

## ABSTRACT

**Theme of the Graduation Thesis:** “Design of neural network to solve the problems of pedagogical diagnostics (on the example of an educational institution)”

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**Relevance of the research topic:** Problems of modeling are one of the most important methodological problems of pedagogical diagnostics. Today, one of the most effective ways to solve such problems is to use a variety of modeling methods, which are based on the idea of reconstructing a real picture of an object, for example, its mathematical prototype. It is clear, that the quality of ongoing research will directly depend on the degree of adequacy of the model itself with respect to its prototype. Experience shows that to solve problems of this kind of plan, an artificial intelligence apparatus that is based on the theory of artificial neural networks can be successfully used. And the attempts of specialists in socially and psychologically oriented professions to a certain extent to build an adequate behavioral model of a children's team using artificial intelligence technologies that make it possible to identify deep hidden patterns of interaction between individuals are quite understandable.

**Objective:** modeling of socio-psychological processes in local dynamic social systems using the apparatus of artificial neural networks on the example of identifying bullying structures in the school team.

**Tasks:**

1. To review and study the modern methods of pedagogical diagnostics.

2. To analyse the applicability of Educational Data Mining in the practice of a teacher – psychologist.
3. To overview and analyse the neural network technologies
4. To develop the architecture of the neural network
5. To develop a software product that implements the task of pedagogical diagnostics

**Theoretical and practical significance of the research:** consists in developing and testing the neural network technology for predicting the results of pedagogical diagnostics proposed as part of graduation qualification work.

**Results of the research:** a neural forecasting network that evaluates the probability of manifestation of negative processes, the occurrence of a bullying structure in a children's team, to which a user interaction system is a mandatory element.

**Recommendations:** The obtained results and the developed software product are recommended for implementation in the work of a teacher-psychologist at a comprehensive school.