

Reference Center for Self-assessment and Assessment in e-Learning

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Established one year ago as a CARNet project, our Reference Center aims to assist staff in higher education with the development and implementation of computer-assisted assessment (CAA). We are physically located at the University of Zagreb, School of Medicine, and virtually at <http://www.carnet.hr/referalni/obrazovni/spzit>. We offer extensive knowledge and resources for self-assessment and assessment in e-learning. Their nature allows the automation of what was previously a very time-consuming task: that is, marking and monitoring progress.

The goal of our Reference Center is to highlight current possibilities to build CAA for distance learning. There are many choices of approach for on-line assessing students. It is not possible to talk about the relative effectiveness of exam system, without considering the environment in which they are designed to operate.

The assessments can be used for three broad purposes: to assist in a learning process, to measure individual achievement, and to evaluate programs. Further, the self-test guides students in a self-analysis of their own learning processes.

Educational assessment is a major feature of the educational process. Although at first glance vocal unconvincingly, the level and the quality of student knowledge is not determined by teaching process per se, but by the system of examination! Assessment is a critical component of effective learning and teaching. It is a learning experience for students and can achieve a considerable degree of improvement in student learning if used appropriately.

The nature of assessments can be diagnostic – to determine students' knowledge prior to starting a course. They can be formative and include ongoing feedback either during the assessment or after. Further they may be 'scored formative', allowing ongoing comparison of a student's progress over a period of time, possibly replacing an end-of-term summative assessment. Formative assessment supports learning and assists students to develop the skills necessary to become lifelong learners. Assessment is important because students learn what is assessed. They generally consider that topics assessed are the most important, both intellectually and for the purpose of achieving better marks. Also, the ability to accurately assess one's strengths and weaknesses is critical to the enterprise of lifelong learning. In addition, online quizzes allow instructors to create feedback to the specific incorrect answer choice. The use of immediate feedback, making students aware of what they do not know, increases understanding of the material. Such quizzes can be used at the beginning of a course for diagnostic purposes to indicate any areas where prerequisite knowledge may be inadequate, during the course to measure progress in understanding, or at the end of a course to assist in revision. Background knowledge assessments can be used at the beginning of a course, at the start of a new unit or lesson, or prior to introducing an important new topic. This data can be very useful when planning subsequent sessions or units of the course. Although many classroom assessment activities can be done for credit, it is usually best to make these probes an ungraded activity. Alternatively, assessments may be summative, contributing to a student's end-of-year mark.

The assessments can vary in format: either consisting of a pre-printed paper test on to which students mark their responses, which are then processed automatically using an optical mark reader; or involving the direct input of students' responses into a computer terminal through the keyboard. Optical mark readers are easy to use devices that enable data to be entered fast and accurately into a computer throughout form, without using the keyboard.

CAA may be stand alone and specific to certain machines within a computer lab; based on a local network (intranet); or, as is increasingly common, internet based.

The tests can be either supervised or non-supervised, with the option of allowing students to check their own progress through self-assessment. Although more commonly used for testing lower-order skills (such as knowledge, understanding and application), when properly formulated they can also be used for testing higher-order skills (analysis, synthesis and evaluation).

There are many tools for creating CAA. Essentially there are two approaches: (i) program them yourself, using a scripting language such as Perl or Java, or (ii) make use of an open source software tool which can automatically generate the code for you. An alternative approach is to purchase one of the growing numbers of commercial software tools.

Armed with information and with our experience and guidance, you can begin to introduce CAA into your curriculum. We're here to help you understand the basic steps in developing a successful e-learning initiative, which will help save you stress, time and money in the long run. Don't feel you have to rush into using these techniques in every class or during every session. Begin slowly! The hardest part of this process is creating good questions themselves, not the stage where you put them up on the web. Now the time has come to computerize pen and paper tests!

The Center is constantly expanding its web site to provide up to date information and guidance on the use of CAA in higher education. Digital technology has the ability to revolutionize the way people learn as well as the teaching process.