

Internet Examination – A New Tool in e-Learning

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Abstract—Internet examination is a new innovation in e-learning. Internet examination extends the virtual mobility from the learning process to the examination of the students' knowledge on the course topic. Internet examination has pedagogical benefits also in the case where the students are on the site of teaching. The paper is based on the experience we have obtained at the Ragnar Granit Institute.

Keywords— e-learning, Internet.

I. INTRODUCTION

Internet is more and more frequently used in education. Its benefits in distant learning and as a support in classroom learning are already widely acknowledged. We have used Internet examination in the ordinary teaching in the Institute and in the courses given by the author in other universities in Finland and abroad [1]. We apply it also in the European EVICAB project [2]. In this paper we introduce the use of Internet as a platform for course examinations and assess its benefits and drawbacks.

II. FORM OF THE INTERNET EXAMINATION

During the examination the students may use all the material available on the Internet, including the course book. The only thing which is not allowed is communicating with other persons with e-mail or other means. This changes the style of the questions: In ordinary examinations, where the students may not have the material available, it is more tested whether the students remember certain details from the course. In an Internet examination, where all material is at hand, the examination tests whether the students have fully understood the concepts and have the ability to combine various issues and to give rationales for their conclusions. The latter method corresponds more closely with the professional skills what the students need when they move to the working life.

Depending on whether the course is part of the degree studies or supplementary education, the students participate in the examination in different way.

In a degree studies examination the students take the examination in a computer class. Their identity is checked and the supervising assistant controls that the students log on the

examination with their own name. It is also important to have a list of the participating students so that no student outside the classroom may participate in the controlled examination.

If the students are from several universities, the examination may be arranged in their home university at the same time provided that the aforementioned conditions are ensured.

In supplementary education examination the students may take the exam anywhere because there is no need to control their identity. This is one important feature of the Internet examination. In supplementary education courses, arranged for instance in connection with international scientific congresses, the students may be from several countries and different cities and universities. Because the examination is usually arranged a couple of weeks after the course, arranging it on the course site would then be impossible for the students.

III. MAKING THE EXAMINATION

A. Examination style

The examination may be of any form. It may include questions with multiple choice answers, calculation tasks or essays.

A multiple choice examination is more suitable for tests performed during the course. In the final exam the calculation tasks or essays are more suitable.

In calculation tasks the Internet examination has the problem that writing equations with the computer is more time consuming and difficult and therefore only such questions may be used where the correct result is sufficient. Deriving equations by the student to the answer is practically impossible.

Writing essays is most practical from the point of view of the student. For the teacher/assistant the essays are more time consuming to check.

B. Examination classroom

The students make the examination in a computer classroom. They sign in the educational platform and open the examination question page. For Internet examination we have used the Moodle program [3].

For their answers the students open a Word file and write there their personal data and a password given by the assistant supervising the examination. The password is important to control that the examination is attended only by the students in the classroom.

The students are free to use all material available on the Internet. This is good, because then they do not need to remember all details of the topic, more important is that they understand it and are able to make conclusions. We tested the Internet examination first on our course on Bio-electromagnetism. The textbook for this course is available on the Internet [4]. This form of examination tests better the students' ability to successfully do their job in the working life.

The only thing which is not allowed for the students is communicating with any other person with e-mail or any other method.

An important feature in the Internet examination is that it may be performed simultaneously in more than one classroom locating in different universities in different cities or even different countries. This is important because the students do not need to travel for the examination.

At the end of the examination the students upload their Word file including their answers to the Moodle system.

C. Operations of the teacher

Because the students will have the Internet available, the questions should not be of the style: "What is ... ?" but rather of style "Why ... ?" or "For what purpose ... ?". Such questions measure the students' understanding of the topic of the question and ability to make conclusions.

After the examination the teacher may download the students' answers from the Moodle and print out them. It is easier for the teacher to review the answers because they are written with computer instead of unclear handwriting. One benefit is also that all the documentation from the examination is archived in the computer.

After correcting the answers and giving the grades the teacher may upload the results to Moodle or on an Internet page for the students to see them.

Because the students' answers are uploaded to the server, the teacher may easily archive them. This is an additional safety factor for the student and the teacher in case the student is not satisfied to the grade given.

Important is, that the teacher does not need to be in the examination location during the examination but all the administration of the examination may be performed from any location in the world where the Internet connection is available.

IV. CONCLUSIONS

The Internet examination is a modern way to perform the examination. Its main benefit is that it is not tied to one location but may be arranged in several different locations at the same time.

The students apparently appreciate this kind of examination more for several reasons. One, but not the only one, is that all information for finding small details on the topic of the questions is available on the Internet.

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