ABSTRACT

This thesis focuses on teaching the basics of cell biology at the lower secondary school level. The aim of the work is to create an effective teaching material that includes theoretical and practical activities aimed at teaching the structure and function of the cell, the basics of molecular biology, cell division, and heredity. The work is divided into several main parts, including theoretical background, research methodology, implementation of the teaching material, and its verification in practice.

The first part of the thesis deals with the theoretical aspects of teaching this topic within natural science education at elementary schools. The analysis of literature and curricular documents provides a framework for the development of teaching materials tailored to the specific needs of 6th-grade students. The methodological part describes the process of identifying students' preconceptions, the creation of teaching materials, and the subsequent testing of their effectiveness. The research was conducted in two phases: identifying preconceptions and implementing the teaching material followed by verification of understanding and long-term retention of knowledge.

The results of the research show that the use of activating methods and didactic games significantly improved the understanding and retention of the subject matter concerning the structure and function of the cell, which is considered a critical topic in natural science education. Students demonstrated better test results not only immediately after the lessons but also after three months, confirming the long-term positive impact of the methods used. This work provides valuable insights for further development and innovation in the teaching of natural sciences at elementary schools.

KEYWORDS

Cell, basics of molecular biology, activating methods, teaching materials, elementary school