

# Ontological Approach for Question Generation and Knowledge Control

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**Abstract:** With the development of intelligent information technology, automatic generation of questions and automatic verification of answers have become one of the main functions of the intelligent tutoring systems. Although some existing approaches to automatic generation of questions and automatic verification of answers are introduced in the literature, these approaches only allow to generate very simple objective questions and verify user answers with very simple semantic structure. So, this article proposes an approach for designing a general subsystem of automatic generation of questions and automatic verification of answers in intelligent tutoring systems built using OSTIS technology. The designed subsystem allows to automatically generate various types of questions based on information

from the knowledge bases and multiple question generation strategies, and the subsystem can also automatically verify the correctness and completeness of user answers in the form of semantic graphs. Compared with existing approaches, the subsystem designed using the approach proposed in this article can not only generate various complex types of questions, such as multiple-choice questions, fill in the blank questions, questions of definition interpretation, etc., but also verify user answers with complex semantic structures.

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