Chapter 2

Questions, Problems, and Analysis of the Answers in Intelligent Educational Systems

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ABSTRACT

One of the stages of the study is to test knowledge. To test the knowledge the learner is asked to answer questions or to solve a number of problems. According to the responses received one can determine the knowledge of the trainees of some of the studied material. In addition, the design of tasks, processing and analysis of the responses is important when testing, when measuring qualities and personality traits.

INTRODUCTION

From the point of view of the theory of activity Sukhodolsky (1998) showed, the problem in General is the goal, in this specific situation, and the solution is treated and how the process (method), and as a result. The school-house should take into account the specifics of the learning objectives, educational material itself and a number of other components of the learning process.

Issues and challenges in computer training have their own specifics. In the majority here, it is assumed that the correct answer is set in the system and the learner, answering questions, select the answer mode menu. In this case, the learning task consists of four parts: the instruction or instruction on what and how you must do the learner; text problems; answers; the correct answer.

The disadvantages of this approach are known. In this work discusses the methods and tools of analysis of the answers of the open type, when the learner to freely design the answer. The solution of problems of development of educational tasks in computer training and creating analyzers answer involves the determination of the place of values and relationship of the educational problems and issues. For this classify educational objectives and questions on various grounds.

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BACKGROUND

The learning problem is considered in two aspects: content and operational. Lane-the first is determined by the course content, the second character of activity think of a student. The operational aspect of the task is no less important than content. Accounting operational aspect contributes to the development of certain intellectual abilities of trainees.

MAIN FOCUS OF THE CHAPTER

Analysis of the operational aspect of the problem allows formulating approaches to rational design and use of learning tasks. In the work of Tollingerová and al. (1994) presents a psychological theory of learning tasks and the technology of their design. All kinds of cognitive operations are grouped into five categories containing 27 types of tasks, and below.

1. Tasks requiring mnemonic data playback.
   1.1. The task of recognition.
   1.2. Tasks playback of some facts, numbers, concepts.
   1.3. Tasks to reproduce definitions, norms, rules.
   1.4. Tasks play a large texts, poems, tables, etc.
2. Tasks requiring a simple mental operation with the data.
   2.1. Objectives to identify facts (measuring, weighing, simple calculation and so on).
   2.2. The task of enumeration and description of the facts (calculus, list, etc).
   2.3. The task of enumeration and description of the processes and ways of action.
   2.4. The task of parsing and structure (analysis and synthesis).
   2.5. Task mapping and discernment (comparison and separation).
   2.6. Task allocation (categorization and classification).
   2.7. Objectives to identify the relationship between facts (cause, effect, purpose, medium, effect, function, utility, tool, method, etc).
   2.8. The problem of abstraction, specification and generalization.
   2.9. Solution of simple examples with unknown values, etc.
3. Tasks requiring complex mental operations with the data.
   3.1. Task transfer (translation, transformation).
   3.2. Task presentation (interpretation, explanation meaning, significance, rationale).
   3.3. The problem of induction.
   3.4. The problem of deduction.
   3.5. The task of proving (argumentation) and verification (verification).
   3.6. Assessment objectives.
4. Tasks that require data messages.
   4.1. Tasks for the development of reviews, summaries, essays, etc.,
   4.2. Tasks: designing reports, treatises, reports, etc.
   4.3. Independent written work, drawings, projects, etc.
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