

E-Assessment and Bring Your Own Device - Handout

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Abstract

Following the trend of digitalization in university education, lectures and accompanying exercises and tutorials incorporate more and more digital components. These digital components spread from the usage of computers and tablets in tutorials to incorporating online learning management systems into the lectures. Despite e-Assessment being a valuable component in form of self-tests and formative assessment, the trend of digitalization has not yet been transferred on examinations. That is among other things caused by financial reasons, because maintaining a suitable IT-infrastructure for e-Assessment is expensive in terms of money as well as administrative effort. Bring Your Own Device is a potential solution to this issue, but also poses new challenges regarding the integrity of examinations. Therefore, we propose a framework for e-Assessment that tackles these challenges.

1 Framework for e-Assessment

To be able to successfully establish e-Assessment for institutes of higher education, reliability and security are of high importance, especially when it comes to e-Assessment on students' devices (BYOD), but also acceptance of e-Assessment among teachers and students is crucial. The latter is obviously affected by reliability and security, but also fairness has an impact on the acceptance. A high diversity throughout students' devices could lead to unfair examinations due to differences in processing power and main memory. Therefore, we developed a server infrastructure, which undertakes computationally intensive tasks. The students' devices act as so called thin clients in this setting. In programming courses, for example, sources are not compiled on the students' devices, but are sent to a server, built there and the results are then sent back. Also, the students' solutions for the assignments of an examination are stored on a server. The stored data has to be reliable, which

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means that it cannot be tampered after the examination has ended and also each set of solutions has to be unambiguously relatable to a particular student. In [2] we propose a solution to this type of reliable storage. Additional to reliable storage of important data, it must not be possible to cheat during an examination. This is especially important when doing BYOD, because in this scenario students could prepare their devices prior to an examination. In [1] we propose a new approach to software that can be deployed and used throughout an examination on the students' devices, which prevents cheating.

Our ongoing research will not only cover the previously described technical measures, but will also contain a set of recommendations to institutes of higher education, which concern the IT infrastructure and identity management of these institutes.

References

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