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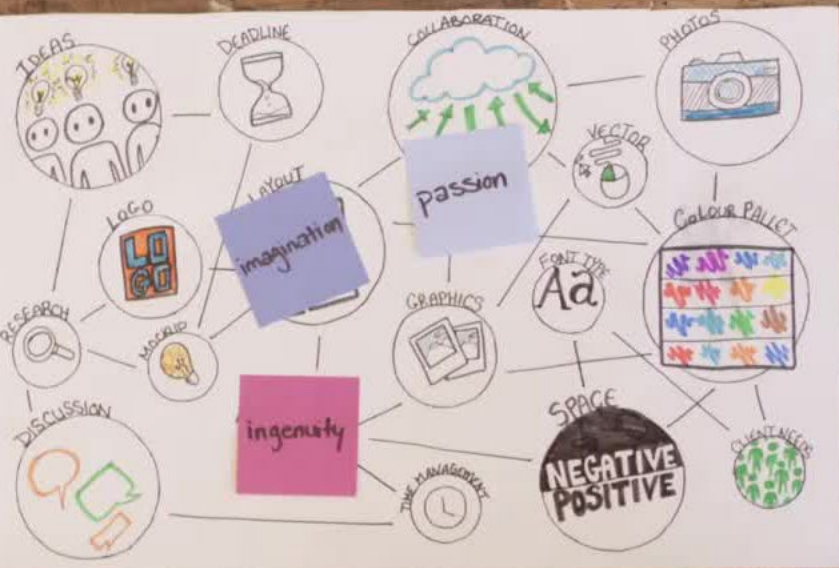


Enhancing Engineering Education: The Importance of Teacher-Student Connection

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Welcome & Purpose

- Background and information on the changing landscape of engineering education
- Purpose of this workshop is to brainstorm and potentially identify:
 - Ideas for building positive relationships with students
 - Communication techniques for effective student-teacher interaction
 - Ways to create a supportive classroom environment
 - Practical examples of building connections with students
- Sum up
- Feedback survey



Schedule

- Introduction/background 10 mins
- Session 1:
 - 10 mins brainstorming in groups
 - 10 mins discussion in plenum
- Session 2:
 - 15 mins brainstorming in groups
 - 15 mins discussion in plenum
- Final conclusions – 10 mins
- Feedback survey and research permissions 10 mins

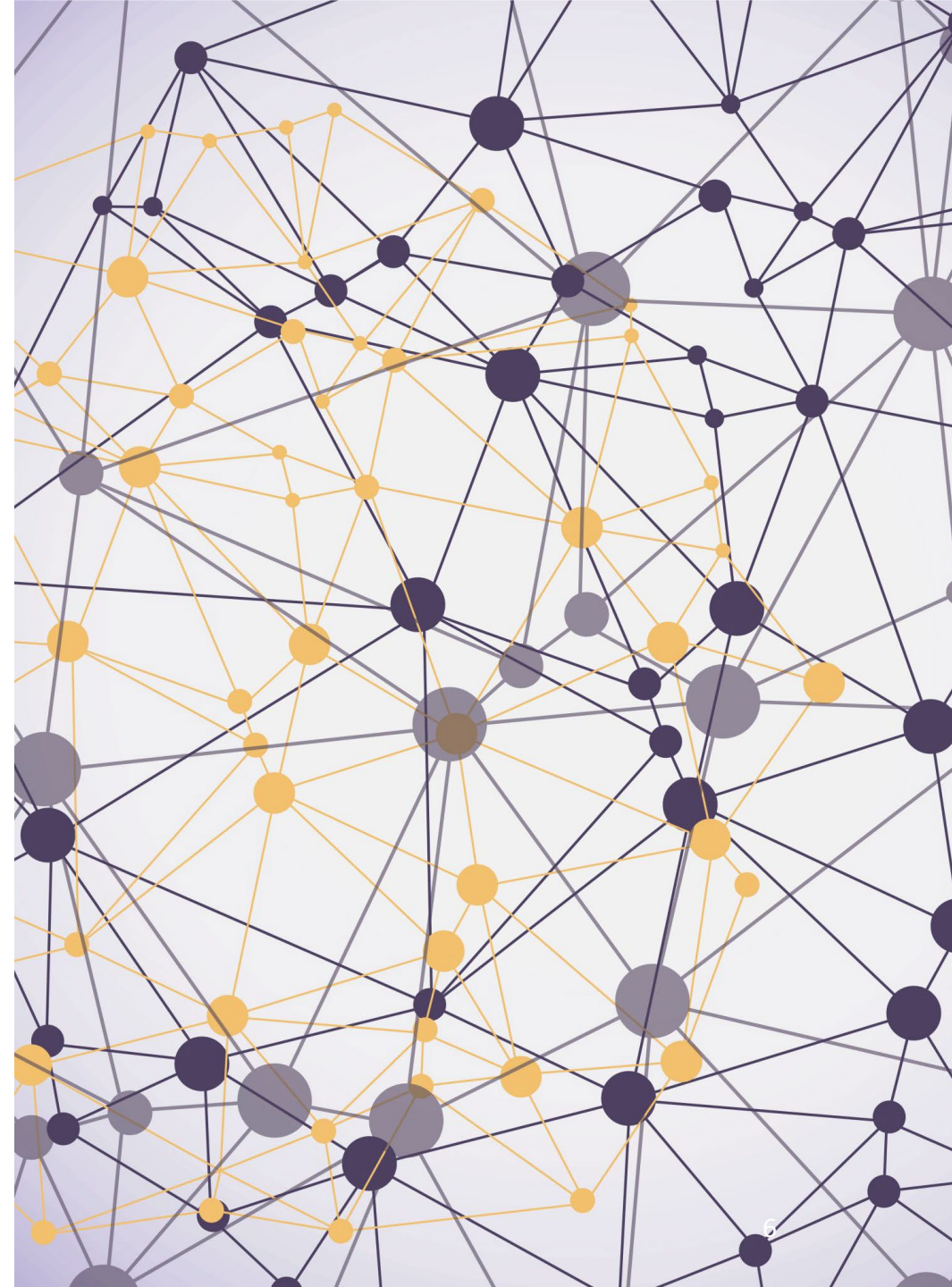


Background

- We need more graduates from STEM – specifically engineers
- Traditional focus and perception of Engineering Education has been on cognitive learning. There is a larger focus in engineering education research towards affective learning and student emotions.
- Connection between students and teachers is part of this
 - Sources (Bairaktarova, 2022; Davis, 2017; Tormey, 2021; Wilson & Mukhopadhyaya, 2022)

What do we mean by 'connection'

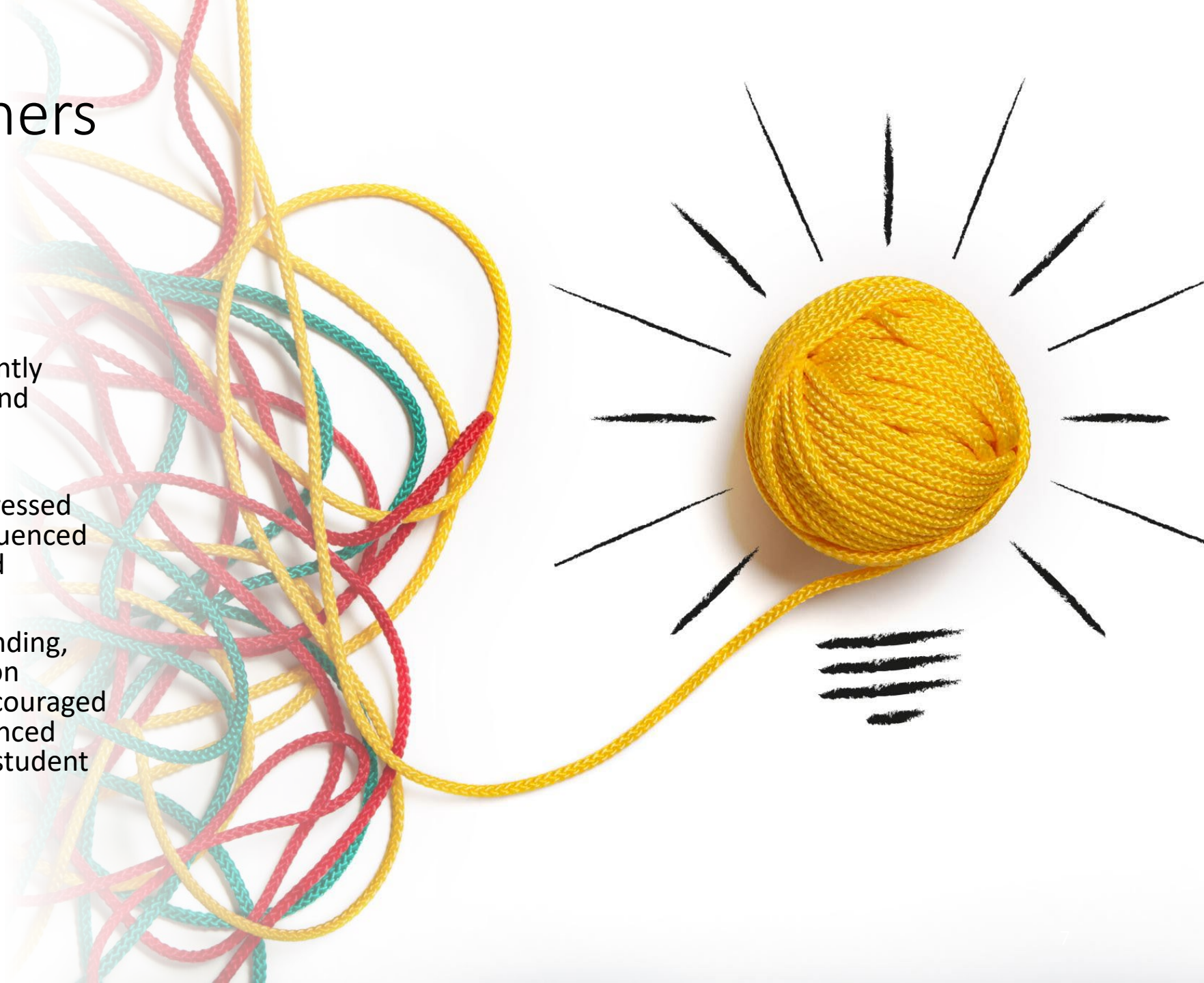
- Other literature refers to similar definition as Teacher student relationships or interactions (Tormey, 2021; Hartikainen, et al., 2022; Aldrup et al., 2022)
- Connectedness “when a person is actively involved with another person, object, group, or environment, and that involvement promotes a sense of comfort, well-being, and anxiety-reduction” (Tseng, et al., 2022)
- Teacher-student interaction “enthusiasm, ability to motivate students, sensitivity, respect and availability” (Parmenter and Robertson, 2022)
- Immediacy “behaviours that increase/decrease degree of psychological distance between teacher and student” (Freitas et.al 1998)
 - Perceptions of: instructor clarity, humour, communication style and, effectiveness; student empowerment and motivation.
- Is it important?
 - Has an impact on absenteeism (Rocca 2004); immediacy and its predictor of the quality of the course experience (Freitas, 1998,2009; Tormey, 2001); promotes affective learning (Tormey, 2021)



Impact of Teachers on Motivation

- Teachers' actions can significantly impact students' motivation and learning environment
- Positive student emotions are associated with teachers' expressed enthusiasm and positively influenced students' own enthusiasm and motivation
- Expressed empathy, understanding, non-judgment, and compassion demonstrated by teachers encouraged students to ask for help, enhanced their learning and promoted student motivation and persistence

(Hartikainen et al., 2022)





Session 1

10 mins

- Discuss the current cohort of students in groups:
 - **10 mins**
 - Who are the students we have today?
 - Are there noticeable characteristics in their behaviour/learning style/motivation as a cohort?
 - Are there differences compared to previous students?

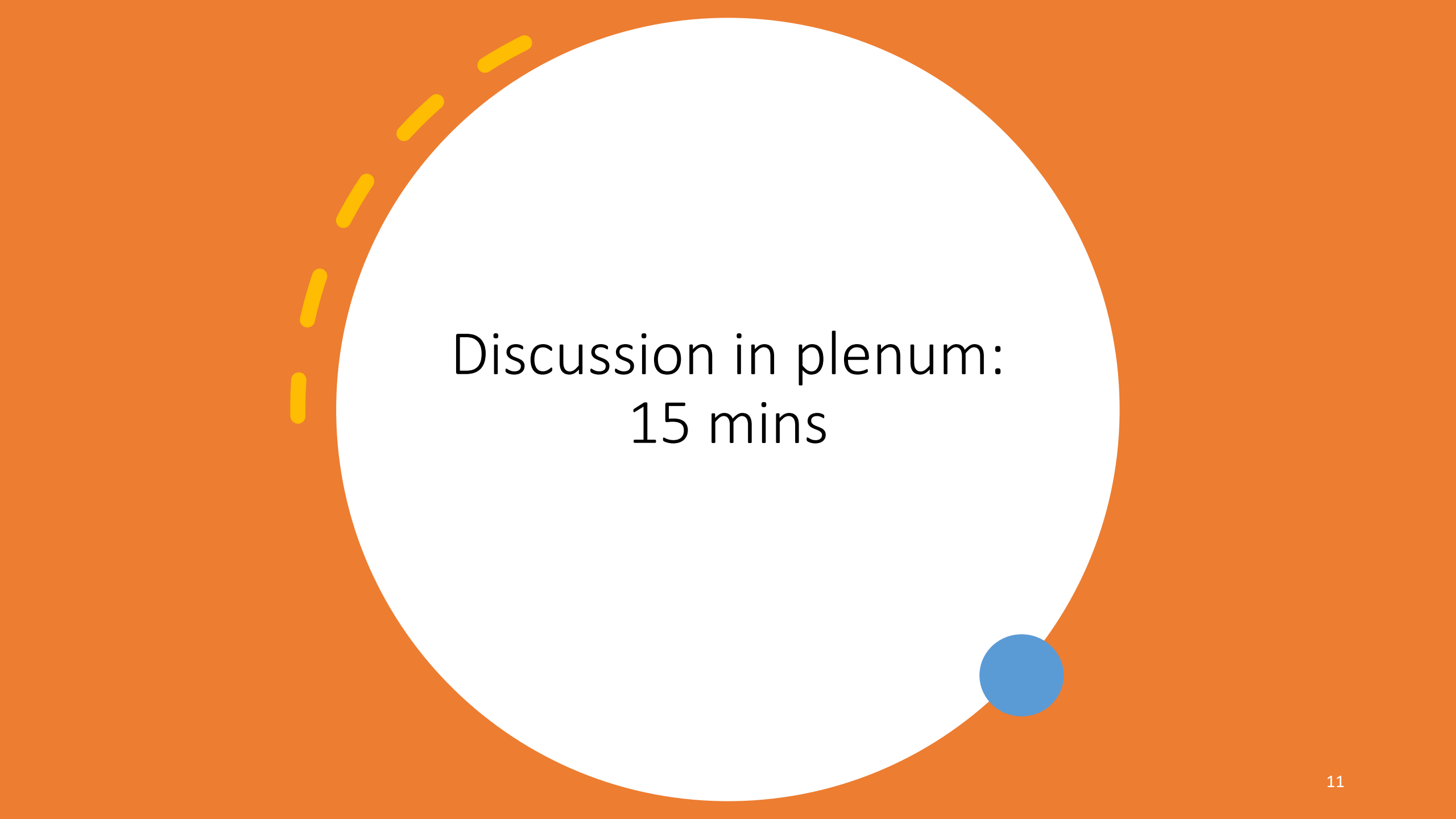
Discussion in plenum:
10 mins

Session 2

15 mins

- **In your group: discuss/brainstorm/share on the following:**
 - What are the challenges in teaching today?
 - What are barriers to connecting with students? What works well?
 - How can teachers motivate and connect with their students?
 - What changes do we need to make (if any)?
- Do you have any strategies that could be practically implemented?





Discussion in plenum:
15 mins

Sum up and conclusions

- Cultivating strong teacher-student connections can foster an environment of trust, collaboration, and effective learning.
- By developing teacher-student connections, we can enhance student engagement, motivation, and overall academic performance, leading to a more enriching and successful educational experience.
- Sustaining ongoing communication, providing mentorship opportunities, and incorporating real-world examples into teaching practices are key strategies to foster meaningful teacher-student connections in engineering education.
- My research:
 - What are the influential factors in a student's learning environment that contribute towards persistence in education at a technical university?
 - What are my findings so far?

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Thank you for participating