Monitoring the quality of training using multi-agent systems

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Abstract

The use of artificial intelligence in learning has spawned a new direction in intelligent training systems. At the same time, the creation of effective innovative technologies for teaching and self-education is possible in the case of revision, rethinking and reevaluation of basic didactic categories and concepts on a trans-disciplinary basis, while maintaining the cultural and historical continuity of pedagogical knowledge. The paper presents the concept of an intelligent training system based on intelligent agents. A feature of the system is the use of a system for monitoring the quality of education in order to predict success and assess the level of competencies, and form an individual approach.

Keywords: intelligent training systems, intelligent agent, predict success, individual approach

1 Introduction

Commissioner Mariya Gabriel announced the 2020 Education and Training Monitor at conference identified some of the main goals in the direction of education: continuity of lifelong learning, mobility of education, improving the quality and efficiency of education and training [1].

The development of the education system is due to the use of new technologies. The use of artificial intelligence in learning has spawned a new direction in intelligent learning systems. At the same time, the creation of effective innovative technologies for teaching and self-education is possible in the case of revision, rethinking and reevaluation of basic didactic categories and concepts on a trans-disciplinary basis, while maintaining the cultural and historical continuity of pedagogical knowledge.

The paper presents the concept of an intelligent training system based on intelligent agents. The multi-level system includes the following technologies: building a sequence of a training course, intelligent analysis of the student's answers, interactive support in solving problems, assistance in solving problems based on examples.

A feature of the system is the use of a system for monitoring the quality of education in order to predict success and assess the level of competence. Each student is individual and needs an individual approach. Therefore, the system must be trainable and store the consequences of each issued advice and, analyzing them, draw up an action plan based on the results obtained.

To assess the assimilation of information on academic performance and attitude to the learning process, it is planned to use the Kolmogorov system of equations [2]. To monitor the dynamics of educational results, use the trajectories of educational results built using data mining, namely, clustering and sequential analysis of templates for the selection of personalized recommendations [3, 4].

For such a system to function successfully, it is necessary to create a multilevel knowledge base using the PROTÉGÉ editor [5].

The concept of creating a learning system of education is still under development and requires additional time to study.

The experience gained in the development of a multi-agent control system [6] will make it possible to implement an intelligent training and learning system based on intelligent agents.

2 Decision

A concept is shown for creating an intelligent training system based on intelligent agents using monitoring the quality of education and predicting success and assessing the level of competence. An individual approach is provided by an action plan based on the results of the student and his attitude to learning. Methods and tools for the implementation of such a system are presented. The concept of creating a learning system of education is still under development and requires additional time to study.

3 Conclusion

The use of agent-based technologies makes it possible to automate the learning process, increase control of both the student and the teacher, moreover, on the desired horizon and vertical of knowledge, and thereby improve the quality of education and ensure the continuity of learning.

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