

#04 TEL MARKETPLACE INNOVATIONS – PART 2

Audience Response System "Quiz it up" and Flipped Classroom for Electronic Circuit Design

As part of the "TEL Marketplace" project, researchers and teachers at Graz University of Technology were asked to submit joint teaching and learning projects. Selected pilot groups were supported in applying new concepts of technology-enhanced teaching in everyday teaching practice, evaluating them and further developing them together with students. A Flipped Classroom concept and Quiz it up are results of this collaboration.

Flipped Classroom for Electronic Circuit Design

The Flipped Classroom Concept

Its interactive content and the flipped classroom concept make the course "Electronic Circuit Design" fit for the digital age. These strategies were applied in a practical with 25 students and a lecture with 120 students. The interactive videos and exercises were prepared and created in the TU Graz TeachCenter.



You can find further information in the article "Flipped Classroom" in the Didactics section.

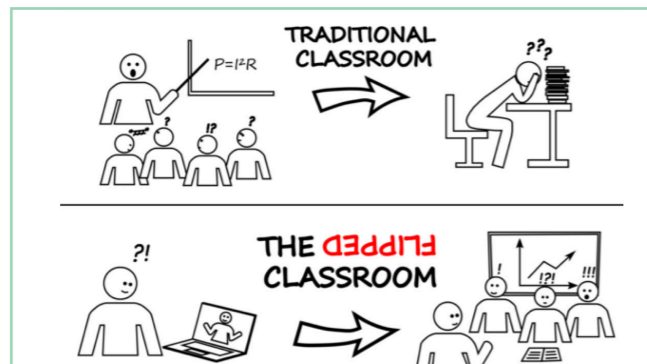
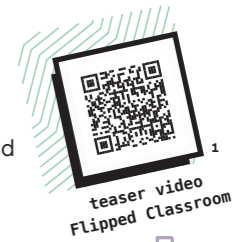


Fig. 1: Flipped Classroom CC BY Michael Fuchs

Experiences in the Flipped Classroom Concept for Electronic Circuit Design

- A flipped classroom is usually more suitable for a practical course than a lecture. However, with an appropriate preparation of the interactive content, flipping is surely also possible in lectures with a large number of students.

- Communication with students about the method before and during the course helps to assess the effectiveness and increase the acceptance of the approach. In this case, a teaser video was shared with the students to introduce the concept.
- The lessons, interactive content and quizzes were openly licensed to ensure reusability for other courses and teachers.



teaser video Flipped Classroom 1



You can find further information in the article "OER – Open Educational Resources" in the Higher Education section.

The project has been extensively evaluated. In addition to the standard course evaluation with additional questions about flipped classroom, the evaluation was also conducted with the help of focus groups in class and additional questionnaires on TELInnovation.

- The result shows that the students widely supported the concept.
- There are great advantages when the different knowledge levels of the students need to be balanced or when there is the need for cross-curricular teaching.
- In the opinion of students, the flipped classroom contributed to better learning outcomes and made the course more exciting.
- However, the change was also experienced as unexpected and difficult by some students.

Info:

If you are also interested in a flipped classroom concept and still need help with the planning, please contact elearning@tugraz.at

Further information about flipped classrooms can be found in the Learning Toolbox at <https://api.ltb.io/show/BEUKO>

Benefits of Quiz it up

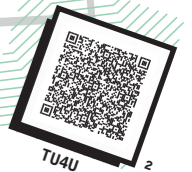
What does the tool offer?

Quiz it up is a TeachCenter plug-in with which interactive quizzes can be created for targeted revision. Students can also add and discuss quiz questions themselves. Different question formats like single choice, multiple choice or multiple choice with pictures are available. After answering the questions, students can compare their progress with their colleagues in an anonymous ranking. The tool was tested in the course "Basics of Analytical Chemistry" in the summer semester 2020.

Benefits of Quiz it up

Benefits for Teachers:

- The manual provides detailed instructions on how to meaningfully embed an audience interaction tool such as Quiz It Up in the didactic process to bridge the time between lecture and exam or to offer subsequent exercise, and includes an idea for the design of student-teacher-question time.



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You can find further information in the article "Audience Response Systems" in the Didactics section.

1 https://www.youtube.com/watch?v=c0AXJBeEj_I (available in German)

2 <https://tu4u.tugraz.at/studierende/unsere-tu-graz/lehre/dialog-formate/barcamp-digitale-tu-graz-marketplace/tel-marketplace-ausgewaehlte-pilotprojekte-im-studienjahr-20192020/#c293487> (available in German)




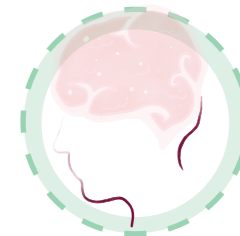
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PART 2

TEL MARKETPLACE INNOVATIONS

Audience Response System "Quiz it up"
and Flipped Classroom for Electronic
Circuit Design

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- Communication with students about the course topics can be encouraged by the possibility to ask anonymous questions.
- The plug-in serves to enhance the lessons in a playful way.
- Examination questions or exercise questions can be created based on learning objectives, which promotes targeted practice.
- The questions that students add during their learning phases can be used to supplement exam questions.
- The plug-in conforms to data protection regulations as the presentation of results is anonymous.

Benefits for Students:

- Between the end of the course and the examination date, contents can be reviewed in a playful manner.
- Students have the opportunity to ask questions anonymously.



You can find further information in the article "Feedback" in Tools section.

Access for Lecturers and Students

Quiz it Up can be used directly in a TeachCenter course. If you are interested, please send an e-mail to elearning@tugraz.at. To access the already existing quizzes (from the field of analytical chemistry) please contact Torsten Mayr (torsten.mayr@tugraz.at).

If you have any further question about the tools, feel free to contact tel.marketplace@tugraz.at.

Info:

A tutorial and a manual for the plug-in can be found in the Learning Toolbox at <https://api.ltb.io/show/BOUNP>



Fig. 2: Use of Quiz it up in the course „Basics of Analytical Chemistry“.



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You can find further information on

³ <http://tu4u.tugraz.at/go/QuizitUp> (available in German)