

## **Scientific experiments in working with early childhood education students and their acquisition of scientific and social competences**

### **Summary**

The education system plays a priority role in preparing people for life in the modern world, full of dynamic changes. In order for the student to be a co-creator of events in the surrounding reality in the future, create new ideas and take rational actions, the school must build his subjectivity and develop the competences of the future. As a result of the changes that have taken place in the education system since September 2017, the science subject is taught only in the fourth grade of an 8-year primary school. The student has the opportunity to study and describe nature and to learn about the benefits of science only during physics and chemistry classes from the seventh grade of primary school.

The initial stage of education is to introduce the child to cognitive independence, which is a strong basis for his further learning. Due to the fact that the reports on the quality of Polish education pay attention to the paradigm of transmission, the author of the dissertation discusses the use of scientific experiments in working with students of younger school age. Considerations showing intentional pedagogical activity, which is to determine the level of student's readiness for active action in the light of the literature, are devoted to the first three chapters of the work. As a result of theoretical analyzes of selected items, the author adopted the concept for her own research. An experimental research procedure was used.

The dissertation reports the efficiency of an experimental program based on scientific experimentation as a method of didactic and educational conduct in early childhood education of a child. Research has shown that the use of scientific experiments in teamwork of students is consistent with integrated education, allows for the social construction of a scientific picture of the world through negotiations and arrangements, and develops the ability to manage one's own emotions. Recommendations are embedded in the current education system, and the proposed changes can be implemented immediately.

Keywords: scientific experiments, scientific and social competences, a student at an early school age, a pedagogical experiment.