DESIGNING THE FUTURE: A **CBL** POSTER MARKET

ABOUT IT

Welcome to the walk-in session "Designing the Future: A Challenge-based Learning Poster Market". Here, teams of teachers are presenting their work with challenge-based learning, featuring interactive stations and posters showcasing their creative and innovative uses of the approach.

In addition, during the CBL Poster Market, the recipients of the 2023 CBL Grant will be announced.

Images by Freepik on freepik.com

GET INSPIRED

Take a journey through the world of challenge-based learning, learn and get inspired by other professionals' experience and expertise, and take your educational design to the next level.

Scan this QR code to visit the UT CBL webpage, download this brochure, find information about all the projects and download related documents.

CBL CURRICULUM DESIGN

Macro level

1. CBL in the MSc Robotics

Meso level

2. CBL & Constructive Alignment: A Challenge for Computer Science Practitioners
3. CBL in M-SE case study projects
4. The process of finding out if CBL is a fitting approach for the pre-M-SE

Micro level

5. Transforming a PBL into a CBL course: UT M-EEM "CB Sustainability Case projects"
6. Education for a new generation of scientific researchers

TEACHERS

Professionalisation & Support

7. Energy Transition Challenge
8. TDMI: Course packages 'Transdisciplinary and creative ways of working' and 'Shaping society and responsible futures'

Teacher role

9. Expectation Management is 'Key' in CBL

REAL-WORLD LEARNING

Real-world learning environment

10. Design studio

Value for stakeholders

11. CBL: how do students perceive the impact of external experts on their critical thinking? What do experts and tutors gain? And how do they perceive their contribution to student learning?
12. Transdisciplinary CBL: Multi-Stakeholder Co-Creation Combining Engineering Technology and Social Sciences

STUDENT COMPETENCIES AND ENGAGEMENT

13. Integrating Peer Feedback in CBL
14. Improving students' engagement and learning through CBL

LEARNING AND DEVELOPMENT COMMUNITIES

15. Senior University Teaching Qualification
16. Teaching Fellows

THE EXIBITION

In order for you to experience the CBL Poster Market, we divided the different projects in 5 themes. In the exibition, you will find the posters of the different projects. Below you can find the information and the map of the exibition.

- DesignLab Info Desk
- Entrance
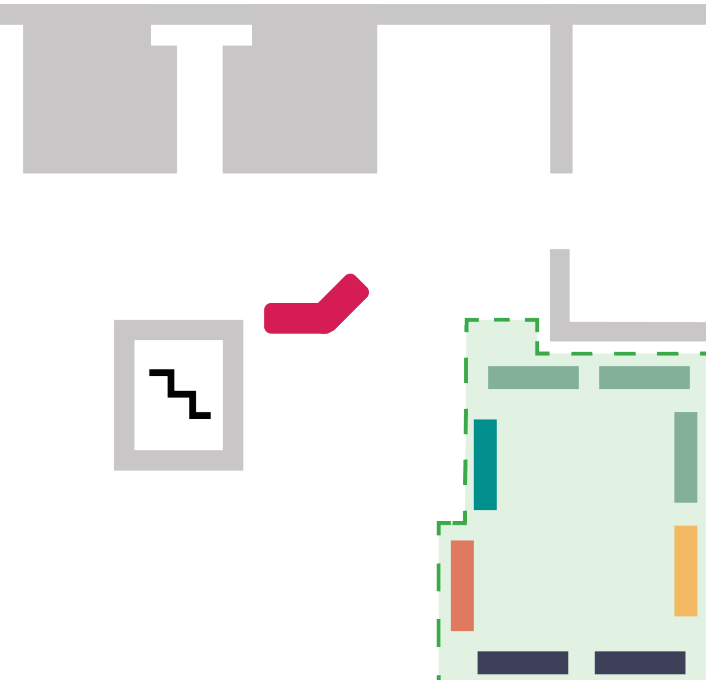- Exibition area
- Cbl curriculum Design Projects
- Teacher professionalisation & support Projects
- Real-world learning Projects
- Student competencies and engagement Projects

DES IGN LAB

UNIVERSITY OF TWENTE.

CBL IN THE MSc ROBOTICS

1

The project aims to implement CBL in MSc Robotics to prepare students for their MSc-thesis project and future career by exploiting the multidisciplinary nature of robotics.

Category: CBL CURRICULUM DESIGN/ MACRO LEVEL

The team:
- **Jan Broenink,**
- Eduardo Hermsen,
- Heidi Muijzer Witteveen,
- Olga Karageorgiou.

Jan Broenink

CBL & CONSTRUCTIVE ALIGNMENT: A CHALLENGE FOR CSc PRACTITIONERS

2

The project used a CBL approach to improve the Smart Industry Systems elective course, exploring real-world interoperability challenges, and utilizing the Smart Industry Digital Lab.

Category: CBL CURRICULUM DESIGN/ MESO LEVEL

The team:
- **João Rebelo Moreira,**
- Luís Ferreia Pires,
- Marcos R. Machado,
- Wallace Ugulino.

João Rebelo Moreira

CBL IN M-SE CASE STUDY PROJECTS

3

The MSc Spatial Engineering intuitively includes CBL elements in its education. This project investigates current CBL principles, explores enhancements, and makes it more attractive to ECIU students.

Category: CBL CURRICULUM DESIGN/ MESO LEVEL

The team:
- **Tiny Luiten,**
- Cheryl de Boer,
- Justine Blanford,
- Mark Brussel,
- Rogier van der Velde.

Tiny Luiten

THE PROCESS OF FINDING OUT IF CBL IS A FITTING APPROACH FOR THE PRE-M-SE

4

Due to the CBL nature of the MSc Spatial Engineering, it was logical to explore the usefulness of the approach for a newly-introduced distance Premaster of M-SE.

Category: CBL CURRICULUM DESIGN/ MESO LEVEL

The team:
- **Tiny Luiten,**
- Adina Imanbayeva,
- Justine Blanford,
- Thomas Groen.

Tiny Luiten

TRANSFORMING A PBL INTO A CBL COURSE: UT M-EEM "CB SUSTAINABILITY CASE PROJ.

5

M-EEM's group work courses are becoming challenge-based, with tailored Engage-Investigate-Act phases and aligned assessment. The project aims to investigate strengthening CBL and supporting it with formative assessment.

Category: CBL CURRICULUM DESIGN/ MICRO LEVEL

The team:
- **Ewert Aukes,**
- Gül Özerol,
- Kris Lulofs,
- Laura Franco-Garcia,
- Lisa Sanderink,
- Steven McGreevy.

Aukes Ewert

EDUCATION FOR A NEW GENERATION OF SCIENTIFIC RESEARCHERS

6

The project used CBL to develop higher order thinking skills through micro-modules and personalized development plans, and interdisciplinary collaboration.

Category: CBL CURRICULUM DESIGN/ MICRO LEVEL

The team:
- **Mieke Boon,**
- Angelique Assink,
- Gianluca Ambrosi,
- Leon van der Neut,
- Luuk Buunk,
- Sivakumar Kishore.

Mieke Boon

ENERGY TRANSITION CHALLENGE

7

The aim of this CBL project was to develop a clear and shared definition of the teaching activities with their conceptual underpinning, in the context of a Energy Transition Challenge.

Category: TEACHERS/ PROFESSIONALISATION & SUPPORT

The team:
- *Jurriaan Schmitz,*
- Cheryl de Boer,
- Cora Salm,
- Frank van den Berg.

Jurriaan Schmitz

TDMI: COURSE PACKAGES

8

The project aimed to develop tools for CBE tutors to support students in acquiring transdisciplinary working competences, focusing on providing feedback, advising on teamwork and collaboration, and translating knowledge to project work.

Category: TEACHERS/ PROFESSIONALISATION & SUPPORT

The team:
- *Klaasjan Visscher,*
- Deger Özkaramanli-Leerkes,
- Mieke Boon.

Klaasjan Visscher

EXPECTATION MANAGEMENT IS 'KEY' IN CBL

9

The teacher's role in two rounds of a CBL-like courses was investigated. The two teachers used peer-observation to identify indicators about the teacher as a coach or team-member in CBL.

Category: TEACHERS/ TEACHER ROLE

The team:
- *Anne Leferink,*
- *Marcel Bijman.*

Anne Leferink   Marcel Bijman

DESIGN STUDIO

10

ECB Design Studio challenges interdisciplinary student teams to create sustainable education materials with secondary schools, building sustainable relationships with schools in the region.

Category: REAL-WORLD LEARNING

The team:
- *Jony Heerink,*
- Nieveen Nienke.

Jony Heerink

CBL: STUDENTS' PERCEPTION, EXPERTS AND TUTORS' GAIN AND IMPACT PERCEPTION

11

This CBL project analyzed meetings, surveys, self-assessments, and interviews to understand the effects of stakeholder involvement on critical thinking and skill development.

Category: REAL-WORLD LEARNING

The team:
- *Jovana Jezdimirovic Ranito,*
- Olaf Jansen (student UCT),
- Pascal Wilhelm.

Jovana Jezdimirovic Ranito

TRANSDISCIPLINARY CBL: MULTISTAKEHOLDER CO-CREATION ET & SSc

12

This CBL project analyzed meetings, surveys, self-assessments, and interviews to understand the effects of stakeholder involvement on critical thinking and skill development.

Category: REAL-WORLD LEARNING

The team:
- *Desiree van Dun,*
- *Brendan Sullivan,*
- *Kostas Nizamis,*
- Eduardo Hermsen,
- Mats van Dalen.

Desiree van Dun   Brendan Sullivan   Kostas Nizamis

INTEGRATING PEER FEEDBACK IN CHALLENGE-BASED LEARNING

13

The project used CBL to engage students in solving complex problems with diverse solutions. A 360-degree peer feedback process was implemented to enhance engagement and self-regulated learning behaviors.

Category: STUDENT COMPETENCIES AND ENGAGEMENT

The team:
- *Anna Bos-Behles,*
- Eduardo Hermsen.

Anna Bos-Nehles

SENIOR UNIVERSITY TEACHING QUALIFICATION

15

The Senior University Teaching Qualification (SUTQ) group is composed of teachers that are in the learning trajectory of obtaining the SUTQ certificate. In this Poster Market, a poster by Dr. Klaas Stek is displayedv.

Category: LEARNING AND DEVELOPMENT COMMUNITIES

Cheryl de Boer   Janine van Til   Klaas Stek

IMPROVING STUDENTS' ENGAGEMENT AND LEARNING THROUGH CBL

14

The project aimed at implementing CBL for Health Sciences students' mental health technology project to enhance tangible application of concepts, engagement, and feasibility.

Category: STUDENT COMPETENCIES AND ENGAGEMENT

The team:
- *Xavier Pouwels,*
- Naomi van der Linden.

Xavier Pouwels

TEACHING FELLOWS

16

Teaching fellows aim to enrich the University of Twente's educational landscape through Challenge-Based Learning, align ongoing activities, and create flexible learning environments.

Category: LEARNING AND DEVELOPMENT COMMUNITIES

Janneke Ettema   Léon olde Scholtenhuis   Raymond Loohuis

Robin de Graaf   Tracy Craig

OTHER 2022 CBL GRANT PROJECTS

- Challenge-based Scientific Computing (*Fleurianne Bertrand*)
- Conceptual modeling in CBL (*Jan Buitenweg*)
- CBL4UAVphotogrammetry (*Farzaneh Dadrass Javan, Francesco Nex*)
- Design and development of Minor Module "Cold Case" in a Challenge-Based cross-level, cross-institutional setting (*Maurice van Keulen*)
- Fostering cooperation between challenge providers and CBL-based courses: Exploring the opportunities of adopting student-led consulting practices to strengthen engagement in CBL. (*Mauricy Alves da Motta Filho*)
- Inter-, multi- and transdisciplinary in CBL (*Miles MacLeod*)
- Natural and engineering research methods in CBL (*Anne Leferink*)
- Natural science measurement methods in CBL (*Arturo Susarrey Arce*)
- Social research methods in CBL (*Ariane de Gayardon de Fonoyl, Daniela Craciun*)
- Social science measurement methods in CBL (*Jacqueline Drost*)
- The role of reflection in CBL (*Ringo Ossewaarde*)

Thank you for participating in the first edition of the **UT CBL Poster Market**. We hope you found it informative and engaging. By **connecting** individuals who are applying CBL at UT, we hope to promote a thriving l**earning community** and facilitate the implementation and adoption of **best practices** for CBL. We believe that by **working together,** we can make a **significant impact** on education. Thank you for being a part of this important initiative.

Eduardo Hermsen, Adina Imanbayeva, Gianluca Ambrosi