

Computer Adaptive Testing as an Automated Control of Students' Level of Preparedness Taking into Account their Individual Characteristics



Speaker's

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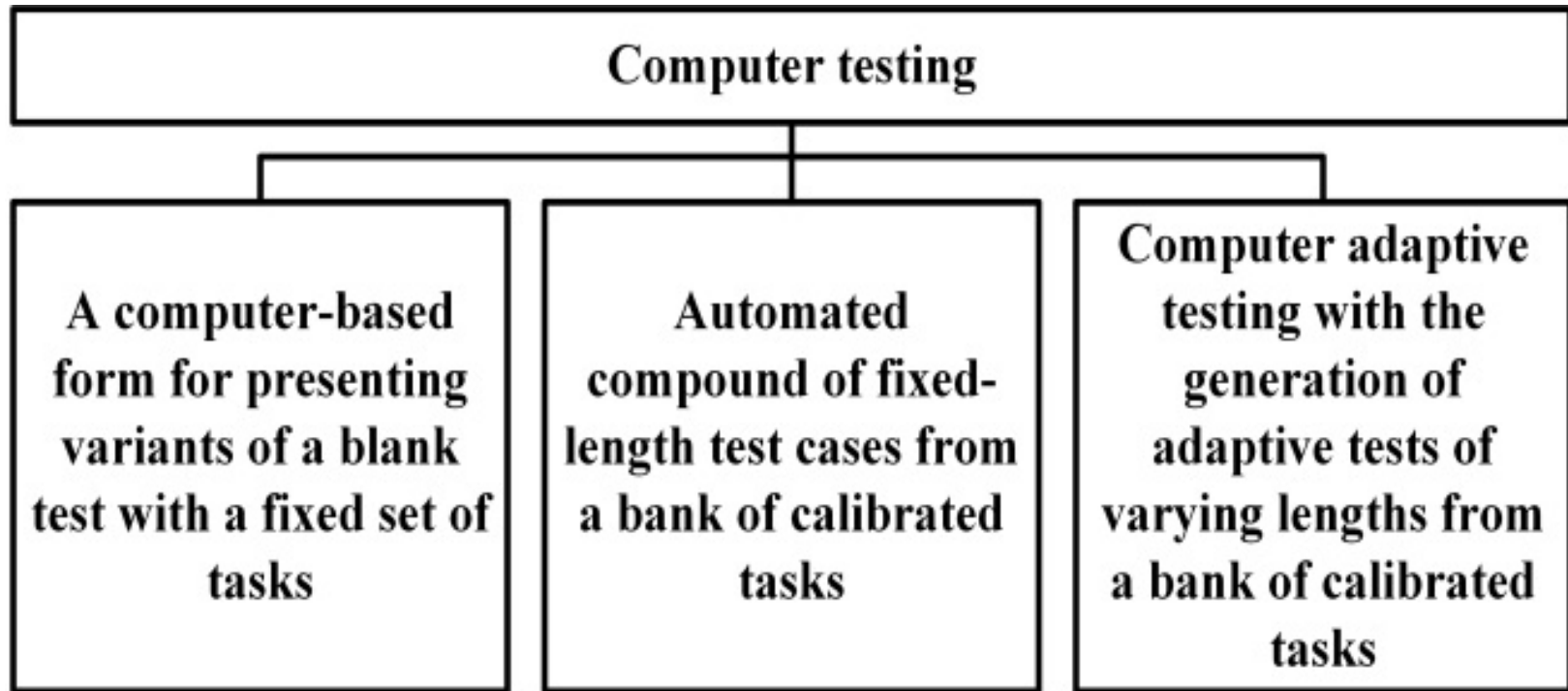
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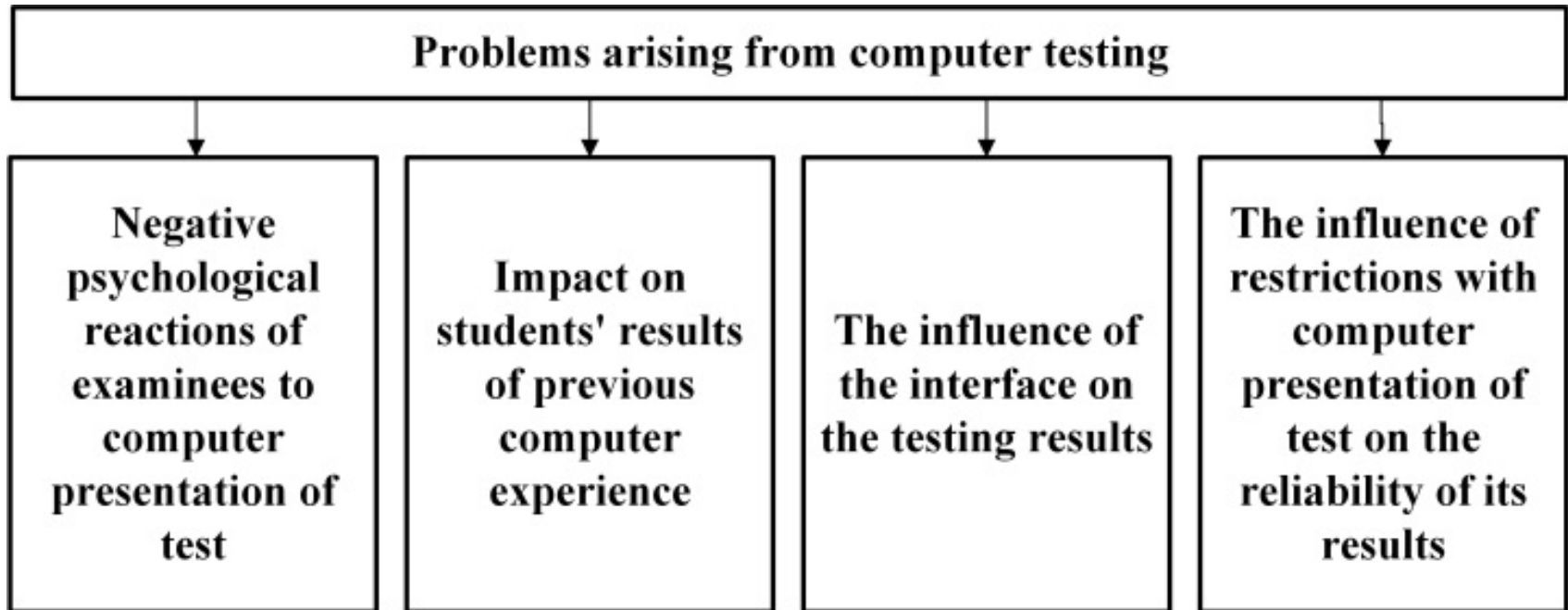
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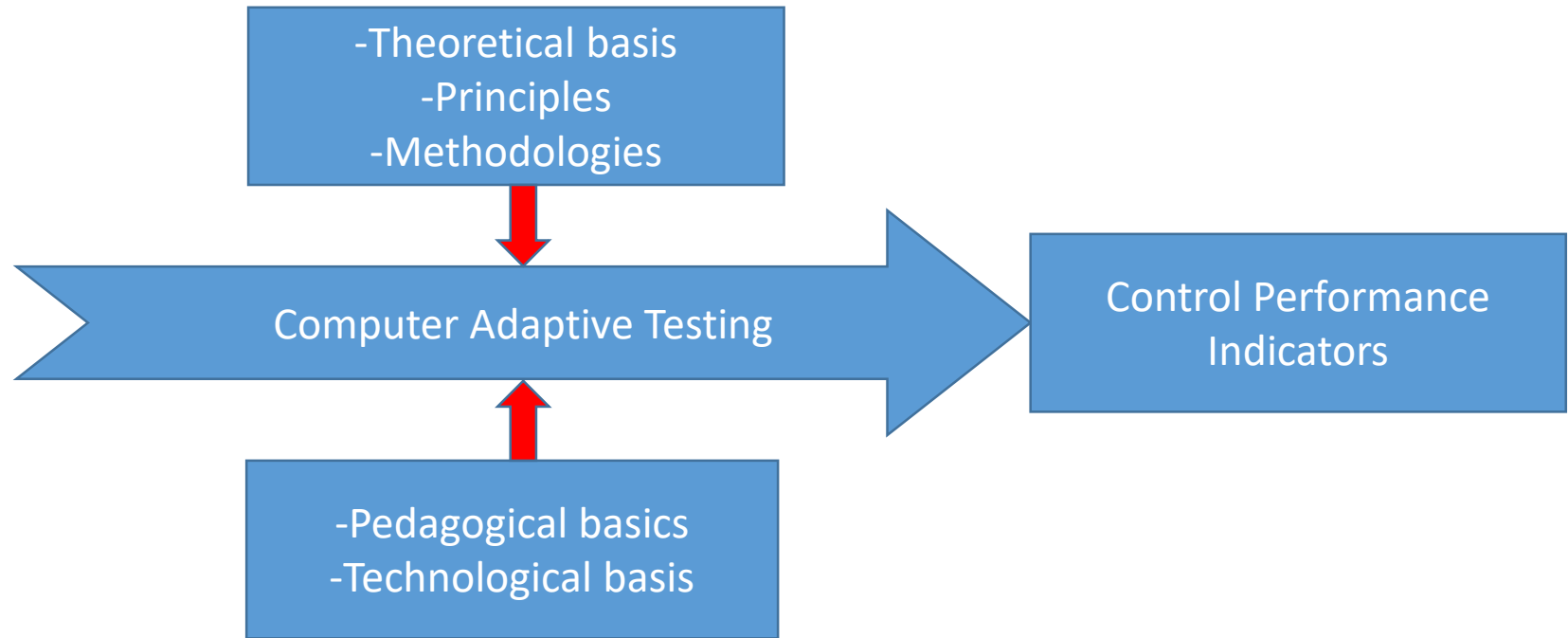
Forms of computer testing



Disadvantages arising from computer testing



Basic components of the implementation of computer adaptive testing



Special aspects of adaptive computer testing

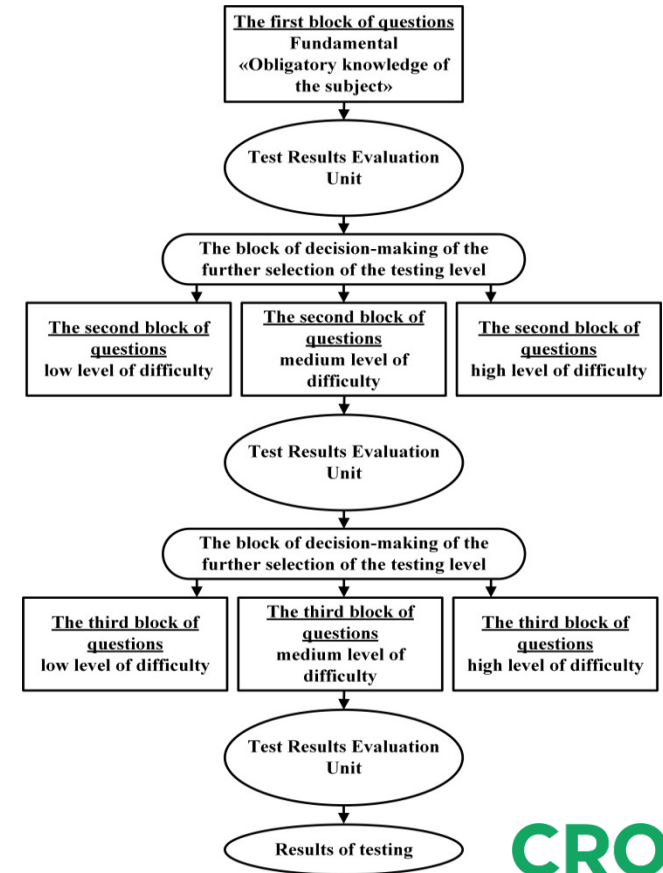
- individualization of testing speed;
- individual approach to students with different level of training;
- the lack of possibility of cheating during test tasks;
- immediately reflection of the result of the test ;
- minimization of the number of tasks and testing time;
- elimination of time, organizational and financial costs for standardization of tests norm.

The algorithm for implementing of two-step computer adaptive testing

three stage of testing process

-the first (fundamental) stage differentiates students according to the level of knowledge;

-the second and third stages carry out the adaptive testing process with the final interpretation of the results.



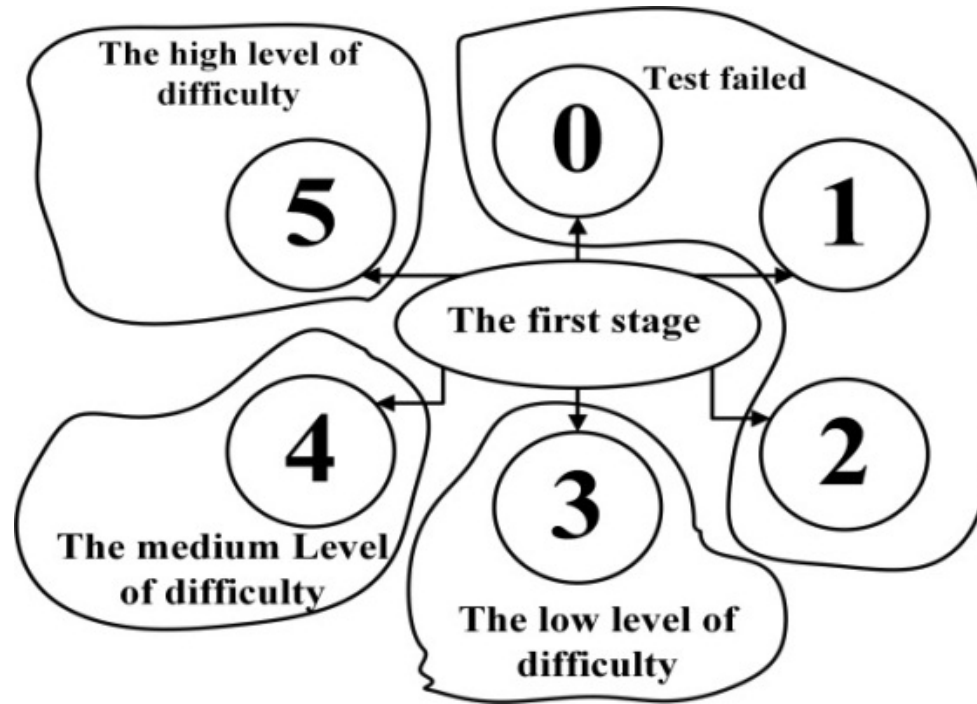
Initial data for modeling of test

Initial data	In general	In the presented algorithm
The number of stages	From 2 to N	3
The number of questions in each stage	From 5 to N	The 1st stage – 5 The 2nd stage – 5 The 3rd stage – 5
The number of difficulty levels of questions	From 2 to N	The 2,3 stages – (three difficulty levels) low medium high
The number of points for the correct answers in the test	At the discretion of the educator	The 1st stage – 1 point The 2,3 stages (2,3,5 points depending on the complexity of the question)

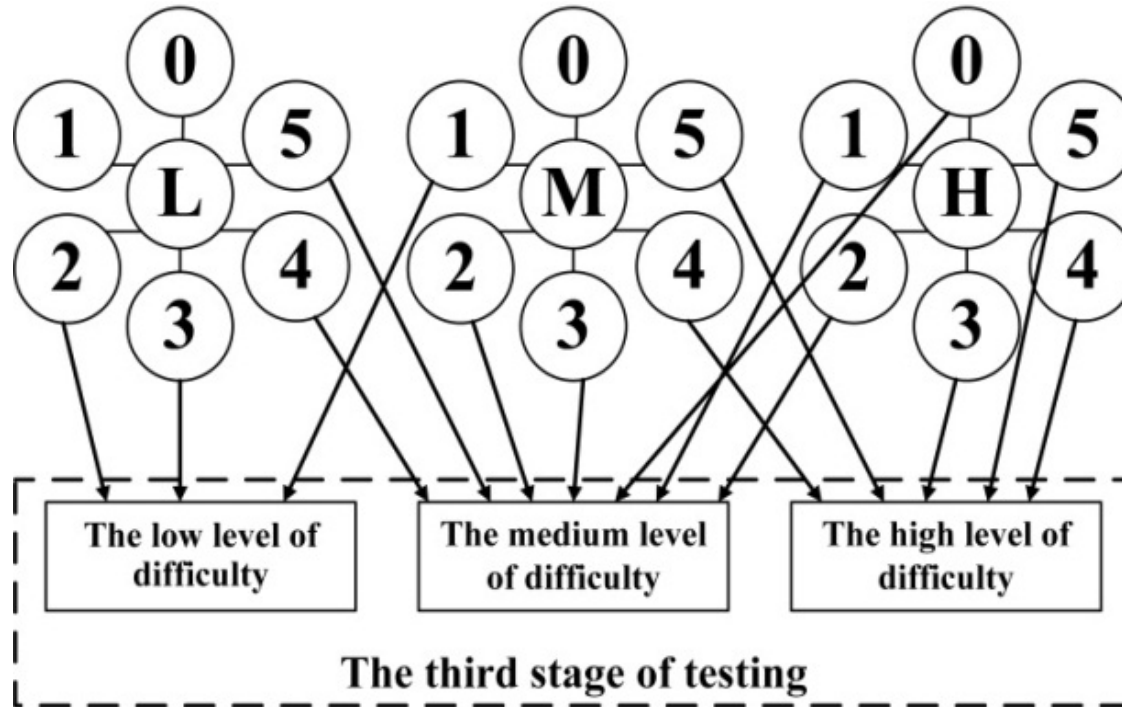
The scale of evaluating the results of testing

%	Points	Mark
96-100	53-55	5
91-95	50-52	5
88-90	49	4
84-87	47-48	4
81-83	45,46	4
78-80	43,44	4
74-77	40-42	3
71-73	37-39	3
68-70	35-36	3
61-67	34	3
55-60	30-33	2
0-54	0-29	2

The scheme of the algorithm at the first stage of testing



The scheme of the algorithm at the second and the third stages of testing



The conditions for starting testing

- the availability of tests with different size in a computer system;
- the initial level of testing is chosen;
- the number of questions required for the next level of complexity is defined.

Recommended settings

- if there is one topic in the test, then the number of questions at the difficulty level is N ;
- if there are several topics in the test, but less than 5, then the number of questions is more than one and less than N ;
- if there are more than 5 topics in the test, then the number of questions in each is n divided by the number of topics.

Psychological features of computer adaptive testing

- comprehensibility of tasks;
- adaptability of testing;
- autonomous character of accomplishment of tasks;
- the possibility of discussion of the test with educator;
- objectivity of assessment of student's knowledge.

Thank you for attention!

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