

# Digital exams revisited - experiences of exam visits in Finnish Higher Education Institutes

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## 1. Summary

Finnish HEIs and CSC have been developing a concept and system for digital assessment called EXAM since 2014 (e-exam.fi). In 2020 the EXAM consortium consists of 27 of 37 Finnish universities and universities of applied sciences. The Finnish HEIs wanted to deepen their co-operation, enhance student mobility and create more flexible ways for students to complete studies by sharing of resources related to the electronic examination process. By sharing resources the universities are able to reduce overlapping work, fill their own lack of resources and offer students more flexible opportunities to carry out studies and exams. At the moment, the EXAM concept is based on exams taken in standardized, supervised exam rooms and customized workstations, but vast development is going on in many levels. EXAM implementations are local, but there is now support also for cross-institutional activities e.g. EXAM visit and joint EXAM. The implementation of joint use relies on a proxy server which means that the information flows go only through a specific joint use server from a local EXAM instance to another one. Also a proxy implementation has been created to handle the IdP traffic. This way there is no need to build and open access between the local EXAMs. Currently the Finnish HEIs are deploying EXAM visits, where a student can take an exam of the "home institution" using the nearest HEI's exam facilities. In this paper we will present the results and the experiences of pilots of exam visits organized during 2019.

## 2. EXAM CONCEPT FOR ONLINE EXAMS IN FINNISH HIGHER EDUCATION INSTITUTES

### 2.1. EXAM concept

EXAM follows the Finnish HEIs' future vision for digitalization e.g. advancing the flexibility and mobility of studies for the students, cross-institutional studies, versatile assessment and life-long learning. The EXAM concept for digital assessment consists of the exam software (EXAM), customized workstations and network environment, camera-controlled exam rooms and the process to supervise the students. Compared with other online exams e.g. home exams or open books exams, these exams done in special premises can be controlled and the users are easily identified. Because students are free to choose their examination time and date (in the time range given by teacher and which varies from 1 day to 1 year) and are not taking the exam at the same time, the capacity issues are not a problem. EXAM is also integrated in the SIS systems (courses, grades) so it saves teachers' time. At the moment the services are installed on-premise or maintained by CSC.

### 2.2. EXAM visit

EXAM visit means that a student can take an exam of the "home institution" using the nearest HEI's exam facilities. In Finland it is possible to get considerable benefits from this concept, because of the long distances. Especially those online courses or programmes relying greatly on distance learning and

use electronic exams can offer better service for students. When the HEIs are networking their exam facilities for shared use, the students from all parts of Finland can participate in the studies.

### 3. PILOT PROJECT EXPERIENCES

First technical tests of the joint use of EXAM were done at the end of 2017 to ensure that the chosen technical architecture, implementation and basic data flows as well as the user identification worked as was planned. During the first actual pilots in 2018 many non-technical aspects were identified as well. Based on these the institutions formulated together agreements on the use of other institution's facilities (e.g. access control, surveillance and monitoring of student performance, instructions) and also outlined common features for accessibility for the actual exam rooms and for the service itself. Since not all facilities can be totally barrier free the institutions had to come up with a common understanding of what is accessible in the terms of exam rooms.

During the autumn term of 2019 the implementation of exam visit was broadened in the EXAM consortium, and the total number of exam visits at the end of the year was appr. 1200 exams. EXAM visit is a feature that the students have been waiting for as long as EXAM has been used and the overall experiences are very positive.

The biggest challenges are related to instructions and the variety of EXAM versions that the universities use and the differences in using the IdP attributes. In addition, the differences in the workstation set-up and the different software resources in each university can hinder the deployment of exam visit. It has been also noted that it can be difficult for the end user to understand properly the process where several universities are involved and to know who to turn to (the home university or the one you are visiting) if there are problems. So, there is a need for close cooperation between the admin users of exam service.

### 4. FUTURE STEPS

Common follow-up procedures for exam visits were introduced also at the beginning of 2020 for the institutions to be able to monitor the number of exam visits between universities and the distribution geographically, as well as the need for technical support. Based on this the EXAM consortium can better make decisions on the future development of the service. Also policies concerning the system maintenance and implementation process have to be developed further.

The workstation set-up should be more uniform to enable taking different types of exams as exam visits in all institutions participating in the joint use. A project to study different possibilities to solve this started in the Spring 2020.

The next step in the system development will be piloting the concept of a BYOD exam (Bring Your Own Device) which could be used e.g. as a final exam in lecture halls. A POC has been developed using Safe Exam Browser to control access to resources and turn the device into a secure workstation. A first pilot of the BYOD exam will be started in the Autumn 2020.

### 5. REFERENCES

EXAM website (2020). EXAM - electronic exam software for higher education. Retrieved February 20, 2020, from: <https://e-exam.fi/in-english/>

## 6. AUTHORS' BIOGRAPHIES



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