

Adaptive and Gamified Learning Technologies to Support Motivation and Engagement

Supervisors: Zacharoula Papamitsiou, Michail Giannakos, Alf Inge Wang

Place: LCI Lab: <https://lci.idi.ntnu.no/>

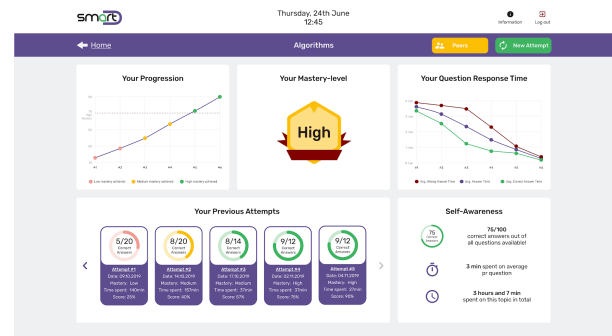
Suitable for: One or Two students

Introduction

The focus of the thesis is to combine gamification and adaptive capabilities to support students' motivation and engagement.

Thesis Description

In a first step, the student(s) need(s) to review the literature and familiarize themselves with the adaptive assessment system (PHP, MySQL) and the various gamification techniques. Then, the candidate will implement gamification capabilities based on the best practices found and adapted from the literature. Afterwards, the candidate will conduct a user study in order to empirically test the proposed system. Finally, the candidate will analyse the collected data and write up his/her thesis.



Requirements

The ideal candidate will have a background in user experience and interface design. Solid front-end programming skills (JavaScript and CSS) and an interest in hands-on development and experimentation is also a requirement.

Programming skills: PHP, MySQL, JavaScript, CSS.

Expected Project Work Packages

1. **WP:** Literature study on learning technology interfaces.
2. **WP:** Setting up the working environment and getting familiar with the code of the adaptive learning assessment system.
3. **WP:** Implement interfaces to improve learners' experience and utilize systems features.
4. **WP:** Conduct user studies, collect empirical data and analyze them.
5. **WP:** Write-up the thesis.

Thesis grading scheme

Grade	Description of the evaluation criteria
A	The candidate demonstrates excellent judgement and a high degree of independent thinking. Significantly exceeded expectations with original contribution.
B	The candidate demonstrates sound judgement and a very good degree of independent thinking. A very good performance, the candidate has exceeded expectations.

C	A good performance in most areas. The candidate demonstrates a reasonable degree of judgement and independent thinking in the most important areas, the expectations are met but not surpassed.
D	A satisfactory performance, but with significant shortcomings. The candidate demonstrates a limited degree of judgement and independent thinking.
E	A performance that meets the minimum criteria, but no more. The candidate demonstrates a very limited degree of judgement and independent thinking.
F	A performance that does not meet the minimum academic criteria. The candidate demonstrates an absence of both judgement and independent thinking.