

Perceptions of Teaching Aims in Physics

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Main Objective

What do both students and staff perceive as the main aims of the teaching and learning process?

Teaching Aims

Aims Influence Learning Outcome

The perception of teaching aims and the learning process can influence a student's approach to learning, consequently affecting the quality of their learning outcome.

(Trigwell, 1999)

Learning Approaches

Surface

- Deal with "external impositions"
- Practical motivation
- Students try to complete task with minimal effort.
- Study without considering the wider context
- Prioritises memorisation over understanding

(Biggs, 1987)

Deep

- Understand ideas and find meaning in the material studied.
- Intrinsic interest in tasks
- Study in the context of the overall topic
- Satisfy curiosity, find the underlying principles

(Biggs, 1987)

Researchers have shown that students adopting a deep approach to learning have a better quality learning outcome compared to students using a surface approach

(Chin and Brown, 2000)

Learning Approaches

What influences a student approaches

- Character and intrinsic motivation (Beattie, 1997)
- Learning environment, perceived workload and quality of teaching (Ramsden 1992)
- Enthusiastic, engaging lecturers that communicate clearly and put content into context (Martin 2019)
- **Staff Perception of Teaching Aims** (Dall'Alba, 1991; Trigwell, 1999)

Do the staff and student perceptions match?

Survey Design

- Multiple-choice questions require less effort to complete [9 mcq, 1 free text]
- Data analysis is more efficient (using *R*)
- Easier to compare answers from different groups
- Students: age, gender, year of study, programme of study; staff: years teaching

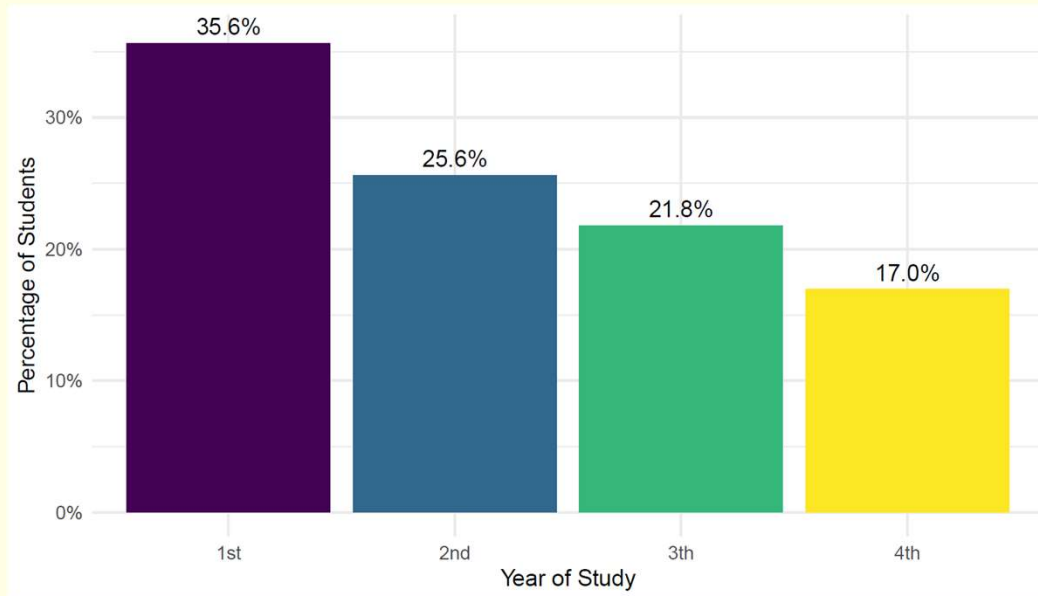
Data

students: 960 → 289

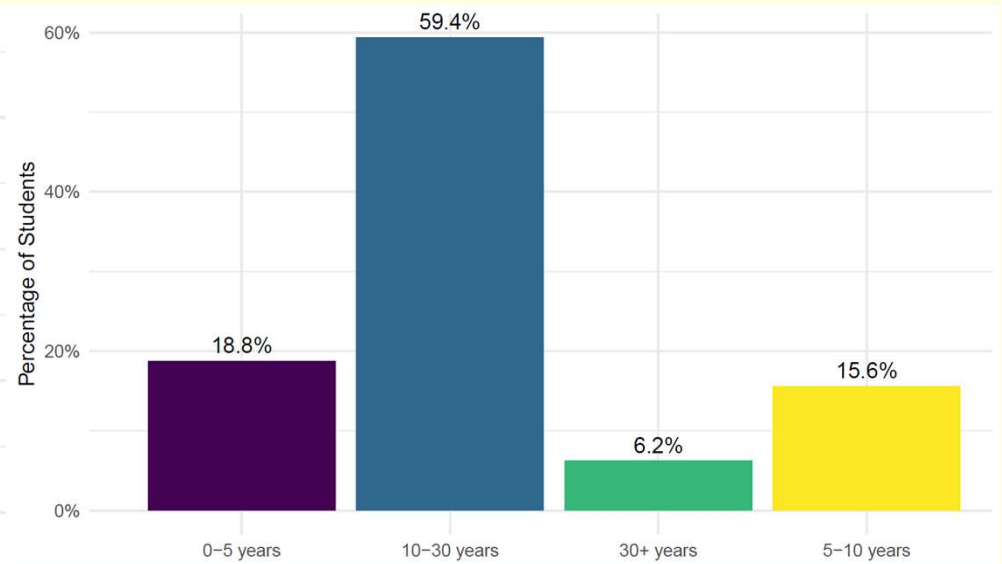
staff: 143 → 32

Demographic

Student (n=289)



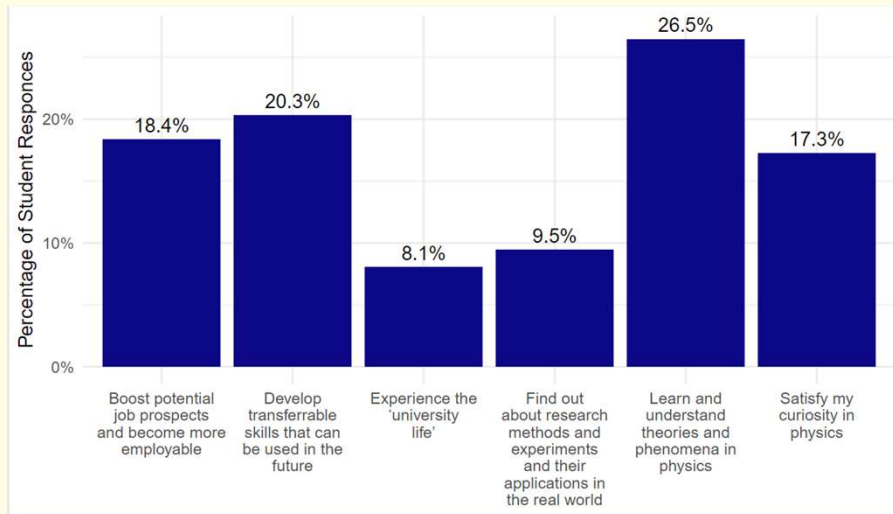
Staff (n=32)



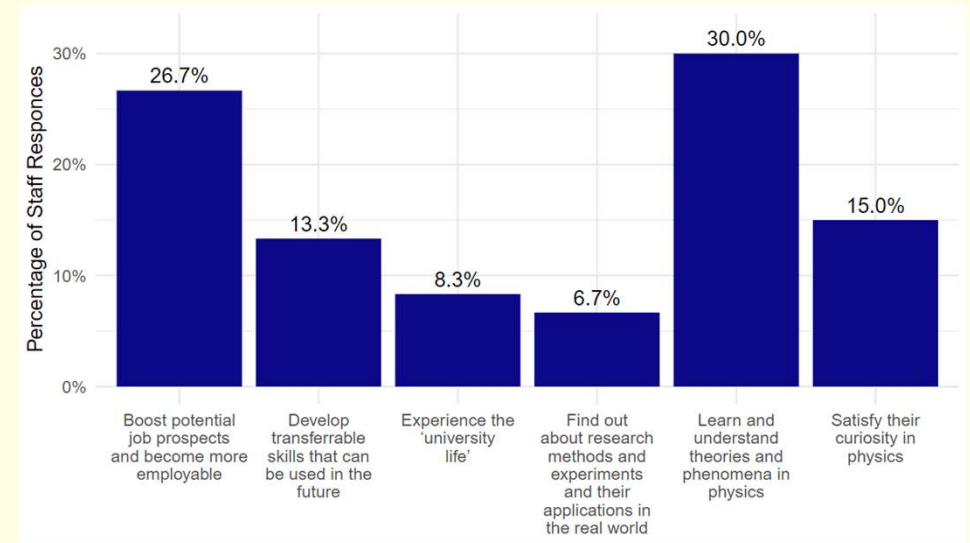
Overall Aims

What do you aim to learn or get out of the university teaching during your degree?

Students



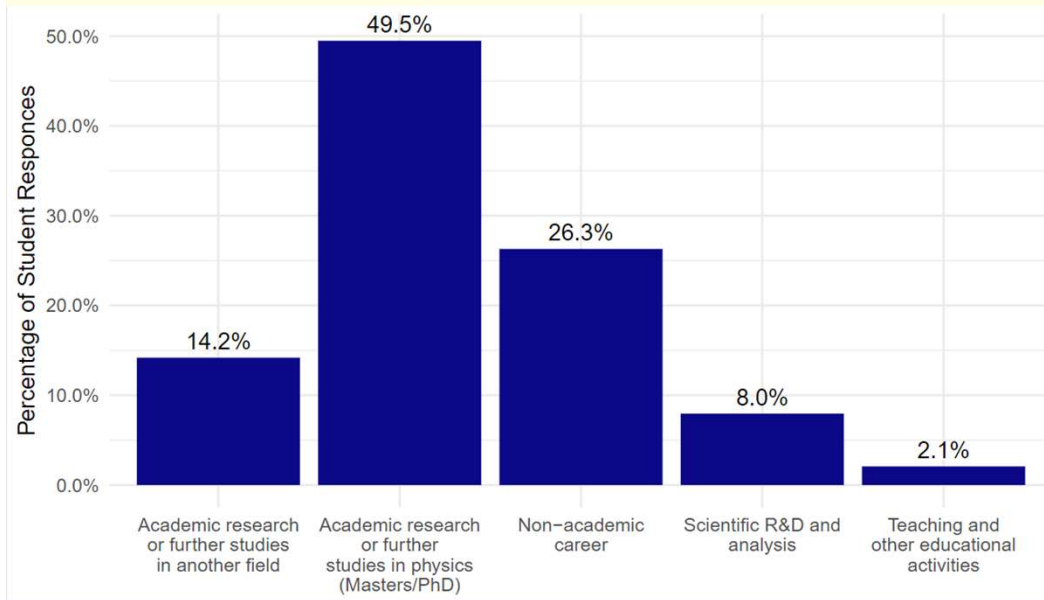
Staff



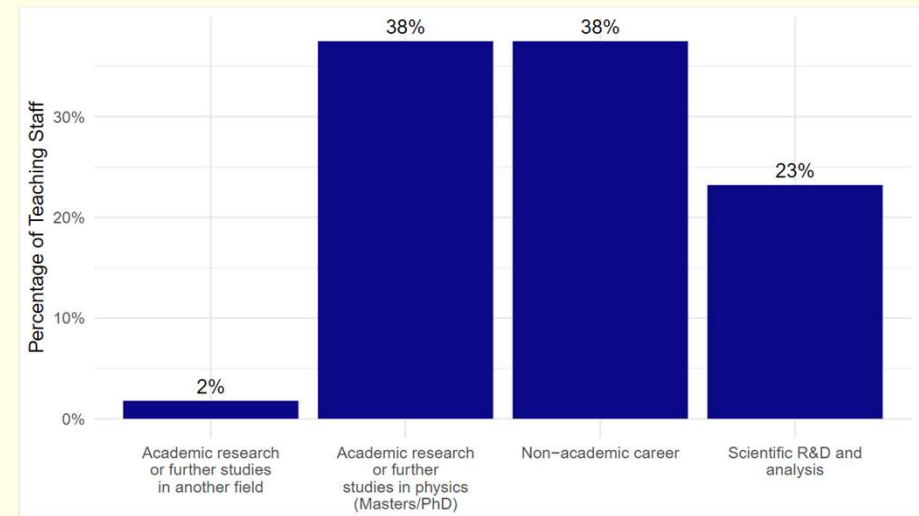
Overall Aims

What do you want to do after finish your physics degree?

Student



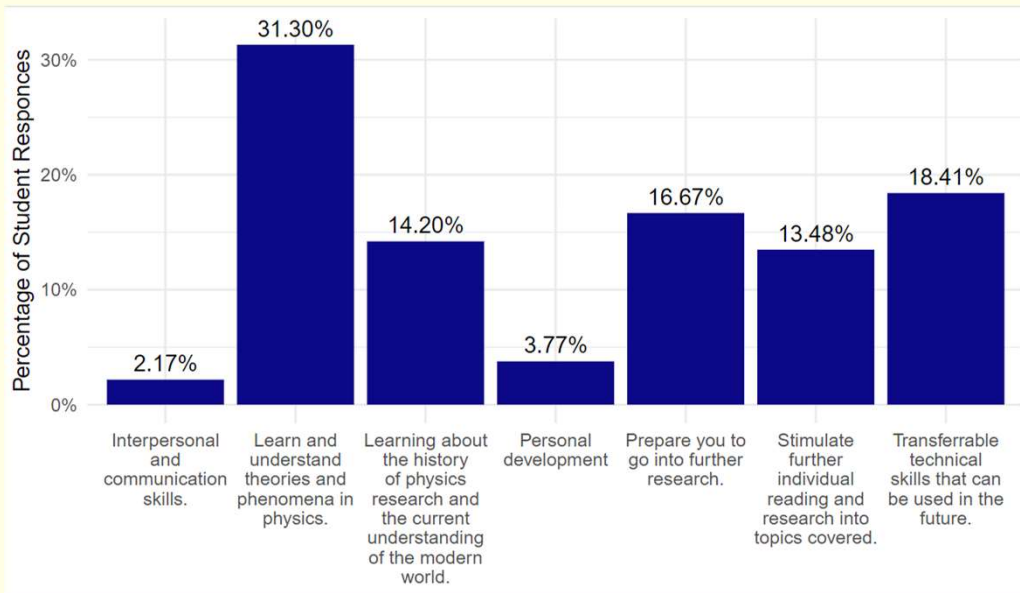
Staff



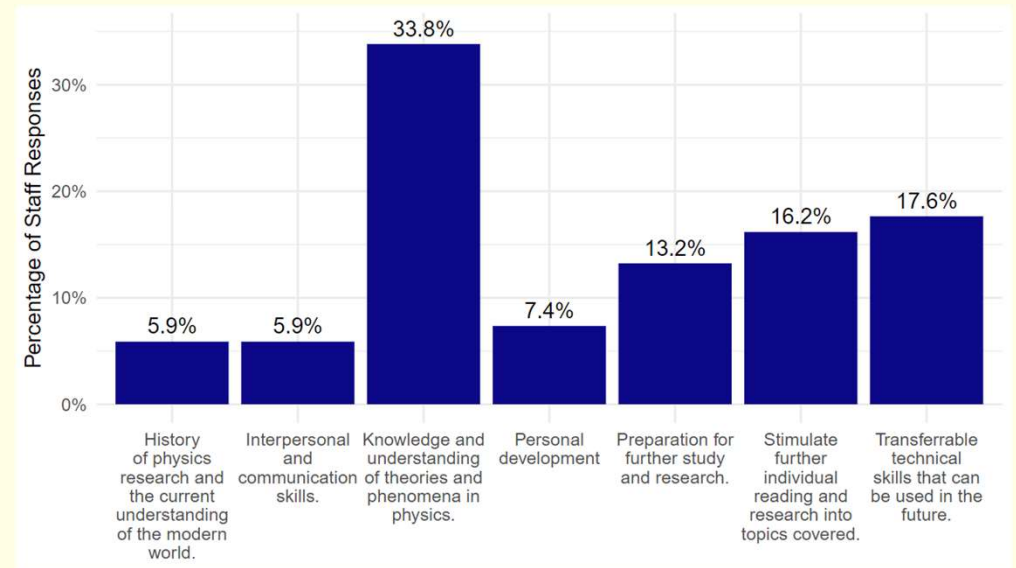
Teaching Aims

What would you tell a friend who has never done physics if they asked you what your lecturers are teaching you or helping you to develop?

Student



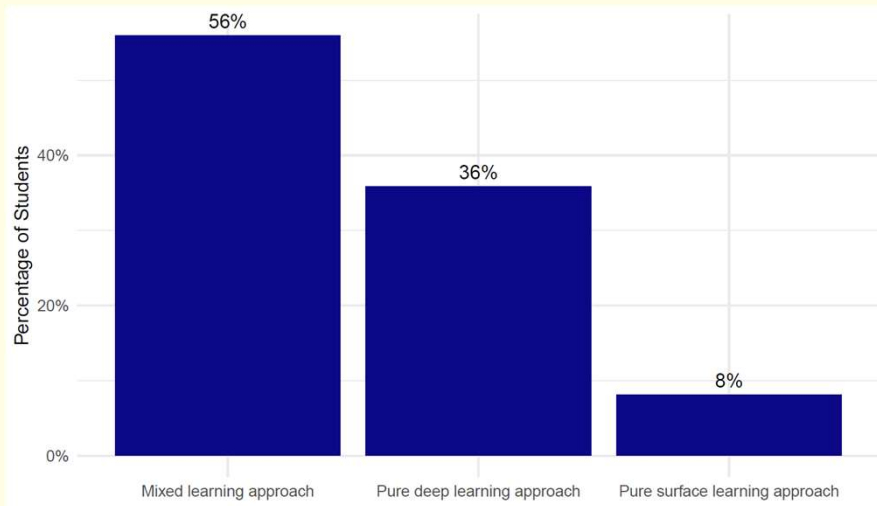
Staff



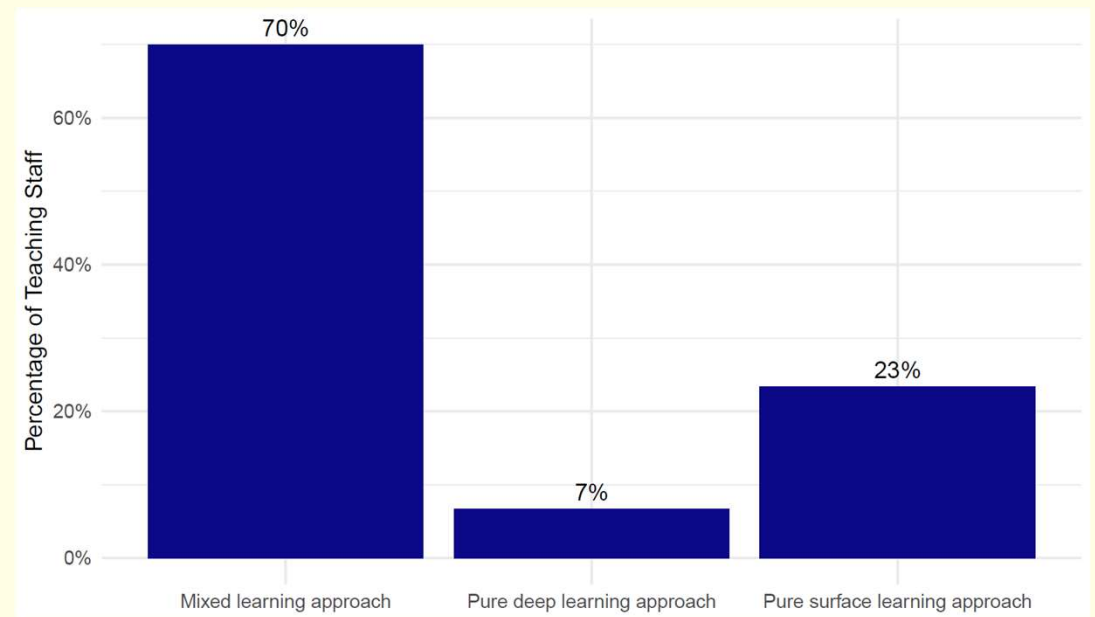
Learning Approaches

How do you currently go about studying physics?

Student



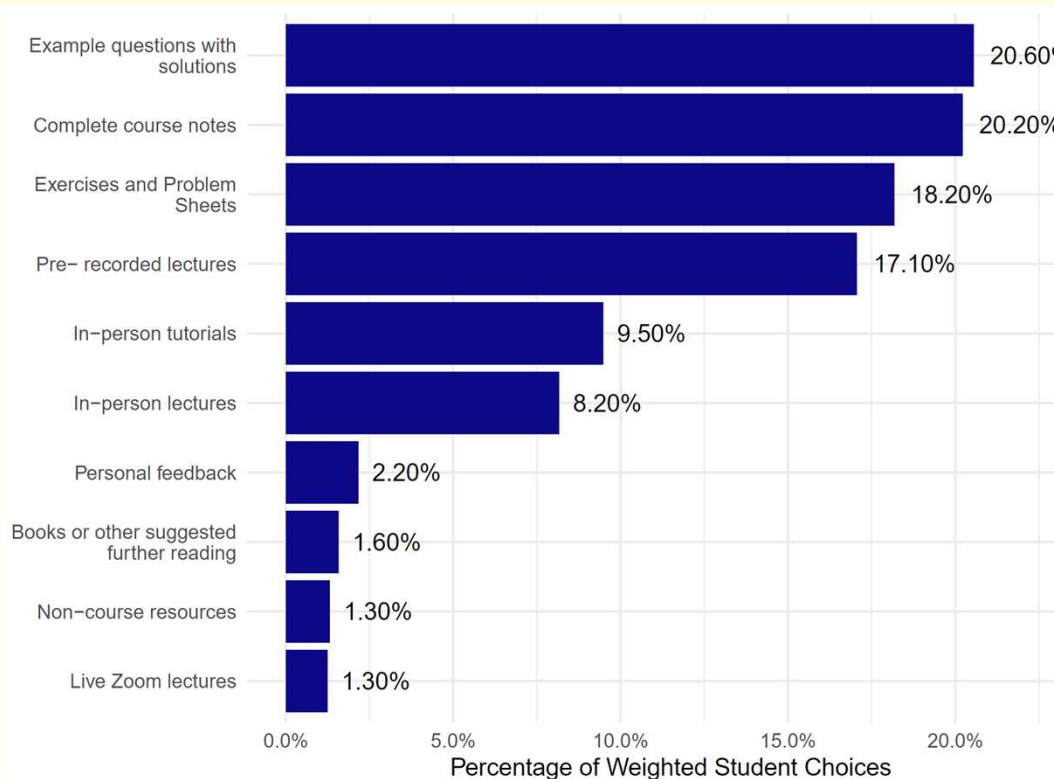
Staff



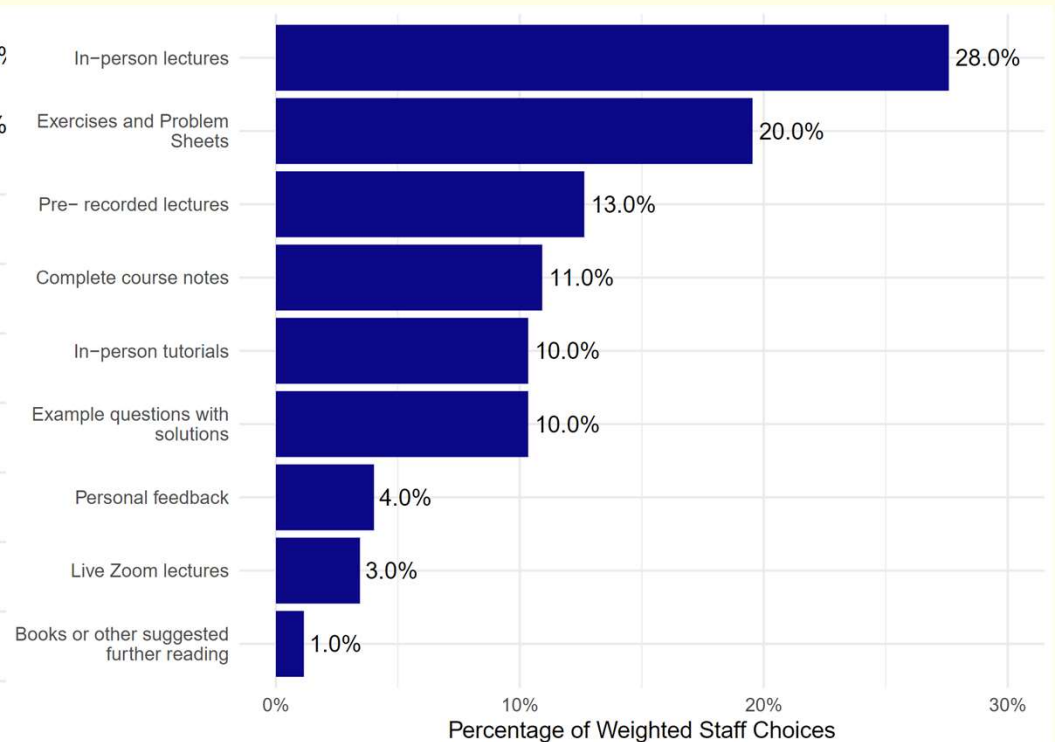
Student and Staff Preferences

What part of teaching is most useful to you?

Student

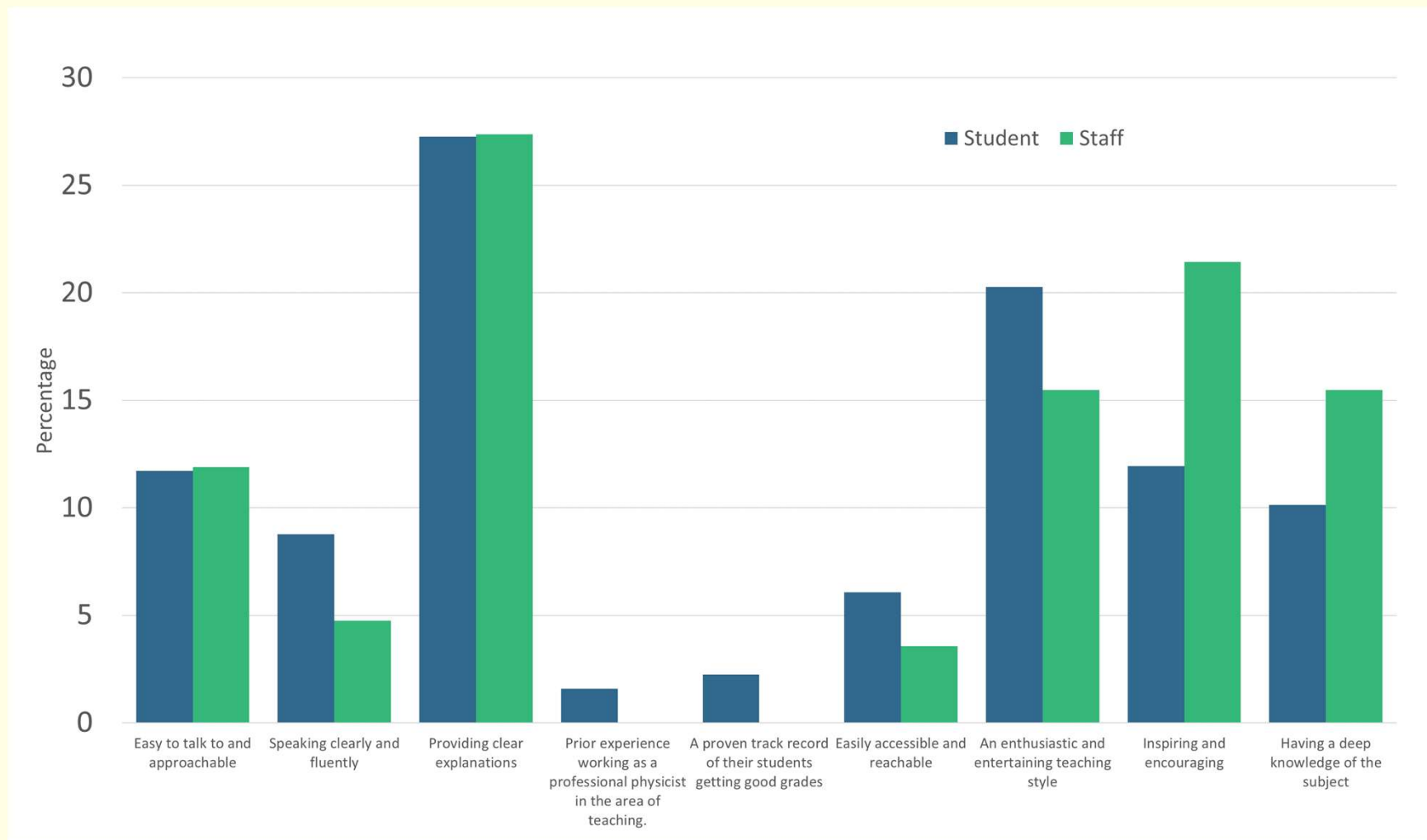


Staff



Student and Staff Preferences

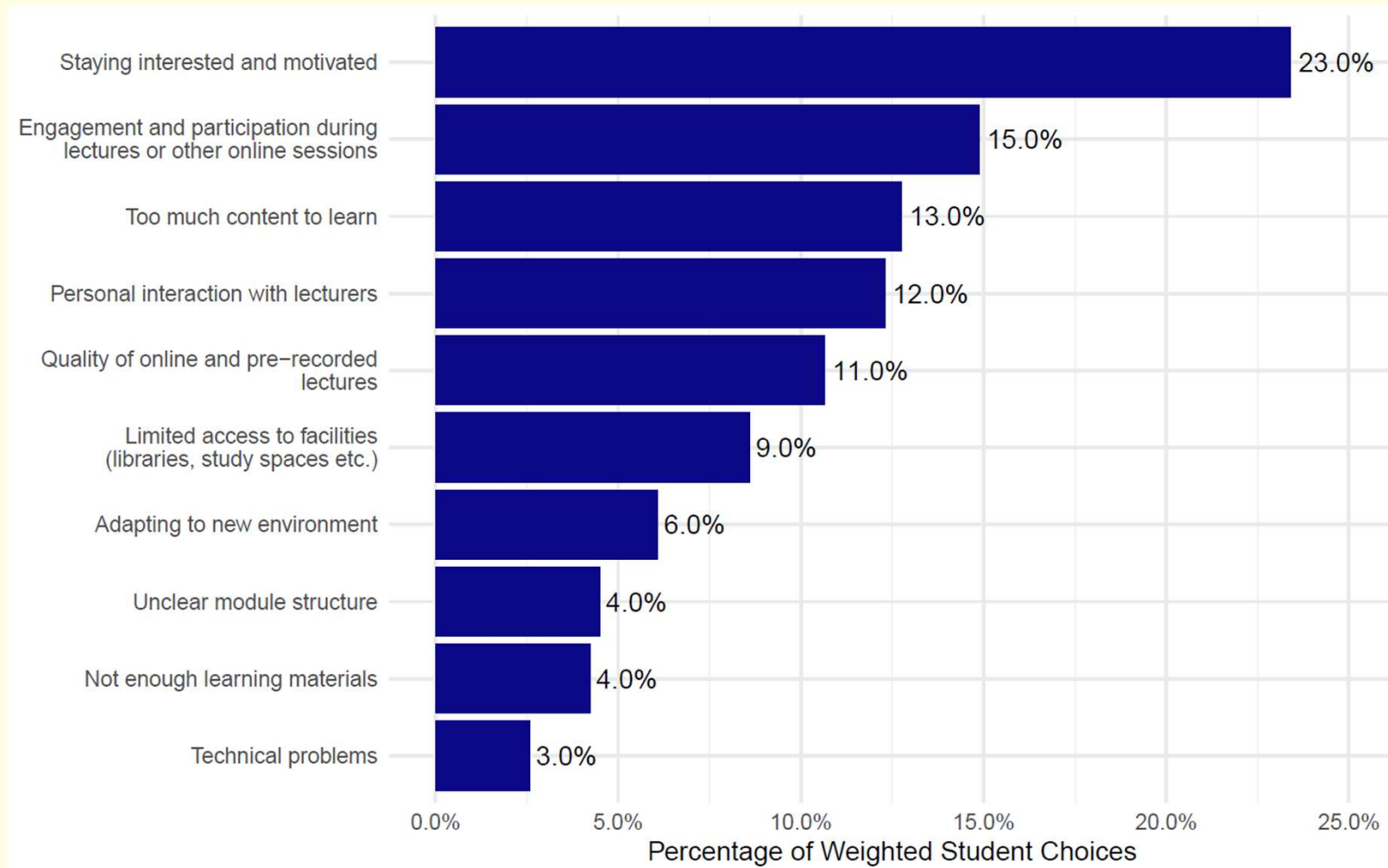
What do you think are attributes of a good university lecturer?



COVID-19

Considering COVID-19 what are finding difficult with online teaching in general? Where do you think the teaching is lacking?

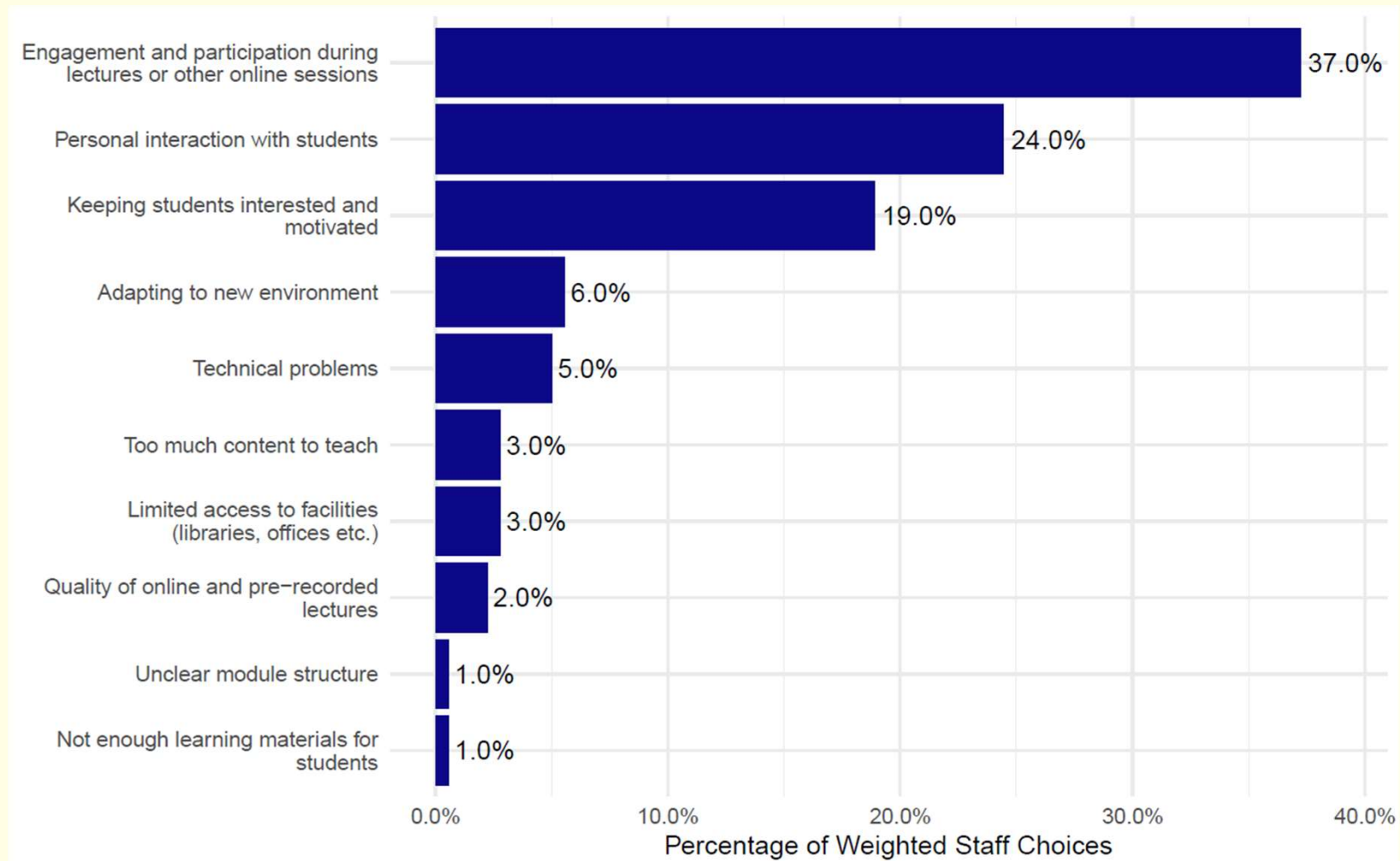
Student



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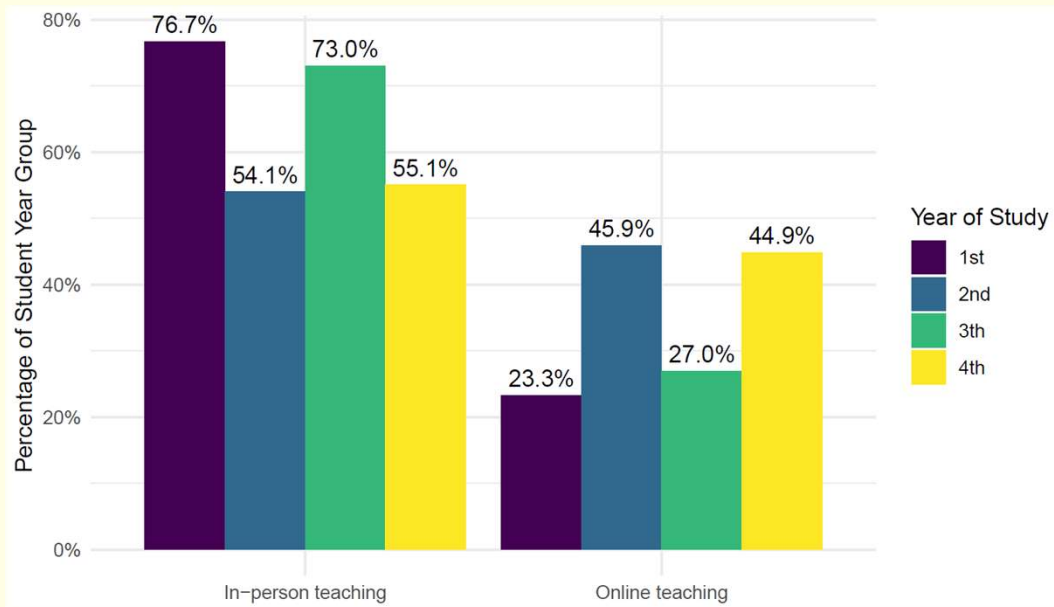
Staff



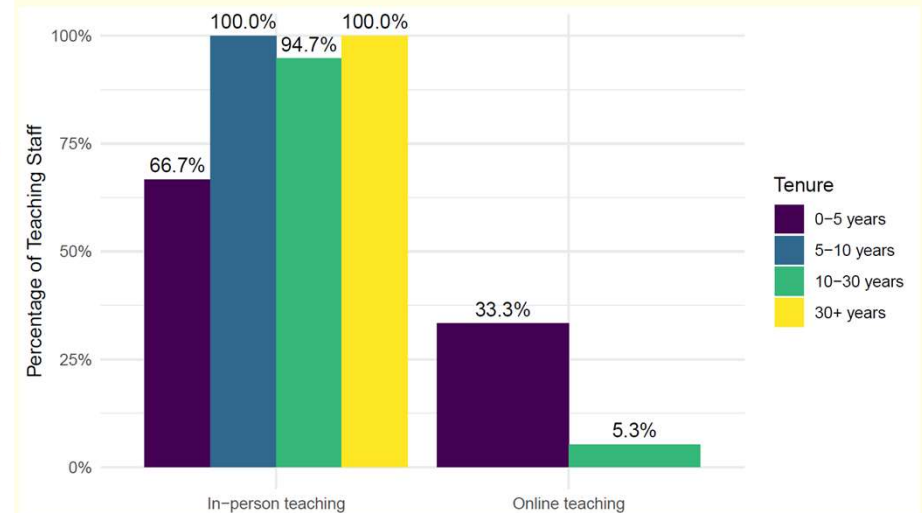
COVID-19

Only considering teaching,
do you prefer online or in-person teaching?

Student



Staff



Conclusion

- Perceptions of teaching aims during the degree is roughly similar for staff and student
- Teaching aims promote a deep approach
- Students use a deep approach to learning
- Students mostly prefer offline resources over face-to-face interactions whereas staff prefer in-person lectures
- A large proportion of students prefer online teaching
- *'I think the best realistic model in the future is pre-recorded lectures followed by live in-person sessions'*

Thank you!

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