

EUNIS 2020: DIGITAL ASSESSMENT IN FINNISH AND NORWEGIAN HIGHER EDUCATION

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Keywords

Digitization, digital assessment, digital exam, electronic assessment, higher education, cross-institutional, exam premises

1. SUMMARY

As service managers for Digital Assessment services in Finland and Norway, we have made observations and experiences on cross-institutional collaboration with HEIs in our countries, as well as on the both possibilities and challenges we face in the digitization of assessment. We have found many similarities between our countries despite having different technological solutions. While CSC in Finland has developed their own system for digital assessment, Norway has Software-As-A-Service-contracts (SAAS) with international software providers. The Finnish model is based on exams taken in standardized, supervised exam premises and customized workstations whereas in Norway the exams are mainly done with personal computers (BYOD¹) with on-location supervision. This extended abstract and our following presentation will describe how we collaborate with HEIs and our experiences in digitizing the assessment processes, including current possibilities and challenges.

2. DIGITAL ASSESSMENT IN FINNISH AND NORWEGIAN HIGHER INSTITUTIONS

2.1. Model of co-operation between CSC and HEIs

During 2013-2014 small group of Finnish HEIs and CSC decided to start joint efforts to find new system for digital exams. Based on a market review, no suitable solution was available that time and they decided to start building their own system instead of acquiring one. Since then Finnish HEIs and CSC have been developing a concept and system for digital assessment called EXAM (Exam consortium, 2020). In 2020 EXAM consortium consists of 27/37 Finnish universities and universities of applied sciences. The EXAM consortium is open for any organization and the funding is mainly based on yearly fees based on development needs and consortium activities and it's formed by universities. With the help of Ministry of Education and Culture, EXAM source code was licensed under EUPL 1.1. -license. This provides opportunities to new user groups and wider development network, but so far only preliminary discussions outside HEI-network has been carried out.

Project manager (CSC) works as a product owner and closely together with a project owner group (formed of HEIs' examination officers), a consortium management group and developers from the subcontractor. A vast amount of work is done to define joint standardized processes and functionalities for the system. Service is installed on-premise and CSC is also maintaining some of the universities EXAM services.

EXAM concept for online exams in Finnish Higher Education Institutes

The Finnish EXAM concept 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-based exams, these exams done in special premises can be controlled and the users are easily identified. Because students can freely choose their examination

¹ Bring your own device

time and date (in 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 SIS systems (courses, grades) so it saves teachers' time. Now further steps are taken in advancing the flexibility of studies for the students. Exam service supports an arrangement, where a student can take an exam of the "home institution" using the nearest HEI's exam facilities.

2.2. Unit and a Norwegian HEI collaboration model

In 2016 Uninett (now Unit) chose to acquire SAAS solutions on behalf of the higher education sector, and signed framework agreements with three software providers; UNIwise, Inspera, and Enovate (Unit The directorate for ICT and joint services in higher education and research, 2019). Unit provides national coordination and close collaboration on development of functionality and integrations with the HEIs and providers. Project managers and examination office workers at the HEIs collaborate on defining joint standardized workflows and development projects. We see that operating as one large united client grants higher priority and lower total development cost. Currently, 25 HEIs in Norway are part of the national collaboration on digital assessment, and the national coordination service and joint development projects is financed by the HEI members through a yearly service fee.

Digital assessment systems in Norwegian HEIs

While Unit offers framework agreements with three different providers, Norwegian HEIs ended up choosing either WISEflow (UNIwise) or Inspera Assessment (Inspera). The two systems are web-based and have integrations with the Student Information System (SIS), Felles Studentsystem (FS), which is used by all the HEIs. For closed-book exams, the systems require locked-down browser software. The HEIs mostly choose to conduct digital exams on campus using BYOD in large halls or rooms under supervision from invigilators and aid from IT support. Some of the larger HEIs in Norway have established "exam factories" which are available throughout the year, allowing the institutions to conduct exams at any point during the semester (course exam dates are not flexible for students). This provides the institutions with more flexibility in planning and conducting exams, especially with large course combinations.

3. COMPARING FINLAND AND NORWAY

Despite having very different software solutions for digital assessment, we have found that we face the same challenges in Finland and Norway. Especially supporting digital assessment for maths and sciences we have seen is difficult to develop quality solutions. Furthermore, harmonizing and standardization of complex workflows, in order to develop quality software or integrations, is often very time-consuming as the HEIs all have to agree on joint workflows. In addition, securing commitment among stakeholders also delays the process, as stakeholders at different levels must be involved in the decision-making. Using a SAAS-solution means that Unit and Norwegian HEIs have to inline their development with the providers' roadmaps. Developing one's own system, like in Finland, you define your own roadmap.

Table 1: Challenges and possibilities

	<i>Finland</i>	<i>Norway</i>
Cons/ Challenges	<p>Functionalities to support maths and science.</p> <p>Harmonizing and standardization of processes to develop common quality software is time-consuming (different needs and processes, several SIS systems, HEI agreement and testing).</p> <p>Need and lack of other assessment forms (BYOD, exams at the same time).</p> <p>Small budget compared to needs.</p>	<p>Raaheim et al. (2019) highlight a lack of knowledge about:</p> <ul style="list-style-type: none"> • Alternative forms of assessment • How to use digital technology in an assessment <p>Harmonizing and standardization of complex workflows to develop quality integrations is time-consuming (HEI agreement and testing).</p> <p>Functionality to support maths and science.</p>

	<p>Small development volume. Mainly national collaboration.</p>	<p>Integrations with third party applications (such as Microsoft Excel, Matlab etc.) in a locked environment.</p> <p>Changes in laws/regulations requires new development in the systems (e.g. reassessment).</p> <p>Support for other assessment forms.</p> <p>Focus on digitizing closed-book exam might have stalled use of other assessment forms.</p> <p>Software providers might change focus/priority to other (new) customers internationally.</p> <p>All development must be done twice (once for each system)</p>
Pros/ Possibilities	<p>System is easy to use, and it is not complex.</p> <p>No software provider lock.</p> <p>Quick channel to get development needs and bug fixes done.</p> <p>Possibilities to advance an already widely used system for other ways of assessment (e.g. BYOD, entrance exams)</p> <p>Involvement of users and owners.</p>	<p>Automation of the test setup and management processes</p> <p>Integration with LMS</p> <p>Integration with QTI repositories</p> <p>More international collaboration</p> <p>Operating as a large united national customer, gaining higher priority and lower total cost.</p> <p>Software providers push Norwegian HEIs to use other assessment forms and think differently about assessment.</p>

4. REFERENCES

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