils, while the misconception merged with the term "biological fitness" are more common among British pupils. Comparison of educational aspects of teaching evolution in the Czech Republic and the Great Britain helped to detect some differences in the concept of understanding.