An Item Selection Strategy Based on Association Rules and Genetic Algorithms

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Abstract

The online learning and testing have been as important topics of information education. The main purpose of academic testing is to improve learning. Students could take online test to evaluate their achievements to learning goals. Many online test systems randomly generate test papers from an item bank. A high-quality test paper must to consider the following questions. Is the depth and breadth of test items appropriate? Can test items examine student ability at different cogitative levels? Can test items avoid relationships among test items? Can a test identify student ability and provide learning suggestions appropriate? Therefore, it is the important issue to solve above problems by using information technology. This study applies a novel item selection strategy implemented by computer and is based on assessment theory, association rule, genetic algorithms and a revised Bloom taxonomy. The proposed strategy ensures that test is high quality.

Keyword：selection strategy, association rule, genetic algorithms, revision of Bloom's taxonomy, assessment theory