

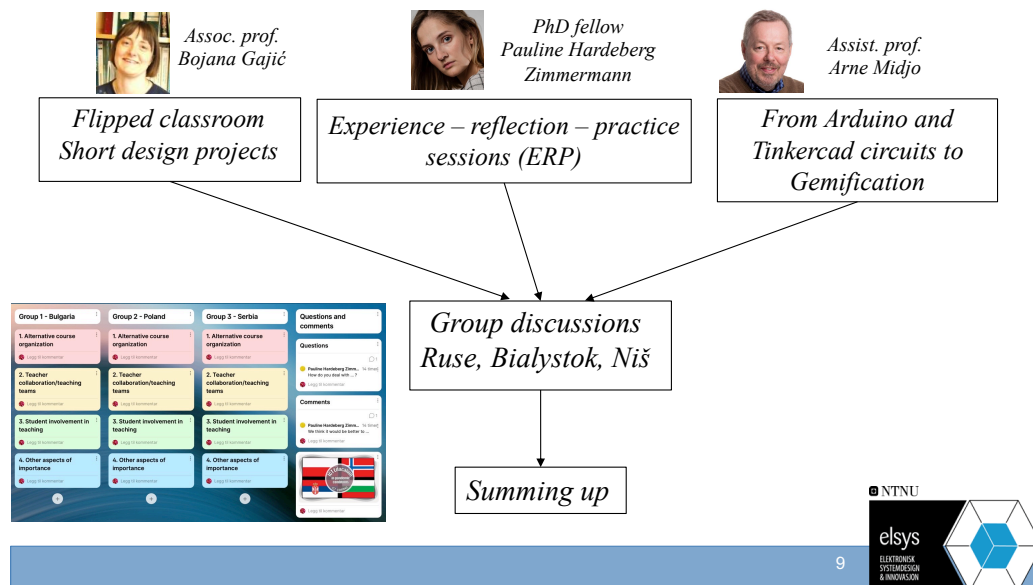


Toolbox for innovative engineering education

NTNUs 2nd Workshop on Innovative Education, 25.10.2021

The document gives an overview of the workshop content with associated timeline in the video recording. Some useful links are found at the end. The workshop was organized by Department of Electronic Systems at Norwegian University of Science and Technology (NTNU) in the scope of Erasmus+ project Project ICT_EDUPAND nr 2020-1-PL01-KA226-HE-096196.

Workshop overview



Timeline

00:00:00

Content (presenters)

Workshop overview

00:01:47

Teaching tools in Electronic System Design and Analysis courses (ESDA) (assoc. prof. Bojana Gajić)

- flipped classroom (video lectures and concept discussions)
- integrated computational and laboratory exercises
- short design projects with training of engineering communication
- personal laboratory equipment

00:20:10

Q&A

- More details about the student response systems
- Who reviews the technical notes?
- Number of students, individual and team work



- 00:25:20 Teaching tools in Introduction to Analog and Digital Electronics (ADE) (PhD fellow Pauline Hardeberg Zimmermann)**
- Experience Reflection and Training (ERP) Sessions
 - Reflections and discussions
 - Learning assistant organization
- 00:34:20 Q&A**
- How do you engage students as learning assistants?
 - How many working hours per week do learning assistants have?
 - Differences between the new and the old course. Why is the new course beneficial?
- 00:44:12 Teaching tools in bachelor course Computer Engineering (assist. prof. Arne Midjo)**
- From traditional programming course to gamification
 - Challenges related to teaching programming
 - Starting point: Traditional teaching and its downsides
 - Step 1: Adding Arduino startup kit
 - Step 2: Introducing ThinkerCAD circuits, flipped classroom and PBL
 - Step 3: Gamification ("Virtuino")
- 01:04:17 Intro to Group work with Padlet (PhD fellow Pauline Hardeberg Zimmermann)**
Padlet link: <https://padlet.com/paulinehardeberg1/ocyfg524h4v4t14s>
- 01:06:45 Summary of group discussions**
- 01:07:07 Serbia (prof. Goran Djordjević)
 - 01:10:04 Poland (prof. Jaroslaw Makal)
 - 01:15:31 Bulgaria (prof. Teodor Ilev)
- 01:20:22 Concluding the workshop**
- Further explanation about Unity

Related links

- Study programs
 - Electronic System Design and Innovation, 5-year master's degree programme www.ntnu.edu/studies/mtelsys
 - Electrical Engineering, 3-year bachelor's degree programme www.ntnu.edu/studies/bielektro
 - Electronic System design, 2-year master's degree programme www.ntnu.edu/studies/mselsys
- Course descriptions
 - Introduction to Analog and Digital Electronics (ADE) www.ntnu.edu/studies/courses/TTT4203
 - Electronic System Design and Analysis I (ESDA 1) www.ntnu.edu/studies/courses/TTT4260
 - Electronic System Design and Analysis II (ESDA 2) www.ntnu.edu/studies/courses/TTT4265
 - Computer Engineering (for 3-year Bachelor program in Electrical Engineering) www.ntnu.edu/studies/courses/IELET1002
- Padlet digital interactive board: padlet.com
- Mentimeter tool for interactive lectures (polls, quizzes, word clouds): mentimeter.com
- Piazza Q&A platform: piazza.com



- Unity game development platform: unity.com