

PRIMECH



PRogramme of Innovation in MECHanics education

'23/ '24 PRIMECH team

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ABOUT PRIMECH



PRIMECH Objectives

Innovate the way TU Delft provides Mechanics education.

In particular:

1. Helping more students adopt a deep approach to learning:

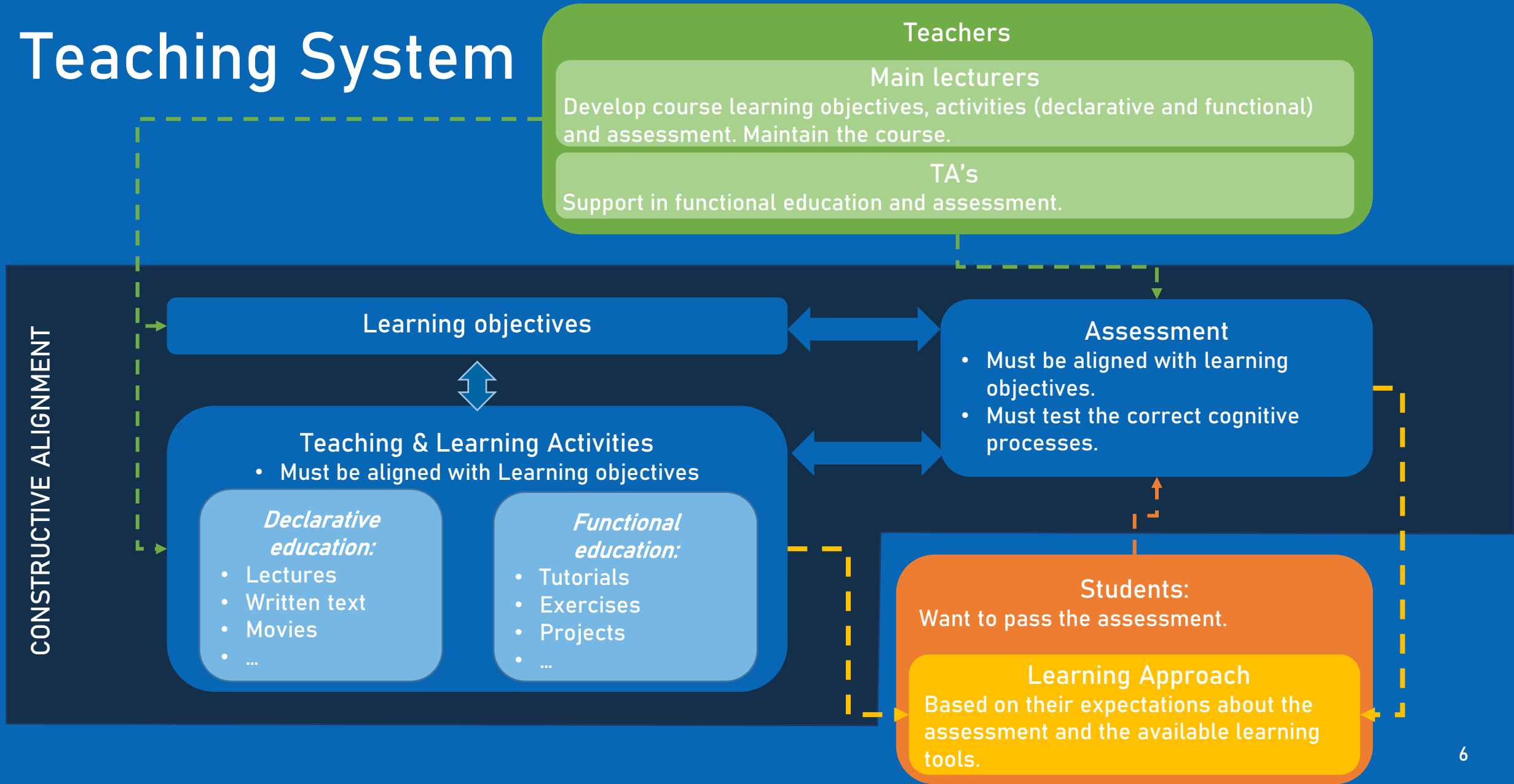
- To better understand and acquire mechanics concepts.
- To help the development of an effective studying mentality.

2. Providing (domain-specific) support for the teachers:

- Facilitating the alignment between mechanics courses within each Bachelor programme.
- Promoting the interfaculty collaboration and exchange of material, good practices, and peer-to-peer support.

Why work with teachers?

Teaching System



We value the teachers; they are the ones in the position of changing the system.

PRIMECH Mission



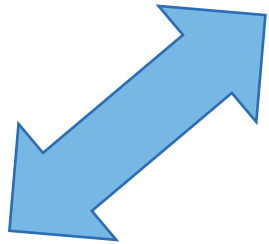
We believe that teachers have an essential role in improving students' learning, being the ones not only teaching the subject content, but also structuring the course they deliver, deciding the learning objectives and choosing the learning activities.

For this reason, we think it is indispensable to co-develop any educational innovation with teachers.

PRIMECH Intervention

Therefore, we recognised 2 levels of intervention:

1. Promotion of a community, where teachers from various faculties can meet, exchange and work together.
TEACHERS' LEVEL



2. Support to teachers in creating materials, activities, and tools that would improve student learning outcomes and courses alignment.
STUDENTS' LEVEL

COMMUNITY

The Mechanics Teachers Social Club



Communities of practice

“Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly.”

Reference:

Etienne and Beverly Wenger-Trayner (2015). Communities of practice: a brief introduction.
<https://wenger-trayner.com/introduction-to-communities-of-practice/>.

Communities of practice

According to Wenger-Trayner (2015), a community of practice is a group of people who:

Domain

- Share an area of interest & key issues (i.e. teaching Mechanics)

Community

- Build a relationship through regular meetings, discussion, activities & learning

Practice

- Share, develop and maintain knowledge & tools to improve their professional practice

PRIMECH Mechanics teachers social club

We want to create a social club based on:

- **Autonomy & Agency:** teachers are encouraged and supported in their initiatives.
- **Relatedness:** teachers have shared values, views, goals, interests, experiences and problems.
- **Competence:** teachers are welcome to share their knowledge and best/innovative practice, learning from each other. The PRIMECH team can provide extra knowledge and training when necessary/requested.

These three values are inspired by: Niemiec, C.P. and Ryan, R.M., 2009. Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and research in Education*, 7(2), pp.133-144.

PRIMECH Mechanics teachers social club

The Social Club is where all the Mechanics Teachers of TU Delft

- meet,
- share experiences,
- learn from and inspire each other,
- and start collaborating on new exiting educational projects!



PRIMECH Mechanics teachers social club

2022-2023 Outcomes

- **7 events:**
 - 3 guest-experts event: in-class demonstrations (Ron Haaksman AS), ANS and formative assessment (Calvin Rans AE and Tom van Woudenberg CEG), gamification (Otto Visser EEMCS).
 - 1 Exploring the link between Mechanics and Math together with PRIME teachers.
 - 1 Co-development of concept maps to aid students in navigating their learning (Course Graph app).
 - 2 holidays community celebration (winter and summer).
- **MS Teams:** 100 members.
- **Monthly newsletters:** 10 issues.
- **LinkedIn:** 156 followers, 24 posts.

SUPPORT TO TEACHERS

Accelerate



Accelerate



→ FOR WHO

Passionate teachers.

→ WHAT

We provide support and resources to develop innovative teaching materials and activities.

→ HOW MUCH

Free of charge!

1 STEP 1

You're a teacher with an idea to improve students' learning, but you don't have the time to make it happen.



How it works

2 STEP 2

Contact us at PRIMECH@tudelft.nl and book a meeting. We will provide you with the necessary resources to make your idea take off.



3 STEP 3

Enjoy seeing your idea out there, improving students' learning outcomes!



Impact

Helping more students adopt a deep approach to learning.



Accelerate in 2023 - 2024

FOR WHO: Teachers who aspire to innovate their teaching practice and improve students' learning outcomes, but lack the time, the resources, the know-how, ... to do so.

WHAT: PRIMECH can provide them with the necessary knowledge, support, network and resources to develop innovative and effective teaching materials and activities.

EXAMPLES: This can involve restructuring course content, creating visualizations, videos, tools, teaching modules, formative assessments, demonstrations, lab activities, and other such elements that innovates the teaching of mechanics subjects.