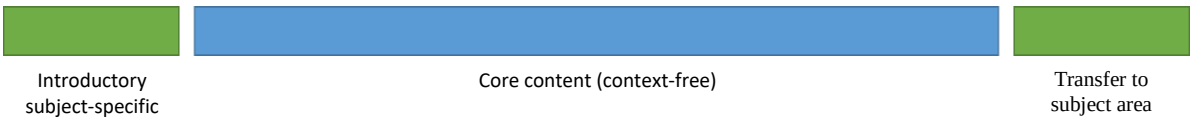
Modular Flipped Classroom

Description

Digital learning technologies facilitate innovative teaching methods in higher education. One such method is the "Flipped Classroom". Learning content that is usually covered in a traditional lecture is made available online in the form of video tutorials. After watching the videos, students have the opportunity to ask questions in consultation hours (online or in person) and actively explore the concepts by means of guided exercises.

Lectures in computer science are increasingly being taken in other courses of study. It is desirable for students to learn about computer science concepts using examples from their subject area. However, the Department of Computer Science does not have the resources to offer a lecture on a specific subject several times.

The goal of this thesis is to develop a modular "Flipped Classroom" system. One chapter of the lecture is to be motivated by a subject-specific example, then the general concepts are to be developed step by step using a generally understandable, non-subject-specific example, and the introductory example will only be taken up again at the end. This leads to subject-specific, accompanying exercises. Thus, the core of each chapter can be used in different study programs and only the motivating introduction and relation of the concepts to the subject at the end have to be produced anew.



The system will be developed and evaluated on an introductory course in software engineering for integration into the "Medical Data Science" study program. The learning content is based on a standard textbook. Lecture slides and learning materials to be adapted exist.

Task

Research and evaluation of concepts for the realization of the modular flipped classroom system. Implementation of the selected concept using the example of the lecture "Introduction to Software Engineering / Applied Software Engineering" for the course of studies "Medical Data Science".

Helpful prerequisites

The prerequisites are not mandatory, but make it easier to complete the Master's thesis.

- MSc Informatik (mit Anwendungsfach Medizin). MSc Media Informatics or Software System Engineering
- Good Knowlledge in Software Engineering
- Lecture „Learning Technologies“

Kontakt

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