

SOFTWARE USED FOR TESTING AND EXAMINATION WITHIN AN ACADEMIC CAMPUS

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ABSTRACT

This paper treats the problem of education named the management of testing a learning formation using the computer. With the development of information technology, it was gradually introduced in the process of teaching - assessment the modern computing resources, such as computers, pads, scanners, working in the virtual environment. In this way it was developed the concept of e-learning and online assessment. This concept is known as e-testing. In this article it is shown the way of working with the ExamView Suite software for management of testing a class of students.

Key words: e-testing, e-assessment, ExamView Test Generator, ExamView Test Manager, ExamView Player, e-learning.

1. INTRODUCTION

Educational assessment is the process of documenting, usually in measurable terms, knowledge, skills, attitudes, and beliefs. Assessment can focus on the individual learner, the learning community (class, workshop, or other organized group of learners), the institution, or the educational system as a whole. According to the Merriam-Webster online dictionary the word assessment comes from the root word assess which is defined as: to determine the rate or amount of (as a tax); to impose (as a tax) according to an established rate b: to subject to a tax, charge, or levy; to make an official valuation of (property) for the purposes of taxation; to determine the importance, size, or value of (assess a problem); to charge (a player or team) with a foul or penalty. Assessment in education is best described as an action "to determine the importance, size, or value of."

The term assessment is generally used to refer to all activities teachers use to help students learn and to gauge student progress. Assessment is often divided using the following distinctions: initial, formative, and summative; objective and subjective; referencing (criterion-referenced, norm-referenced, and ipsative) and informal and formal.

The most used classification of assessment is initial, formative, and summative. Initial assessment refer to as pre-assessment or diagnostic assessment, initial assessments are conducted prior to instruction or intervention to establish a baseline from which individual student growth can be measured.

The formative assessment is generally carried out throughout a course or project and refers to as "educative assessment", is used to aid learning. In an educational setting, formative assessment might be a teacher (or peer) or the learner, providing feedback on a student's

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work and would not necessarily be used for grading purposes. Formative assessments can take the form of diagnostic, standardized tests.

The summative assessment is generally carried out at the end of a course or project and is typically used to assign students a course grade. Summative assessments are evaluative.

Summative and formative assessments are often referred to in a learning context as assessment of learning and assessment for learning respectively. Assessment of learning is generally summative in nature and intent to measure learning outcomes and report those outcomes to students, parents and administrators. Assessment of learning generally occurs at the conclusion of a class, course, semester or academic year. Assessment for learning is generally formative in nature and is used by teachers to consider approaches to teaching and next steps for individual learners and the class.

Assessment (either summative or formative) is often categorized as either objective or subjective. Objective assessment is a form of questioning which has a single correct answer. Subjective assessment is a form of questioning which may have more than one correct answer (or more than one way of expressing the correct answer).

There are various types of objective and subjective questions. Objective question types include true/false answers, multiple choice, multiple-responses and matching questions. Subjective questions include extended-response questions and essays. Objective assessment is well suited to the increasingly popular computerized or online assessment format. All assessments are created with inherent biases built into decisions about relevant subject matter and content, as well as cultural (class, ethnic, and gender) biases.

Assessment can be either formal or informal. Formal assessment usually implies a written document, such as a test, quiz, or paper. A formal assessment is given a numerical score or grade based on student performance, whereas an informal assessment does not contribute to a student's final grade such as this copy and pasted discussion question. An informal assessment usually occurs in a more casual manner and may include observation, inventories, checklists, rating scales, rubrics, performance and portfolio assessments, participation, peer and self-evaluation, and discussion.

2. E-ASSESSMENT AND E-TESTING

E-assessment is the use of information technology for any assessment-related activity. This definition embraces a wide range of student activity ranging from the use of a word processor to on-screen testing. Due to its obvious similarity to e-learning, the term e-assessment is becoming widely used as a generic term to describe the use of computers within the assessment process. Specific types of e-assessment include computerized adaptive testing and computerized classification testing.

E-assessment has many advantages over traditional (paper-based) assessment: lower long-term costs, instant feedback to students, greater flexibility with respect to location and timing, improved reliability (machine marking is much more reliable than human marking), improved impartiality (machine marking does not 'know' the students), greater storage efficiency - tens of thousands of answer scripts can be stored on a server compared to the

physical space required for paper scripts, enhanced question styles which incorporate interactivity and multimedia.

There are also disadvantages. E-assessment systems are expensive to establish and not suitable for every type of assessment (such as extended response questions). The main expense is not technical, it is the cost of producing high quality assessment items - although that cost is identical when using paper-based assessment.

E-testing is a rapidly growing area of e-assessment involving the delivery of examinations and assessments on screen, either using local systems or web-based systems. An e-test is any test that replicates or replaces paper based tests with a computer screen, also referred to as on-screen tests. This involves the transfer of paper tests to computer with little or no change to their appearance on paper. Any one qualification may employ one or any combination of methods to take e-testing to the computer screen. This may include variations that could not be easily replicated on paper, such as video or audio clips, and animated quizzes. Further possibilities for e-testing include the use of full information and communication technologies interactivity. This often uses 'virtual situations' requiring the candidate to process information to arrive at the required solution.

One of the major key benefits of e-testing for the centers and learners are that test data is sent immediately to the awarding body or examiner, and results can be given immediately via an automated marking system.

E-testing offers a greater flexibility allowing learners to take their assessments at any time when they are ready to be assessed and not just at a point in time dictated by examinations and awarding bodies. The flexibility of location and test times, leads to greater learner engagement.

The ExamView Assessment Suite (including the Test Generator, Test Manager, and Test Player) is a comprehensive solution for creating, administering, and scoring tests. The software includes many features to save the trainer time and generate information to assess and improve student performance. The ExamView allows the teacher (trainer) to create tests, worksheets, or study guides while incorporating elements such as graphs, charts, pictures, and mathematical equations to assess the students. After creating a test, the trainer can print multiple versions, save his test for students to take over the LAN (Local Area Network), or use ExamView banks and the CPS clickers to quickly pre-assess or test students in a matter of minutes.

The ExamView Assessment Suite includes a separate program called the ExamView Test Player that the teacher can use to deliver online tests on the local area network. In terms of working environment, the application does not require the large hardware resources, except a minimum of 16 MB available memory for the application and 8 MB of hard drive space. Also, some ExamView Assessment Suite features require hardware devices such as response pads and scanners. These devices may have higher system requirements.

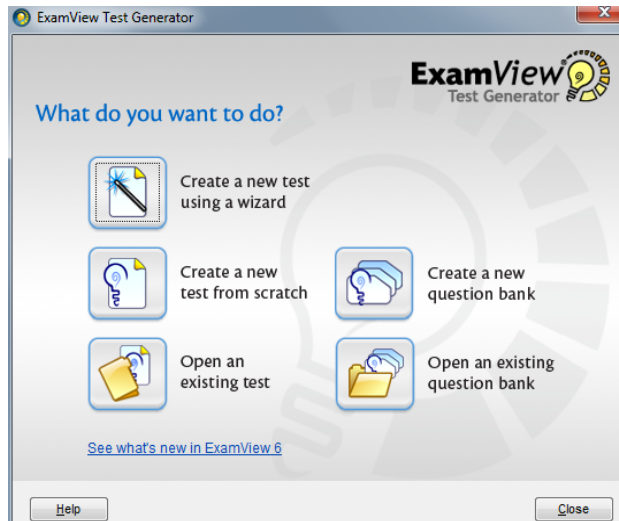
3. CREATING AND PUBLISHING A TEST USING EXAMVIEW (EXAMVIEW TEST GENERATOR)

The teaching and learning elements of each program should be designed in full knowledge of the sorts of assessment students will undertake, and vice versa, so that students can demonstrate what they have learned and see the results of their efforts. According to this, a valid assessment is one which measures what it is intended to measure. A good assessment has both validity and reliability, plus the other quality attributes noted above for a specific context and purpose. In practice, an assessment is rarely totally valid or totally reliable. A ruler which is marked wrong will always give the same (wrong) measurements. It is very reliable, but not very valid. Asking random individuals to tell the time without looking at a clock or watch is sometimes used as an example of an assessment which is valid, but not reliable. The answers will vary between individuals, but the average answer is probably close to the actual time.

In many fields, such as medical research, educational testing, and psychology, there will often be a trade-off between reliability and validity. A history test written for high validity will have many essay and fill-in-the-blank questions. It will be a good measure of mastery of the subject, but difficult to score completely accurately. A history test written for high reliability will be entirely multiple choices. It isn't as good at measuring knowledge of history, but can easily be scored with great precision. It is well to distinguish between "subject-matter" validity and "predictive" validity. The former, used widely in education, predicts the score a student would get on a similar test but with different questions. The latter, used widely in the workplace, predicts performance.

All assessment methods should allow students to receive feedback on their learning and performance so assessment serves as a developmental activity aimed at improving student learning. Assessment should also provide students and staff the opportunities to reflect on both their practice and their learning overall.

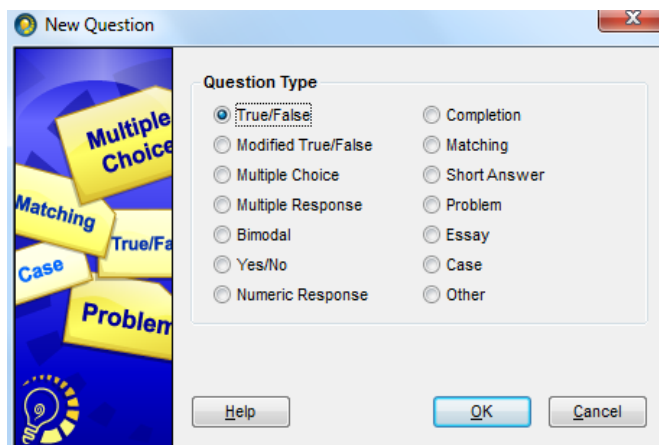
In Examview Test Generator are so-called "bank of questions." In a bank of questions the teacher creates the questions of verification for a subject. At the time of calling, the Examview Test Generator program the main screen will show the options window below:



To achieve a bank of questions the professor must choose the option "Create a new question bank". To use an existing bank shall be selected "Open an existing question bank". To perform a test shall be selected: Create a new test using wizard (this option assumes the existence of question bank!) or Create a new test from scratch (the test can be performed no matter if there is or not a bank of questions, the user having the possibility to enter the questions as they complete the test). To choose an existing test the user will choose Open an existing test.

I. Creating a bank of questions

To achieve a bank of questions the teacher will select the option Create a new question bank, then choose a heading and a subheading bank. In the end the trainer must press the OK button. To add a question bank it will be choose the section Question from the menu named New and then Specify where it will open a window with all types of existing questions or it will directly choose the type of question.



After selecting the type of question, software will open an editor (one window) where the teacher will write the effective question. For example, let's consider it wants to make a question with one correct answer (Multiple Choice). Once the teacher has selected the type of question it will be opened a window where it will be introduced the question text.

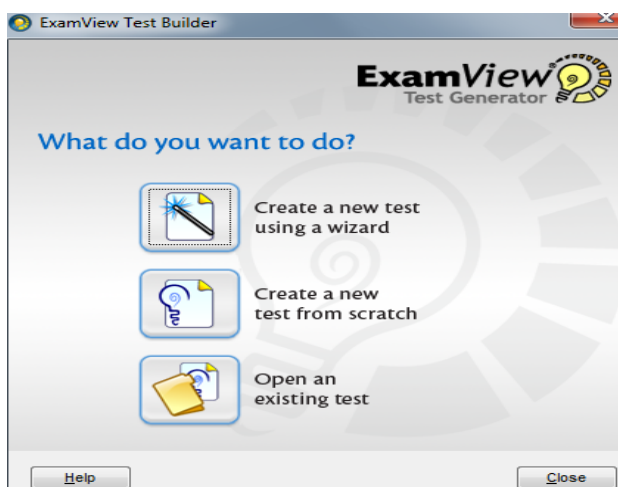
The Answer option provides the teacher the opportunity to introduce and choose the correct answer for the question. If he wants the question to have more than 4 options he must choose from Choices the number of desirable options.

To determine the number of points assigned to the question (depending on difficulty level) will select the option (button) Info and they shall be the related settings. After all these settings the teacher must press the OK button. For saving a question is necessary to press Record button. Similarly, the question bank shall be completed with how many questions the professor wants.

To save a database the user will choose the Save As option from the File menu. This will open a window in which the teacher will enter the name of the bank. Bank thus created will be saved in the default folder named Banks from Examview with the extension .bnk. To close the question bank editor it will select for Option Close from the File menu.

II. Creating a test

In order to achieve a quiz the user should select from the File menu the option Switch to test builder and on the screen will appear the window below:

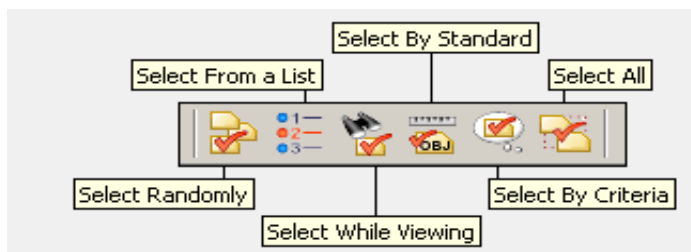


In the window shown there are being made available more options, namely: creating a test from a bank of questions previously defined, making a test by writing the questions from the keyboard. The option Create a new test using wizard allows definition of a test only if there is a bank of questions as previously defined. Thus, by selecting this option it will open the wizard where the teacher will name the test, the instructor will be able to select the bank or banks of questions that underlie achievement of the test and will be able to choose the questions which will be included in the test. In the column "Number to select" value of 1

means that the kind of question will be used, and the value 0, the type it will not be used. By clicking Finish the teacher finish defining the test.

The "Create a new test from scratch" option provides the possibility of achieving a test with any questions taken from a bank of questions and / or any questions inserted by the user.

To select test questions from the bank of questions the instructor can use several options from the main menu.



Select Randomly - this option allows the random selection of questions from the bank / banks of questions selected.

Select from the list - the user can select specific types of questions existing in the bank / the banks questions selected.

Select while viewing - the user can select the questions after viewing their content.

Select by standard - when introducing the questions it can be set the standard for each question. This option lets the professor select the questions that belong to a certain standard.

Select by criteria - similar option "Select by standard".

Select all - use all the questions in the bank / the banks questions selected.

To save a test the professor must select from the File menu the Save as option, he must write the test name, then click Save. The file thus created will have the extension .tst and saved in the folder directory named the Examview Tests. If a test is intended to be seen by students teacher must select the File menu option to Publish, and then select the desired option, as follows: the Examview Test Player on LAN allows publishing and accessing test on a local computer network (for example, the computer lab); Examview Learning & Test Center test allows publication and access to / from the Internet.

For example, if the teacher selects the Examview Test Player on LAN option it will open a window where the trainer can select which users can access this test (only a certain class, or all users, without being registered), then select Next and it will save the test with .eot extension (the extension .eot comes from the Examview Online Test) from the Tests folder. A special attention should be given to the extension of the file that contains the test. Thus, for a test to be viewed using the Examview Player program, it must be published, so it must have the extension .eot. If a test is not published then it has the extension. tst.

4. ENTERING THE STUDENTS DATA (CREATING A VIRTUAL CLASSROOM) – THE EXAMVIEW TEST MANAGER

When it starts the program Examview Test Manager, a window appears and there are available two options: Start a new class and Open an existing class. If the trainer selects the option Start a new class, the program will ask for information both about class (the working band) in general and about the instructor (teacher), as shown below:

The screenshot shows a 'New Class' dialog box with the following fields and values:

Class Information	
Class name:	Software Programming
Class ID:	(optional)
Period:	(optional)
Section:	(optional)
Password:	1234 (optional)

Instructor / School Information	
Instructor name:	Mrs. Mihaela Iordache
Instructor ID:	(optional)
Instructor Email:	(optional)
School name:	Romanian-American University
School ID:	(optional)
City:	Bucuresti
State/Region:	RO

Buttons: Help, OK, Cancel, Preferences...

Further, the software program will open a window in which should be added, at a time the students. To add a student in the class select the Student from the main menu and then click the option Add new student. In the window shall be completed all data about a student. To add a new student the professor must click the Next button. When the instructor finished the entered data about all learners then click on OK button. If it is desired the introduction of more details about a student, this is done by pressing More button. To add a test team work (class, group, etc.) it is selected Assignment from the main menu, the option Create New Assignment and it will open a window.

New Assignment

The ExamView Test Manager allows you to track student test results. To collect the results, you need to create a test assignment.

Step 1: Enter the assignment name, ID, category, term, and date.

Assignment name:

Assignment ID: (optional)

Category: Test (dropdown menu open showing: Benchmark, Exam, Homework, Pop Quiz, Quiz, Test)

Term:

You can administer this test using the Internet, or for a local area network, or other methods.

Step 2: Select the way(s) the test will be administered.

☐ Paper test scored manually, with a scanner, or with CPS response pads

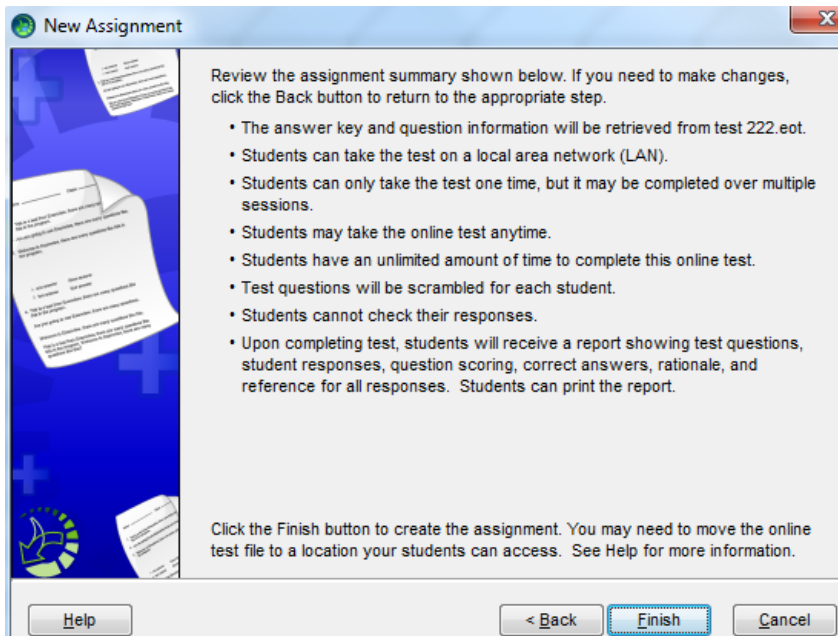
☐ Online test delivered over a local area network (LAN)

☐ Online test published to the ExamView Learning & Test Center website

[Help](#) [< Back](#) [Next >](#) [Cancel](#)

At the first step from the wizard the user will enter the name of the evaluation object and in the section category it will select one of the options, depending on the level of assessment established (benchmark exam, homework, pop quiz, quiz, test). The step 2 allows determining how the assessment will be administered (both "data collection" by the teacher as well as the way of solving the test by the students). The answers can be entered into the system: manual through scanning (first option from step 2) using a local network (the second option) and / or via the Internet using the website of the Examview Learning & Test Center. After selecting options the professor click the Next button. Step 3 provides the possibility of choosing the test from the available tests from Tests folder. By pressing the button Preview Test can be visualized the questions from test. Also at this stage it can be select how the students can complete the test. Thus, the test can be completed more than once and/or more "session". Furthermore, it must be select the Next button. Step 4 allows user to choose a password, this being useful when the test is used to access by the students. Step 5 provides the possibility of determining the time in which students can access the test. Also, the students can see the test results immediately or after a time specified by the teacher. Step 6 determines the time allocated for the test. Thus, the teacher can select the test to be active for a certain period (with / without the possibility of taking pause during it), or there is limited time. Step 7 allows establishing the order of the test questions. Thus, we can choose that all students have the same order of questions or for each student they are "mixed". Step 8 allows the examiner to determine whether or not the students have the right to verify the answers given during the test. Step 9 gives the examiner the opportunity to determine the information that will be shown to the student at the end of the test. The students may not receive a response, can receive only one note (or percentage) or in addition the other information determined by the teacher.

In the end, the software provides to the user a summary of the settings made by him.



5. SOLVING THE TEST BY THE STUDENTS AND IMPORTING THE RESULTS

To solve a test the students must open the Examview Player and follow the next steps: the user (the student) will type the name and ID established by the teacher; select the desired test Tests folder, enter the password, if the test was provided with this option; provides a review of the information entered by the student, the student solves the test and send the results to the examiner. In the same way all students of the group will proceed.

To import the tests results the professor should select the Examview Test Manager program. He opens the virtual classroom (if it is not already open) and selects one option as it is shown in the below figure, according to the distribution of the test:

- Get results from the scanner;
- Get results from CPS (Classroom Performance System) Respond Pads;
- Get results from Local Area Network (LAN) test;
- Get results from internet test.



Get results from scanner



Get results from CPS Respond Pads



Get results from LAN test



Get responds from internet test

Sample Class.cls - ExamView Test Manager

File Edit View Student Assignment Report Help

100%

Romanian-American University
Software Programming
Mrs. Mihaela Iordache

		Quiz 01	Test 01	Test 11
		09/03 Quiz Term 1 15 pts	09/10 Test Term 1 40 pts	02/21 Test Term 1 14 pts
Name ▼	Student ID	Score	Score	Score
Aber, Alexander	1001	93.3%	87.5%	--
Boehl, Norman	1002	86.7%	75%	--
Coston, Denise	1003	73.3%	95%	--
Gibbons, Roderick	1004	86.7%	82.5%	--
Henderson, Sherman	1005	86.7%	90%	--
Hutter, Jean	1006	66.7%	80%	--
Izquierdo, Rosa	1007	86.7%	97.5%	--
Karthus, Detlef	1008	93.3%	82.5%	--
Kretten, Carl	1009	93.3%	80%	--
Loeffle, Karsten	1010	80%	95%	--
Matsui, Etsuko	1011	86.7%	100%	--
McDowell, Geraldine	1012	86.7%	87.5%	--
Muñoz, Isabel	1013	93.3%	87.5%	--
O'Neill, Brian	1014	80%	67.5%	--
Pitzer, Debbie	1015	73.3%	87.5%	--
Rhodes, Jackie	1016	80%	90%	--
Saarinén, Esa	1017	80%	75%	--
Wallace, Jeff	1018	93.3%	90%	--
Average		84.4%	86.1%	--

18 students, 3 assignments

New Student... New Assignment... Edit... Delete

To change or edit the test settings press the Edit button. To add a new test is chosen New Assignment button. If the teacher wants to delete a test he must press the Delete button.

6. CONCLUSION

For academic staff, e-assessment must add value to learning and teaching to warrant the change from traditional methods - e-assessment must enable learning objectives to be more fully achieved, enhance learning and assessment experiences for learners, and provide opportunities to deepen their understanding.

The ExamView Suite is a set of tools used in the evaluation of student knowledge. With its help, the trainer can perform the operations such as: creating / publishing online test (or in the local network in order to solve it by students), entering data about students (creating a "virtual classroom"), solving tests by students viewing / importing the test results by the instructor. By using the e-testing software, the teacher will save time for correction the papers, display the results and the way of interacting with the students in the evaluation process.

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9. <http://www.e-assessment.com/>
10. <http://dictionary.reference.com/browse/assess>
11. <http://www.creative-wisdom.com/teaching/assessment/reliability.html>
12. <http://www.tcexam.org/>
13. <http://www.skillsyouneed.com/ips/question-types.html>
14. <http://thesecondprinciple.com/teaching-essentials/five-basic-types-questions/>
15. <http://www.education.vic.gov.au/school/teachers/support/pages/advice.aspx#principles>