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**BETTER STUDENT LEARNING ACHIEVEMENT EVALUATION BY USING
DEDICATED FREWARE E-ASSESSMENT TOOLS**

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Abstract: *Student valuation is one of the most significant features in an education system. All the old-style assessments methods have been reshaped by the use of the computer environment, and some of the problems associated with the traditional assessment methods appear to be better treated in the new circumstances. In the field of e-assessment, the teacher can choose between numerous dedicated software, many of them freeware. The objective of this paper is to evaluate ten of the most significant programs of this kind by means of assessment tools, topics covered, ease of use, help and support. After revealing the most important features of the studied software, we have tested them on a group of junior students enrolled in computer science and environmental protection courses, and the results are commented. Not only the software performance, but the quality of the questions in the e-assessment has been evaluated by the subjects.*

Keywords: *e-assessment, assessment tools, characterisation*

I. INTRODUCTION

Information and Internet technologies are familiar presences in the field of education nowadays, and e-learning became a prominent learning environment for more than two decades [1]. The situation is even more evident in the higher education area, where the number of e-learning programs is rapidly increasing [2].

E-learning addresses all parts of education: the teaching process and the course content, the learning process, which has no more space or time limitations, the ways of communication between the teacher and the students and between the students themselves, and, of course, the learning achievement assessment process [3]. Student valuation is one of the most significant features in an education system [4]. All the old-style assessments ways have been reshaped by the use of the computer environment, and some of the problems associated with the traditional assessment methods, such as difficult to control conditions (i.e., tiredness, preference) appear to be better treated in the new circumstances. The use of technology leads to better test administration, more efficient ways to link each learner to appropriate learning tasks, on the basis of test results and can offer the teacher regular reports on the development of his learners [5].

II. ASSESSMENT IN E-LEARNING

One of the most comprehensive definition of assessment of student learning was given by Huba and Freed [6]: “Assessment is the process of gathering and discussing information from multiple and diverse sources in order to develop a deep understanding of what students know, understand, and

can do with their knowledge as a result of their educational experiences; the process culminates when assessment results are used to improve subsequent learning”. Palombra and Banta [7] define it as “the systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development”, and identify the two types of assessment: the summative assessment, that evaluates the course quality and is given after the course is finished and the formative assessment, which takes place during the course, offering feedback to improve student learning.

The assessment of knowledge is one of the most significant parts in any education system, as by means of a suitable assessment approach the real measure of student performance can be found and ways to improve student learning and courses or academic programs may be identified. It is largely accepted that correctly established assessment activities are bound to improve student learning and enhance their commitment to knowledge achievement [8].

The assessment is a vital piece to guarantee that a learning process achieves its learning goals, and, in addition, an essential way of providing the needed evidence to obtaining and preserving accreditation [9]. The main objectives of an assessment are: determination of teaching goal achievement; recognition and removal of blockages in learning; student motivation; self-improvement encouragement; new means of communication among faculty, students, and administrators [10].

In Internet era, technology plays a significant role in assisting assessment for learning. The assessment goals are common to the classical and the Web-based courses, but the means to achieve them can be different. In the second case, the content of the assessment, created by the teacher, is delivered via the Internet, and the student submits answers to the teacher, which evaluates the submission and grades it, as it is showed in Figure 1.

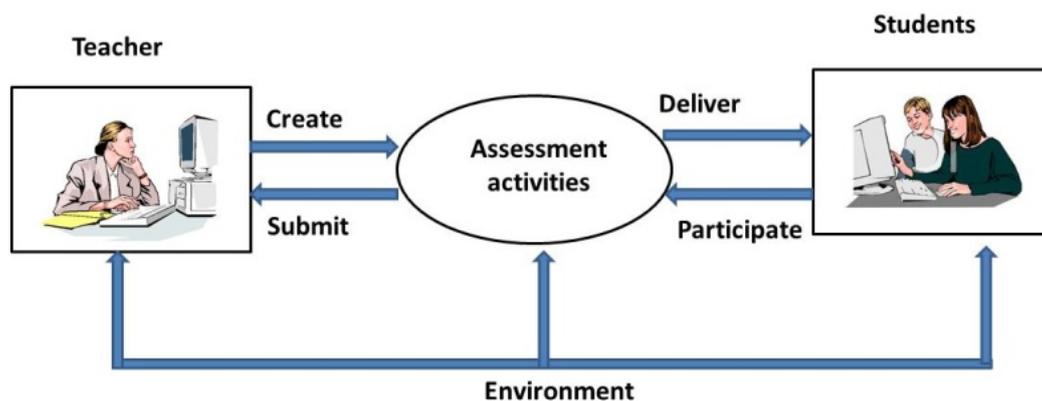


Figure 1. Student Assessment in a Web-Based Learning Environment (adapted from Aggarval [4])

A major advantage of the web delivered assessment is the ability to include a wide variety of multimedia material, such as graphics, animations, video, audio, simulations [11]. Even so, a study made in England in 2009 revealed that only four in ten teachers use technology to create or administer assessment [12].

III. FREE QUIZ MAKING TOOL COMPARISON

Quizzes are usually used in the e-learning knowledge assessment process [13]. In the field of e-assessment, the teacher can choose between many dedicated software, several of them freeware. The objective of this paper is to evaluate ten of the most significant programs of this kind (ProProfs Quiz Maker, Wondershare QuizCreator, Classmarker, Multiple Choice Quiz Maker, MyQuizCreator, Atrixware Flash Quiz Maker 9.0, eQuizzer, Qedoc Quiz Maker, Match-up quiz Generator and EasyTestMaker), by means of assessment tools, topics covered, ease of use, help and support.

The main characteristics of these programs are summarized in table 1.

Table 1. Quizmaker characteristics

	ProProfs Quiz Maker	Wondershare QuizCreator	Classmarker	Multiple Choice Quiz Maker	MyQuizCreator	Atrixware Flash Quiz Maker	eQuizer	Qedoc Quiz Maker	Match-up quiz Generator	EasyTestMaker
Quizmaker type										
• Online	x	-	x	-	x	-	x	-	-	x
• Software	-	x	-	x	-	x	-	x	x	-
Quiz type										
• Online	√	√	√	√	√	√	√	√	-	√
• Publishable (nr. of formats)	-	5	-	3	-	2	-	2	1	-
Quiz options										
• Multiple choice	√	√	√	√	√	√	√	√	-	√
• Matching	-	√	-	-	-	√	√	-	√	√
• Short answer	√	√	√	-	-	-	√	√	-	√
• Fill in the blank	√	√	-	-	-	√	√	-	-	√
• Negative points	-	√	-	-	-	-	-	-	-	-
Multimedia integration										
• Images	√	√	√	√	-	√	-	√	-	-
• Audio	-	√	-	√	-	-	-	√	-	-
• Video	√	√	√	-	-	-	-	-	-	-
Additional features										
• Questions randomization	-	√	√	√	-	√	-	-	-	√
• Performance Feedback	√	√	√	√	-	√	√	√	-	-
• Answer Explanations	-	-	-	-	-	-	-	-	-	-
• Test-takers statistics	√	√	√	-	-	-	-	-	-	-
• Quiz Management System	√	√	√	-	-	-	-	-	-	-
• AICC/SCORM compliance	-	√	-	-	-	√	-	-	-	-
• Ease of use*	4	4	3	3	5	3	4	2	5	4
• Clear interface*	5	4	4	4	5	3	4	2	4	4
Help/Support										
• Help file	√	√	√	√	-	√	-	-	-	-
• Product Manual	-	-	-	-	-	-	-	-	-	-
• FAQ/Help Section	√	√	√	√	-	√	√	√	-	√
• Support Center	-	√	-	-	-	-	-	-	-	-
Supported Configurations										
• Windows XP	-	√	-	√	-	√	-	√	√	-
• Windows Vista	-	√	-	√	-	√	-	√	√	-
• Windows 7	-	√	-	√	-	√	-	√	√	-
Payment options										
• Freeware	-	-	-	-	√	-	√	√	√	√
• Trial period (days)	7	15	-	30	-	15	-	-	-	-

* 5 = Best; 1 = worst

It must be said that some programs are not actually freeware (such as ProProfs QuizMaker, ClassMarker) [14,15,17,19], but they offer functional versions for a limited period of time, or even

have free versions with limited options. The freeware web-based quizzing programs, such as eQuizzer, insert advertisements that can be removed only if a fee is paid [20]. The single absolutely free program is Quedoc Quiz maker, unfortunately one of the most difficult to use quiz maker [21].

Even though all the analysed programs are dedicated to Windows platform, there are some quiz making programs for Mac, such as iQuiz Maker and Quiz Creator [15, 24].

IV. STUDENT PERCEPTION OF THE ASSESSMENT EFFECTIVENESS

After revealing the most important features of the studied software, we have tested them on a group of 100 junior students of computer science discipline, e-marketing and environmental protection, and the results are commented. The students, that were aged 20 to 45, had to take classical test (on paper) and Web-based tests. The number of questions was the same, with similar difficulty level. The results have been very close, indicating the same outcomes, but about 81 % of students preferred taking the tests via the Web. It can be seen from figure 2 that almost all the students under 30 preferred the Web-based tests, and more then 75% of the more mature ones preferred the on paper tests.

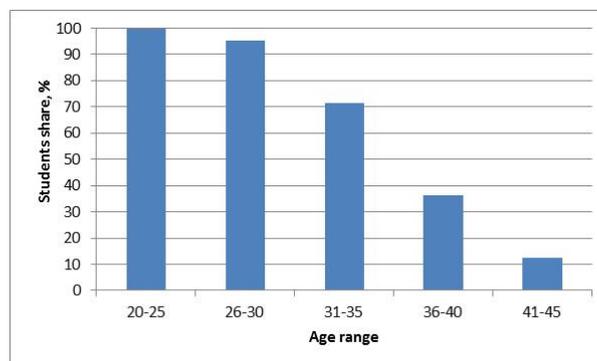


Figure 2. Distribution of students' preferences regarding the assessment type

The students that preferred the web-based tests have been questioned about the type of software that they think it provides most convenient test and the results are depicted in figure 3.

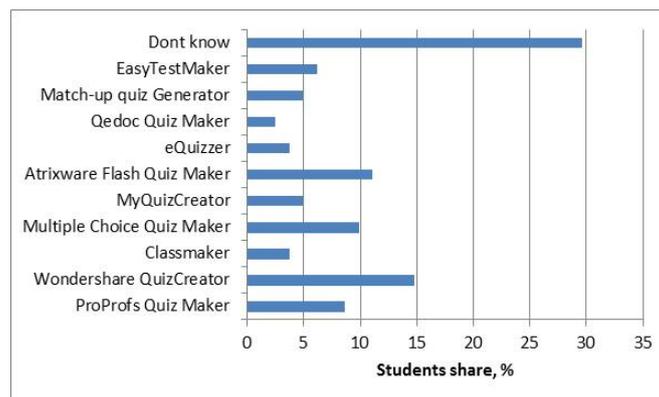


Figure 3

Most of the students (29%) showed no preference; the rest indicated Wondershare QuizCreator (14%) and Atrixware Flash Quiz Maker (12%) as best software to produce e-quizzes.

Not only the software performance, but the quality of the questions in the e-assessment has been evaluated by the subjects.

Some of the students observed that some questions in the test were too easy, because, besides the right answer, the other variants were obviously wrong. On the other hand, there were students that complained about the difficulty to make the wright choice, as there were trick questions in the test.

Another number of students complained about the number of choices implied by each question. When asked particularly about this matter, half of that indicated that they prefer only two choices by question, 30% indicated three choices, and only 20% of that considered that four choices (as it has been used in the actual test) are acceptable.

Many of the students remarked that they prefer the content of the question to be very clear and as short as possible.

V. CONCLUSIONS

This paper presented an overview to the quiz making possibilities presently existing, by highlighting the most important features, the positive aspects and also the existing shortcomings. Junior students have best asked about their assessment preferences, and their response was strongly influenced by their age: over 98% of the students under 30 preferred the Web-based tests, and more than 75% of the more mature ones preferred the on paper tests. In what concerns the type of the quiz maker used, many of the students showed no preference.

Acknowledgements

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