Application of the Internet Technologies in the Non-Standard Test Control in Estimation of Students' Knowledge

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Abstract – **The article discusses the use of a form for the completion of the test. The data are sent to the server, where a function can estimate them and the examinee can receive back his/her results and estimation. The no standard test is designed in Java Script.**

Keywords — **form, test-control, no standard test, estimation, Java Script.**

I. INTRODUCTION

The changes in the economic and social life define the priorities of our time: knowledge, information and communications. The most important is the quality estimation of students' knowledge.

II. THE THEORY AND METHODOLOGY OF THE TESTS.

The didactic test logic switches on in the common contests of the information security on the educational process and can be applied like a special application and development of technology of receiving feed back information for the teacher about the following basic aspects:

1. Receiving individual information of the level of knowledge according the educational goals, fixed in the educational program on the relevant subject.

2. Get a notion about the general level of knowledge in the different groups.

3. Get a notion about the general level of knowledge of regional and national level.

4. Determination of the gaps and the strong components in the valid program of education, based on the test.

5. The didactic tests are developed on one scientific base, many scientist of different countries have been working on their development. The next stage in the development of the test method is related to improving his scientific bases. Many methods of quality assessment of the tests are worked out (trustworthiness and validity). K.Pierson publishes the first researches in this area.

Very important contribution in the development of the theory and methodology of the tests make also Ch.Spearman, who unite and develop further the psychological theory of the theory with the theory of the physic measures, which reveal the trustworthiness of the test. T.Kelly creates the first

standardized test of initial school degree. The term test has many meanings - it means examination, try-out, control, it's a method for examining and verifying the knowledge in different areas – in particular for verification of the intellectual abilities. In the broad sense the test is a scientific method of making study of determinate qualities of the personality, which can be put into practice when the definite conditions are observed, and under definite goal which is scientifically well founded. The creation of the test should satisfy already established scientific requirements and the results of the test making are analyzed and can be compared with preliminarily created norms, generally valid criteria of assessment. The didactic test is an instrument for measuring the results of the educational activity over definite educational content, which can be assimilated in the conditions of the organized educational process. Every didactic test consist of an organized succession of questions and tasks. With them can be verified the level and the degree of execution of the requirements of the educational program on the respective educational discipline in relation to the knowledge and the abilities of the students. According to the purposes, character and aspects of the used test's tasks their number can vary – from 5,10 to 50,100 and even more. Independent of the content and typology of the questions and tasks in the didactic test all of them have the same inner structure. Every question is built by the combination of the following three components:

Introductory part consists information about the tested persons and it is the base for the formulation of the real question. Here are included the exit information, explanations, directions and indications necessary for the problems.

Formulation of the problem based on the previous information. It is a concrete task, requirement, which has to be done by the tested persons. The ways of posing the question can be different;

The answer needs of independently finding of the searched result or selection among the proposed alternatives.

Every test should consist of the following qualities:

1. Objectivity – independence of leading the test and the results of it by the author.

2. Trustworthiness – shows the precision of the procedure of leading the test like a measure cause every measure is accompanied with mistakes and the testing is measure.

3. Validity – shows the degree of it's correspondence about the achieving or un achieving on determined for measure educational purposes.

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4. Comparison – the results of one didactic test, received by different educated people can be compared one by one.

5. Economy – it is mainly concerned with the possibilities of one already ready test to be applied within investigations with mass character and a large number of students to be tested, and finally conclusions on national level can be made. On this way the test's material can be used many times.

6. Balance – it refers to the representativeness of the selected tested problems for covering the determined for measure educational contents and purposes. The most elementary form for achieving the balance is the Tyler's two – dimensional matrix with the dimensions level of assimilation and educational content.

7. Specificity – determines the degree which is necessary to solve the tested problems and the specific knowledge which are acquired after the educate has passed the educational course.

The didactic tests are classificated in 14 groups in [3] from G.Bijkov. The most known are:

1. The standardized and no standardized tests. The standardized test is based on already existing theory and the no standardized test is created by the educators for immediately applying within one educational institution.

2. General tests for achievements. The number of true solved problems reports the achievements of tested persons or the made mistakes for preliminarily determine time.

3. Diagnostic tests – they show the type of difficulties which the educated meets and why is it difficult to him – because he doesn't know the concrete fact material or he can't put on practice the learned.

4. Preliminarily tests – they are made to determine the incoming level of the educatedл

5. Processual, forming tests – they are offered after the complete study of a part of the educational content. On the basis of the results the lapses in the knowledge of the educated are verified and in consequence are filled in.

6. Final tests- this are tests, which are made at the end of one determinate date of the education – when one determinate cycle of lections is finished.

7. Normative and criterial didactic tests – they try to find an answer of the question. If the objectives of the respective normative documents are reached for each subject.

8. Adaptive and computering tests – the construction of these tests is very difficult and durable investigation process, which is based on the new theories of tests with probable and information-theoretical character.

Nowadays when the computer technologies are becoming more and more popular is a fact that these tests satisfy best the general qualities of the didactic tests. They are actually in the distance education. By them the educated gets a notion about his degree of the educated disciplines, about the lapses, which he has, commit at the time of his preparation. The general defect was the lack of back connection with the educated.

III. CREATING THE COMPUTERING TEST

By the computer tests the presenting of questions, their answering and verification is made by the using of a computer' program (test program). Priority of such tests is the great economy of time and resources, but their preparation acquires knowledge about these so-called authors languages for creating a computer educating programs. A part of the difficulties are avoided since with the bringing in the Internet technology and the mass creation of WEB pages. The using of JAVASCRIPT gives opportunity to rely with the educated, the consumer. JAVASCRIPT works in the WEB browser if it is conformable to it. This means that the last one can be used for problems, which aren't related with the server like the HTML forms and the CGI scripts. JAVASCRIPT is pure marked text, which is added to the WEB pages and gives opportunity to contact the consumer with forms. Forms' data – the answers of the questions are resented to the educated where a function for assessment of the test has been made. The proposed test is developed like a structural test. Every question has only one correct answer wit which agree all the experts. Controversial problems and the using of "tricks" and "devices" in the defining of the questions are not appropriate for the assessment.

To avoid the possible learning by heart of the questions and the answers by the educated, the proposed test is develop in 5 possibly variants and for each of them the consequence is different. Every educated person operates with determined structural information and every question has 4 possible answers and only one is correct. The answers are presented in the form with "radio" buttons and that assuree the indication of only one possible answer.

After the test finishes the button "assessment" should be pressed to submit the control of the function, which evaluates the result of the educated. The button "delete" clears the form and the button "send" sends it to the teacher. On figure 1 is shown the mean screen of the test, on figure 2 – the process of the test solving and on figure 3 can be seen the result.

IV. CONCLUSIONS

1. The test operates with data base which allows her actualization from unprofessionalists in the area of programming.

2. He posses a new "Random code" for mixing the questions and answers which makes difficulties for their knowing by minimum.

3. The assessment is by an algorithm which is conformable with the new tendencies for assessment (the halves at the ending estimation are eliminated).

4. Universality of the product is achieved and the last is designed for Windows XP, but there aren't any problems to work in irrelevant versions (Windows 98).

5. Impartiallyassessment of the educated is achi-eved

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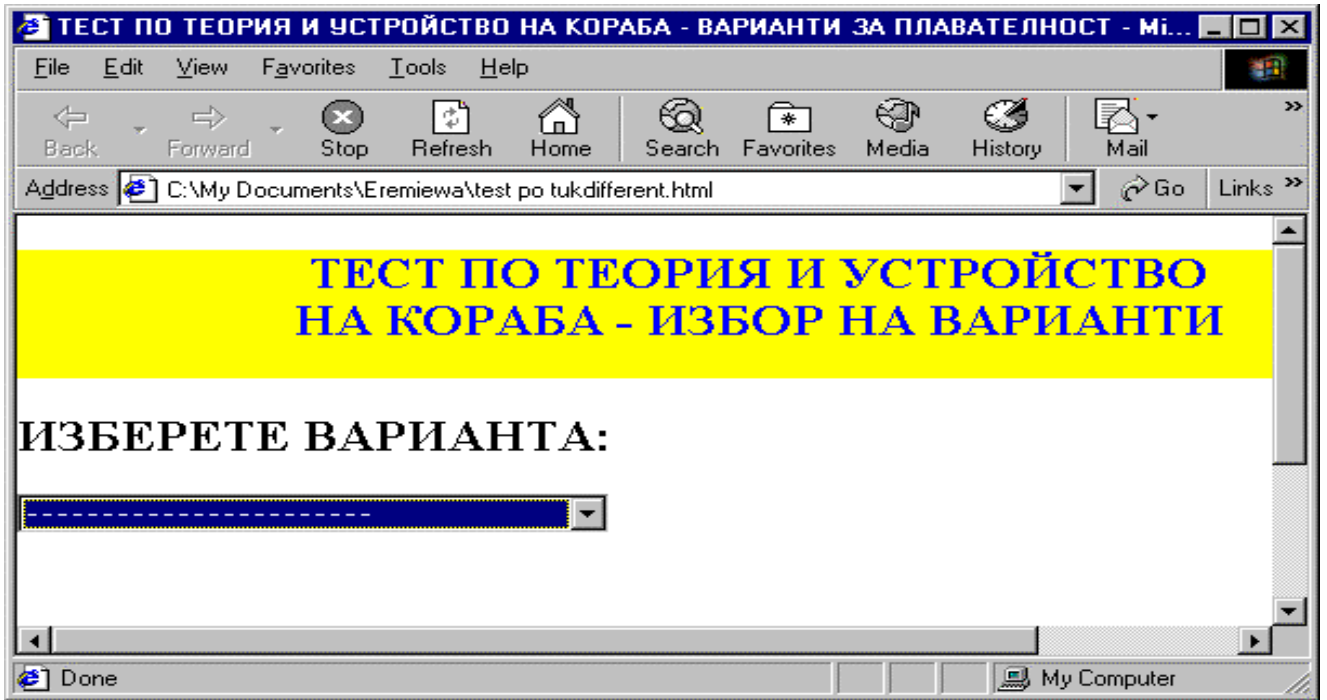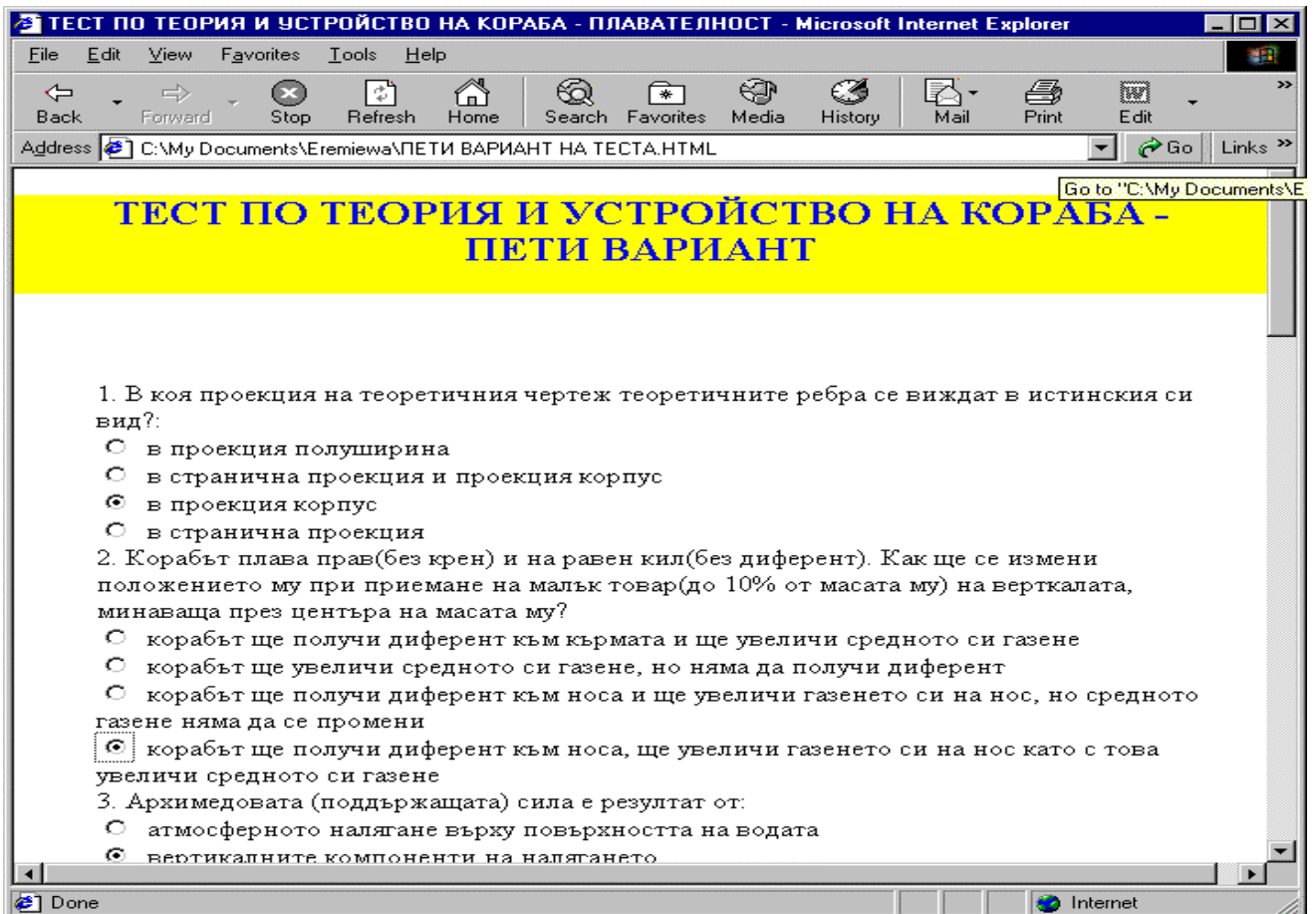[3] G. Bijkov "Theory and methods of diagnostician tests". Education.
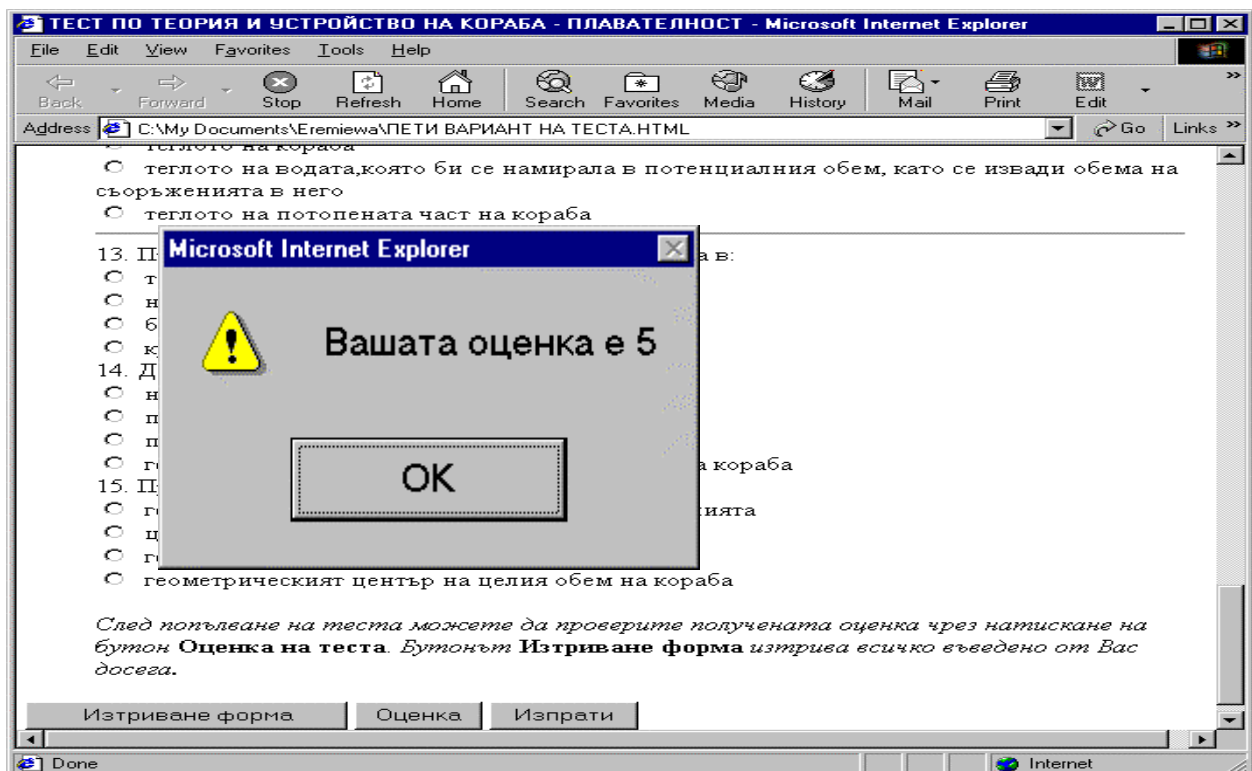
Fig. 1 Main screen

File Edit View Favorites Tools Help

Back   Forward   Stop   Refresh   Home   Search   Favorites   Media   History   Mail   Print   Edit

Address C:\My Documents\Eremiewa\ПЕТИ ВАРИАНТ НА ТЕСТА.HTML   Go   Links »

Go to "C:\My Documents\E

ТЕСТ ПО ТЕОРИЯ И УСТРОЙСТВО НА КОРАБА – ПЕТИ ВАРИАНТ

1. В коя проекция на теоретичния чертеж теоретичните ребра се виждат в истинския си вид?:
  ○ в проекция полуширина
  ○ в странична проекция и проекция корпус
  ◉ в проекция корпус
  ○ в странична проекция

2. Корабът плава прав(без крен) и на равен кил(без диферент). Как ще се измени положението му при приемане на малък товар(до 10% от масата му) на верткалата, минаваща през центъра на масата му?
  ○ корабът ще получи диферент към кърмата и ще увеличи средното си газене
  ○ корабът ще увеличи средното си газене, но няма да получи диферент
  ○ корабът ще получи диферент към носа и ще увеличи газенето си на нос, но средното газене няма да се промени
  ◉ корабът ще получи диферент към носа, ще увеличи газенето си на нос като с това увеличи средното си газене

3. Архимедовата (поддържащата) сила е резултат от:
  ○ атмосферното налягане върху повърхността на водата
  ◉ вертикалните компоненти на налягането

Done   Internet

Fig. 2 Decision of the test

File Edit View Favorites Tools Help

Back   Forward   Stop   Refresh   Home   Search   Favorites   Media   History   Mail   Print   Edit

Address C:\My Documents\Eremiewa\ПЕТИ ВАРИАНТ НА ТЕСТА.HTML   Go   Links »

теглото на кораба
  ○ теглото на водата,която би се намирала в потенциалния обем, като се извади обема на съоръженията в него
  ○ теглото на потопената част на кораба

13. П...   а в:
  ○ т
  ○ н
  ○ б
  ○ к
14. Д
  ○ н
  ○ п
  ○ п
  ○ г   а кораба
15. П
  ○ г   ията
  ○ ц
  ○ г
  ○ геометрическият център на целия обем на кораба

Microsoft Internet Explorer ⚠ Вашата оценка е 5   OK

След попълване на теста можете да проверите получената оценка чрез натискане на бутон **Оценка на теста**. *Бутонът* **Изтриване форма** *изтрива всичко въведено от Вас досега.*

Изтриване форма   Оценка   Изпрати

Done   Internet

Fig. 3 Estimation