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WP1: Baseline Analysis

2nd UNITEL kick off Meeting
28-29 September 2021

Outline

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Reports of each target group:

- Teachers
- Students
- Companies
- Business Actors

Sorting and Arrangement:

- Based on areas of discussion
- Based on types of questions

Information: Participation of IR partners

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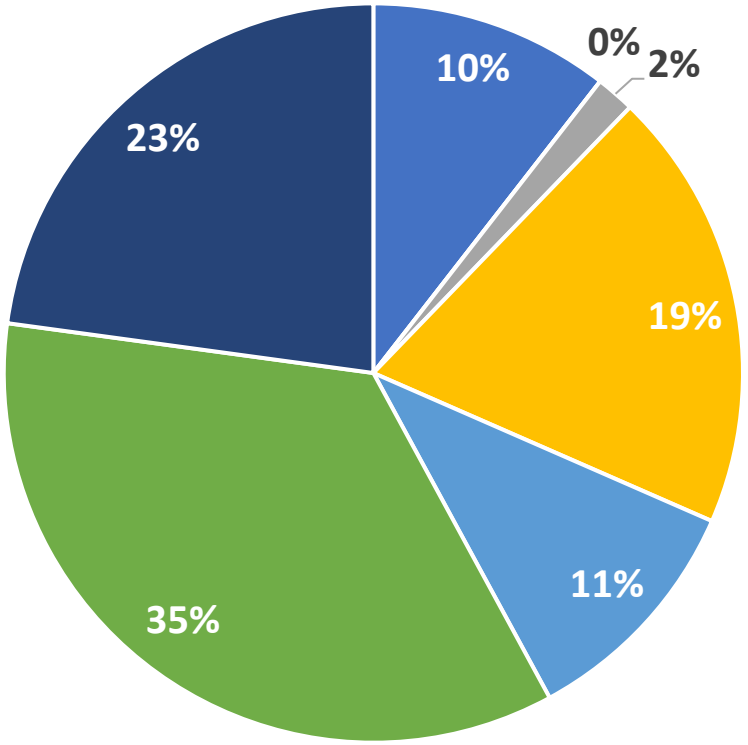
Total respondents: 57 teachers



- IKIU, Imam Khomeini International University
- USB, University of Sistan and Baluchestan
- SU, Shiraz University
- UI, University of Isfahan
- UT, University of Tehran
- SCU, Shahid Chamran University of Ahvaz
- SUT, Sharif University of Technology

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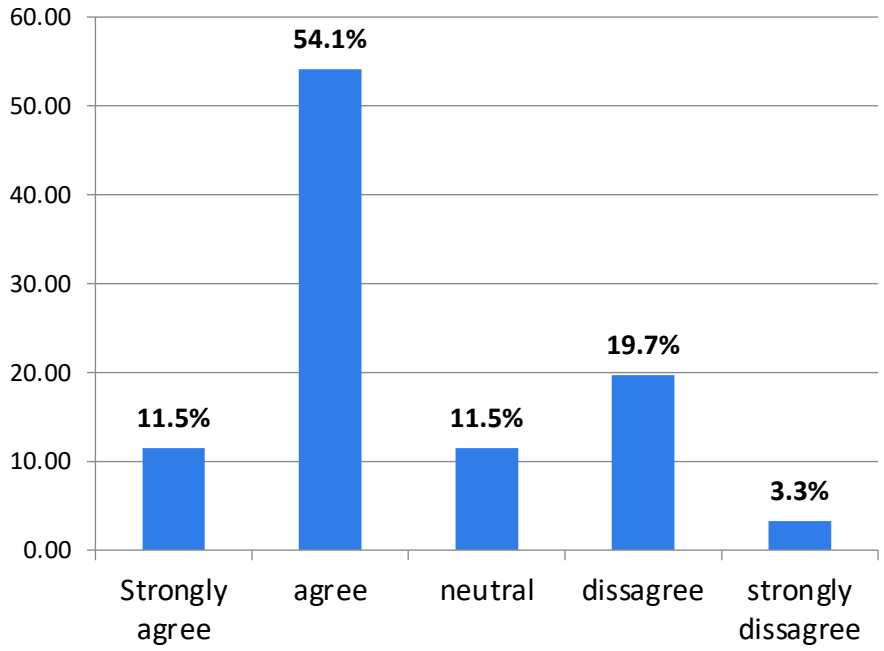
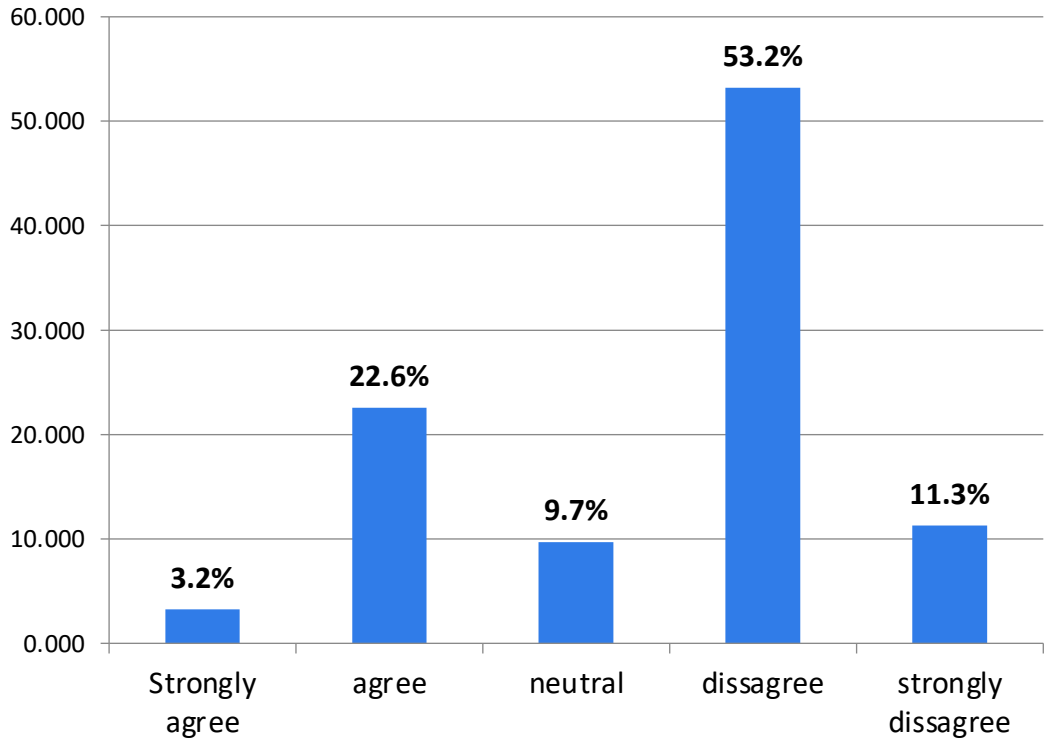
TEL has performed better / more successfully than traditional classes in integrating theoretical and practical training (61).



I emphasize teaching with a theoretical approach rather than an applied one (61).



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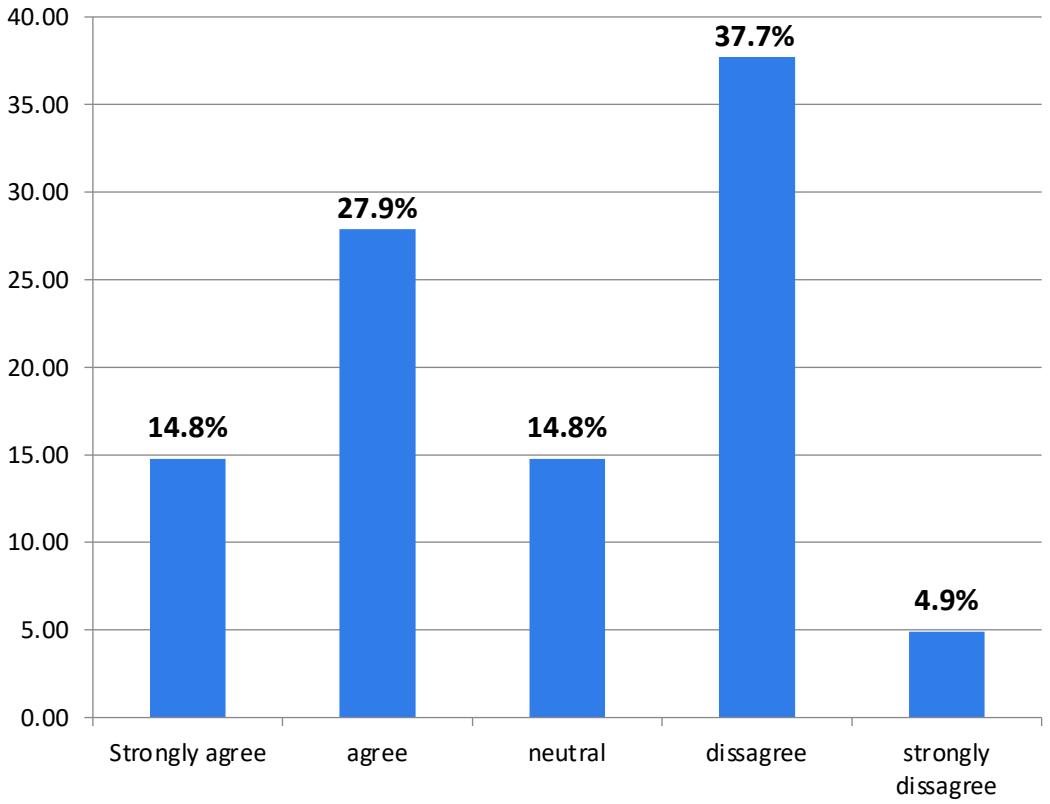
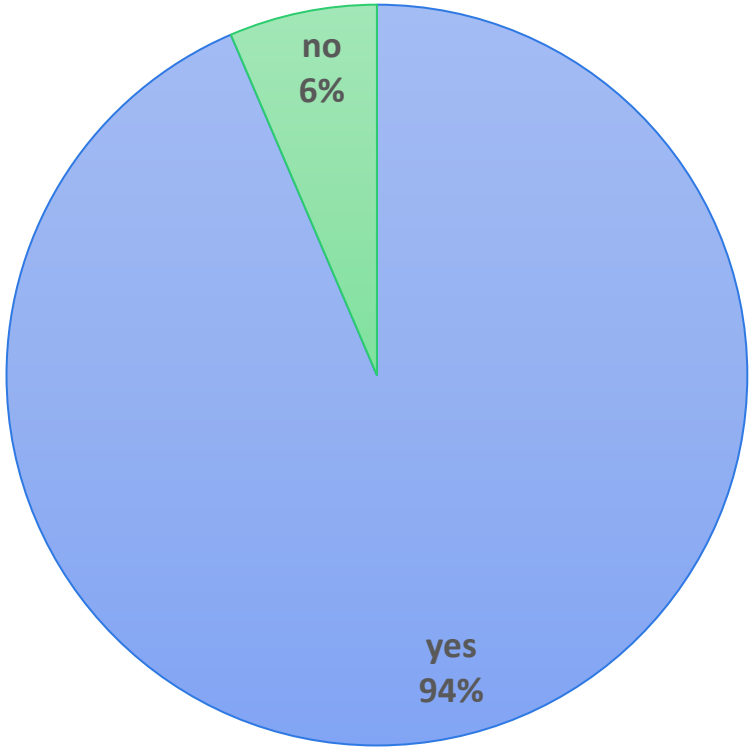
I feel comfortable with practical training online (61).



I think it is useful to get support from online tutors (61)



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Conclusion and important remarks

- **TEL performed more successfully.**
- **Theoretical approach is more popular.**
- **Online tutors are helpful.**

Motivation and self-regulation

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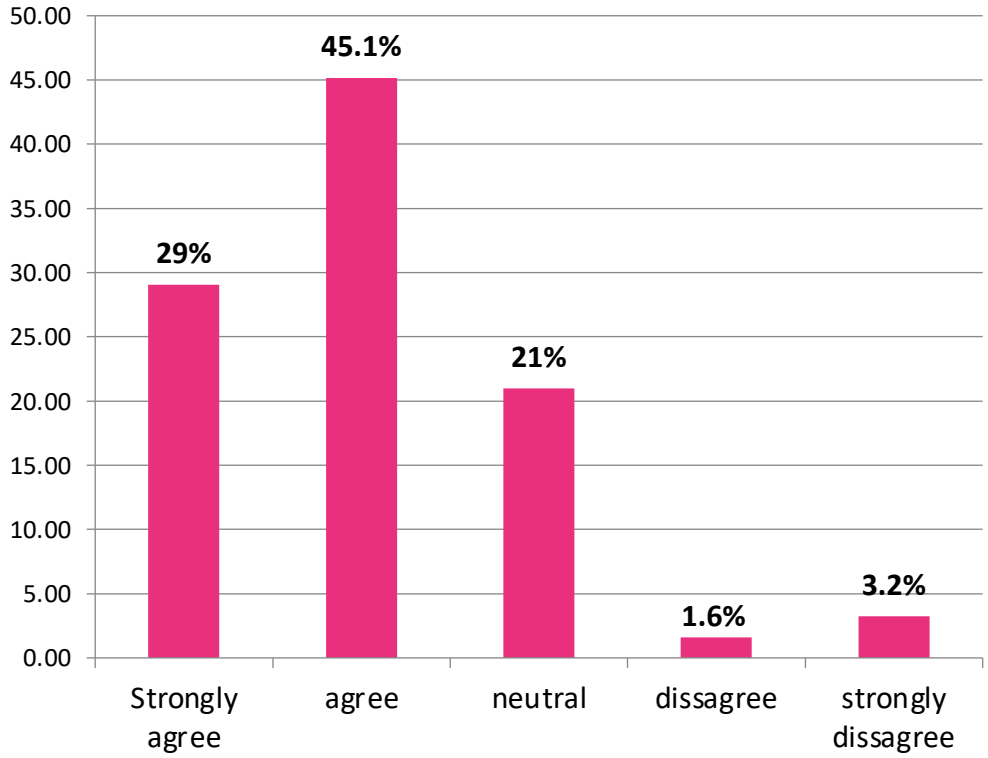
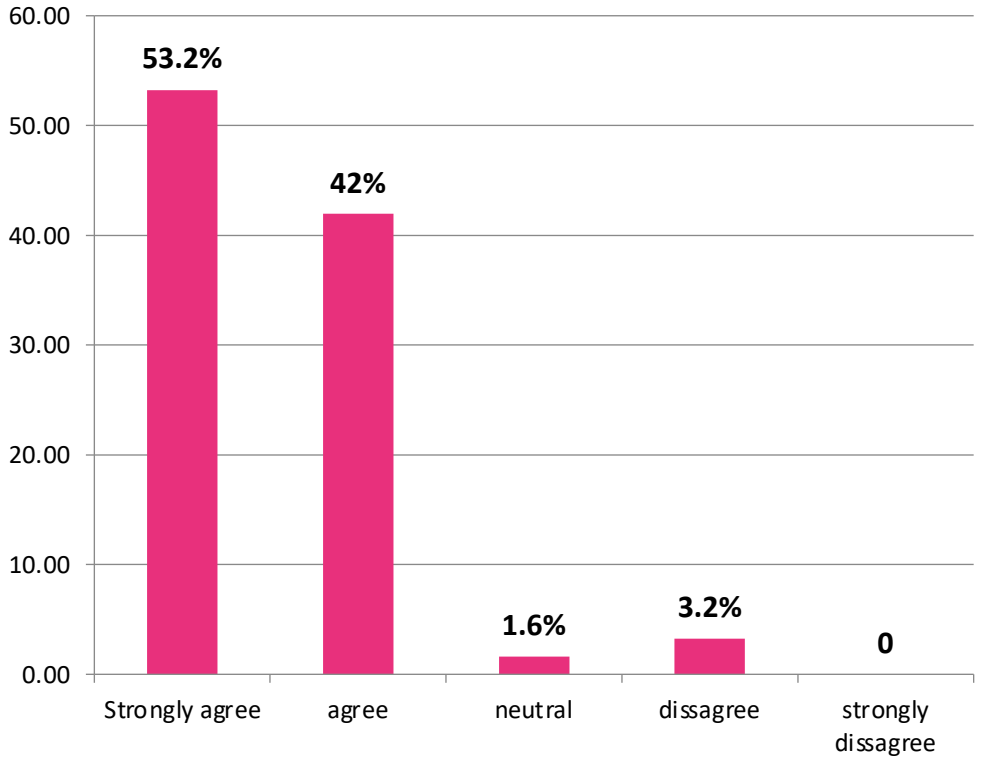
At the beginning of the online course, by examining the short-term and long-term goals of students, I examine their expectations (61).



I try to make students play a more active role in the learning process (61).



Motivation and self-regulation

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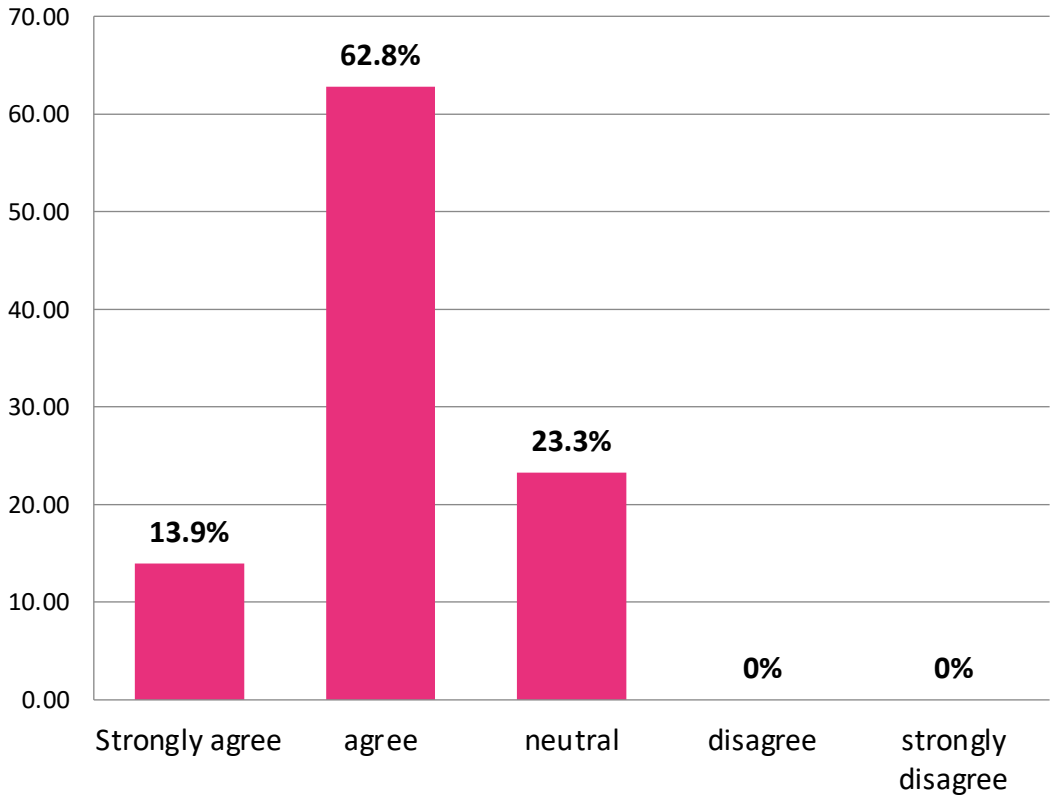
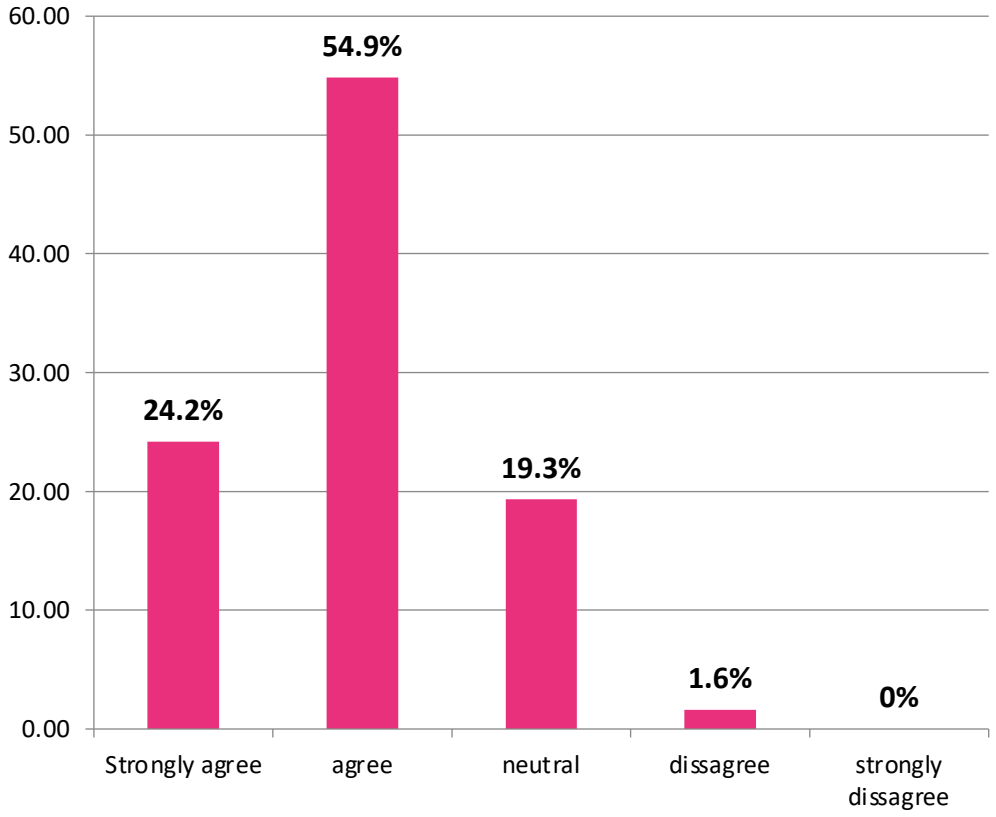
TEL changes the role of the teacher (previously I was just a transmitter of knowledge but now I direct and facilitate the students' learning process (61).



I use different elements of the ARCS model to motivate students to learn better online (61).



Motivation and self-regulation

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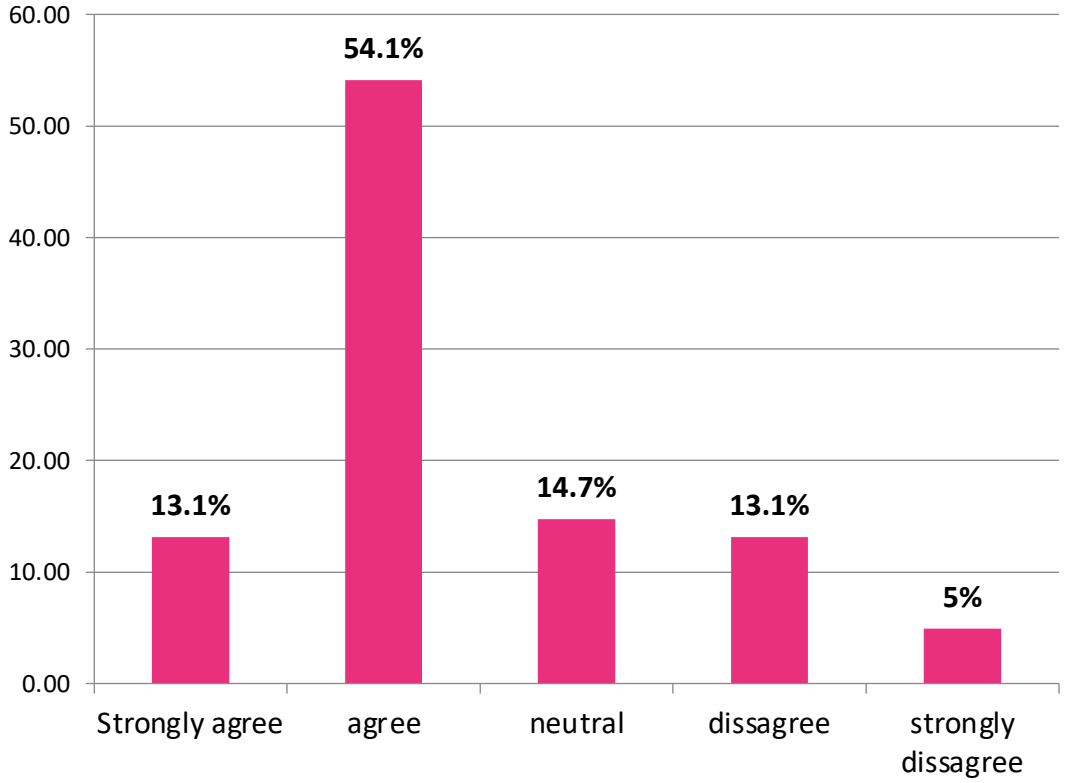
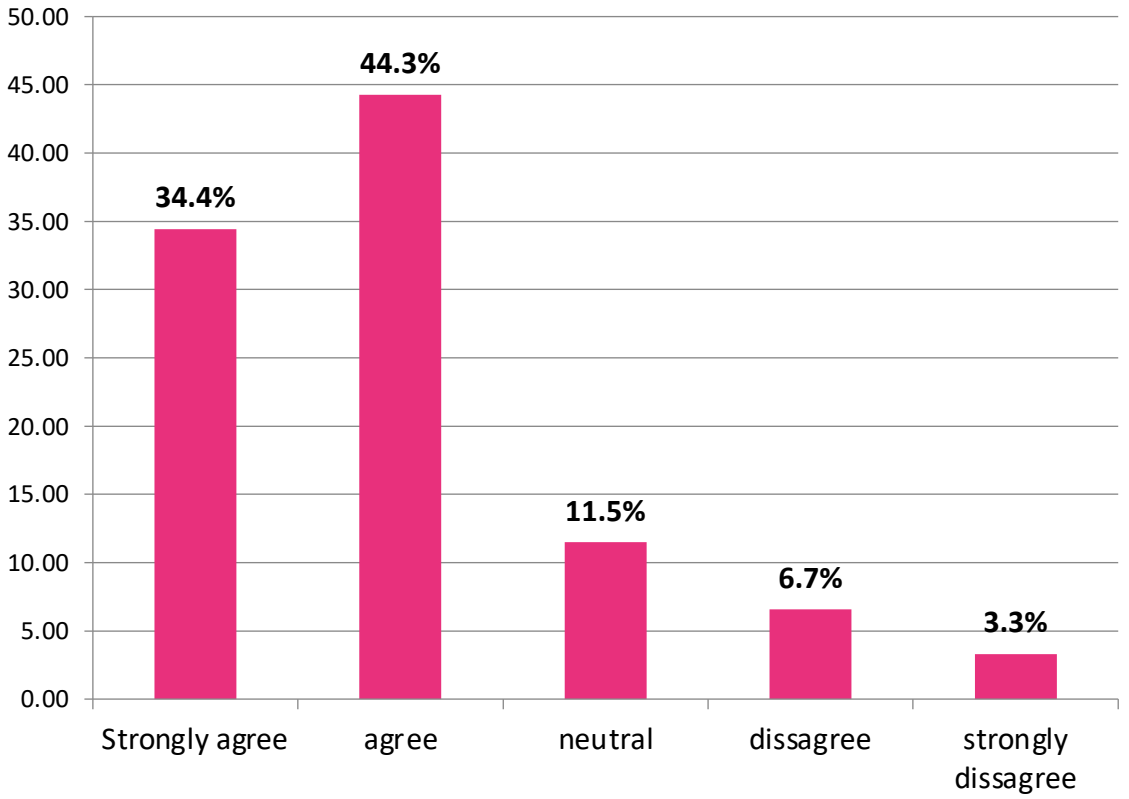
I believe that students can better manage their learning process when using TEL (61).



I am more interested in using TEL in my teaching (61).



Motivation and self-regulation

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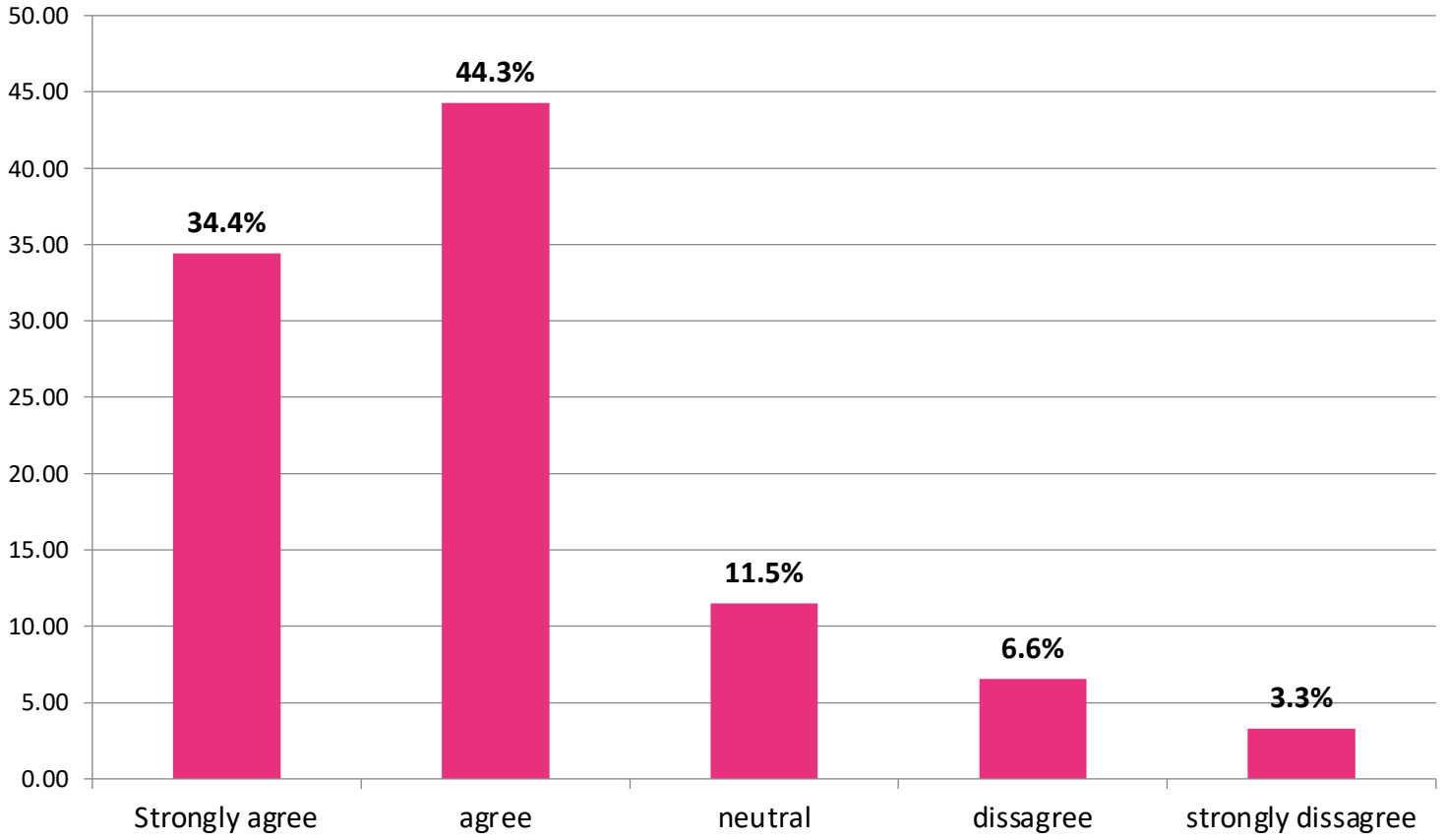
University administrators encourage professors who use online education (61).



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Conclusion and important remarks

- **Goals and expectation of students is considered.**
- **Professors try to make students more active.**
- **ARCS model is used by Professors.**
- **TEL has changed their roles.**
- **They are using TEL now and are interested to use TEL in their courses.**

Knowledge, Skill and Attitude

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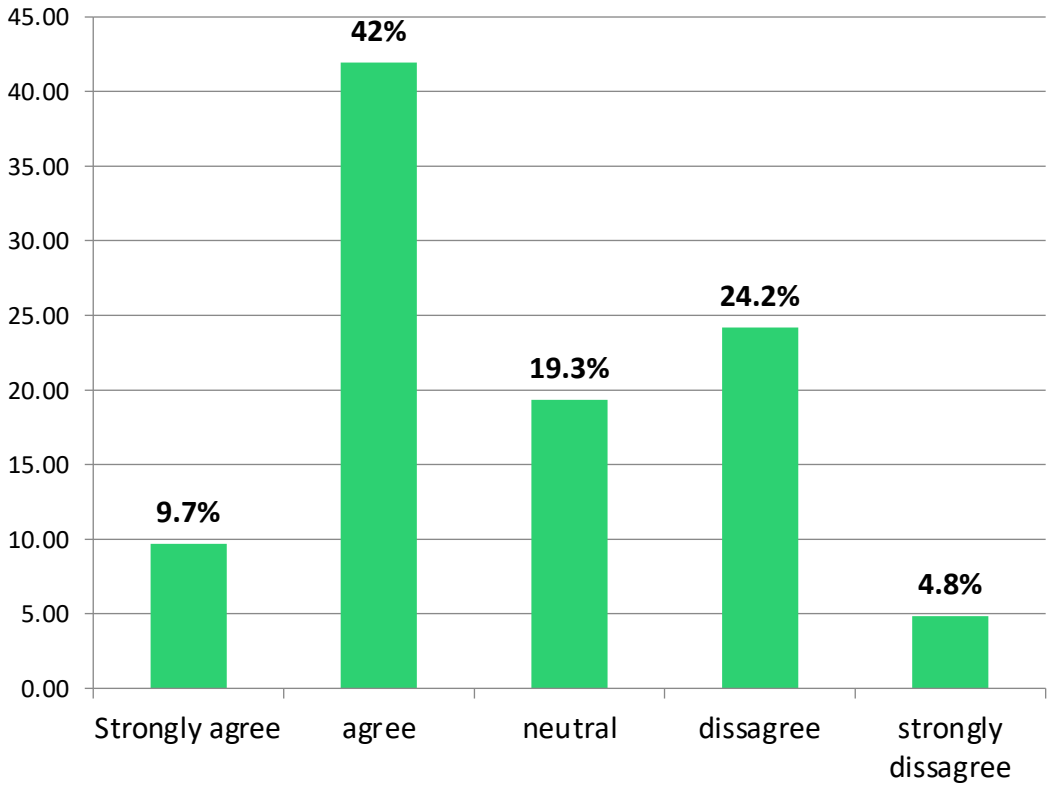
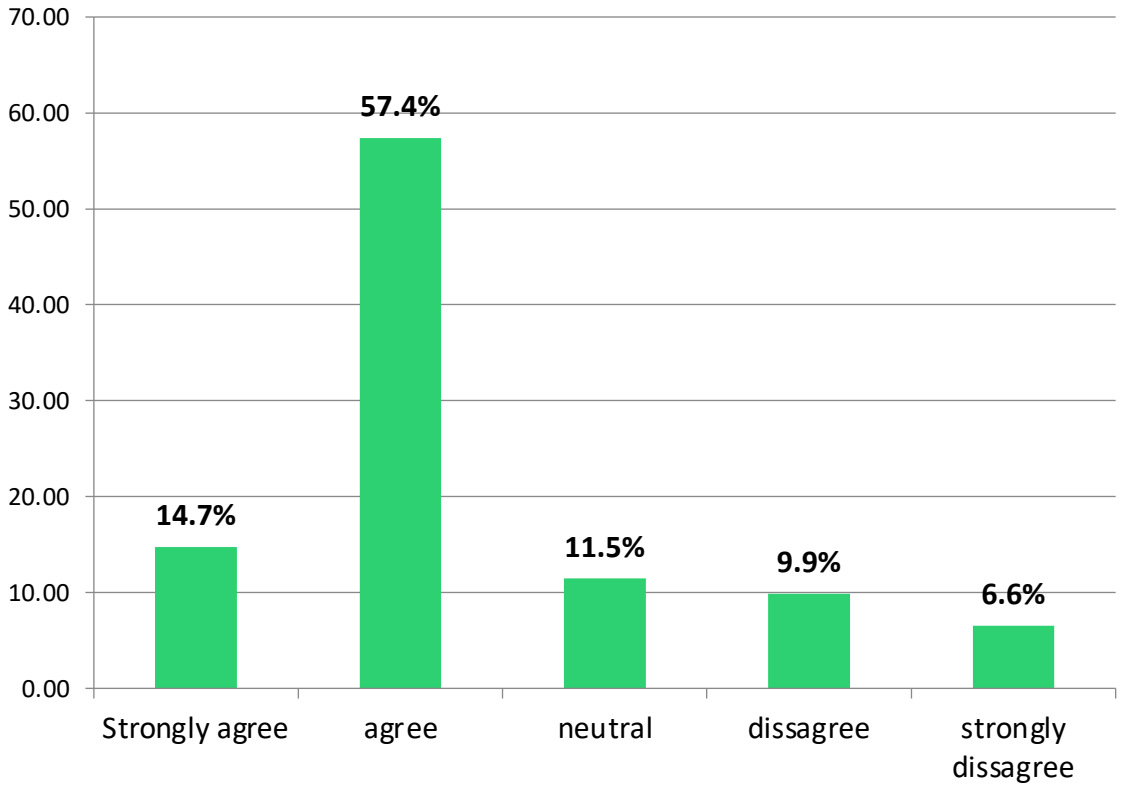
I believe TEL is effective in providing hard skills(53).



I believe TEL is effective in providing soft skills (52)



Knowledge, Skill and Attitude

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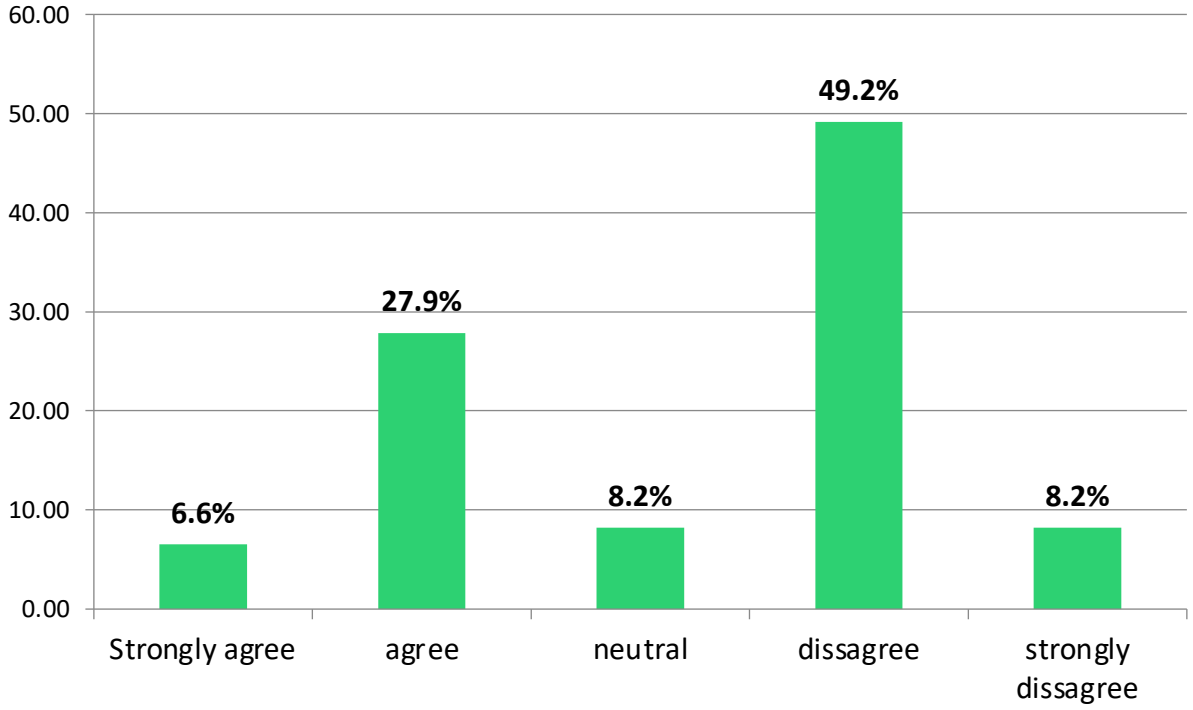
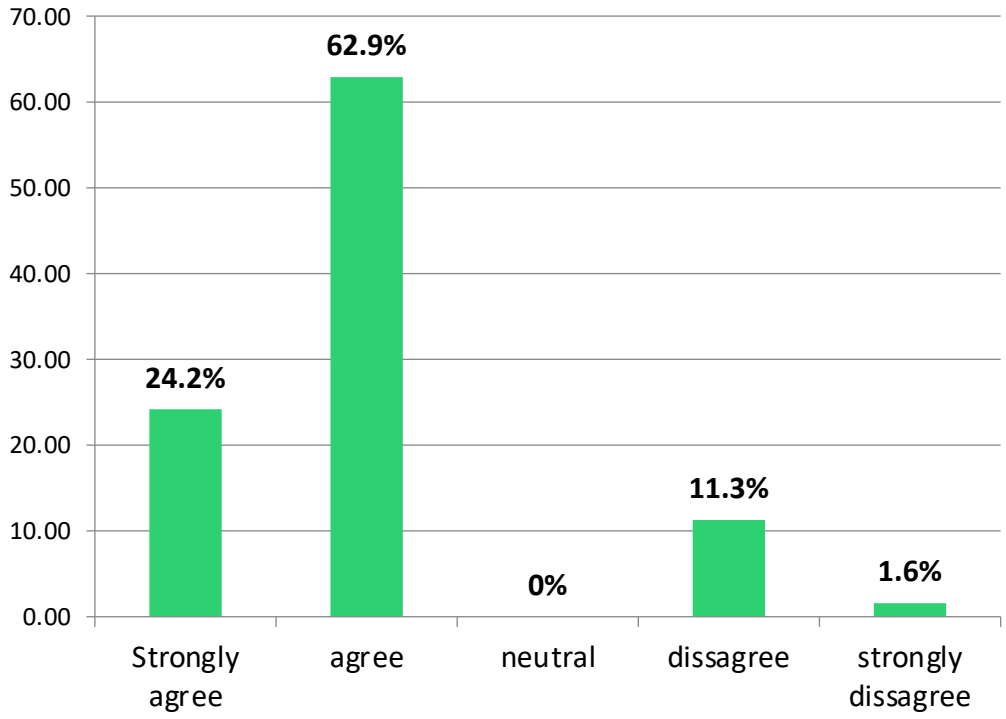
Online learning is suitable for teaching any skill regardless of the type of lesson (practical and theoretical) (61).



I believe instructional videos, simulation tools, and virtual or remote labs can help students learn engineering skills (61).



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Conclusion and important remarks

- **Professors believe that TEL is effective in soft- and hard-skills of students.**
- **Online learning is suitable for every course.**

Working-life orientation

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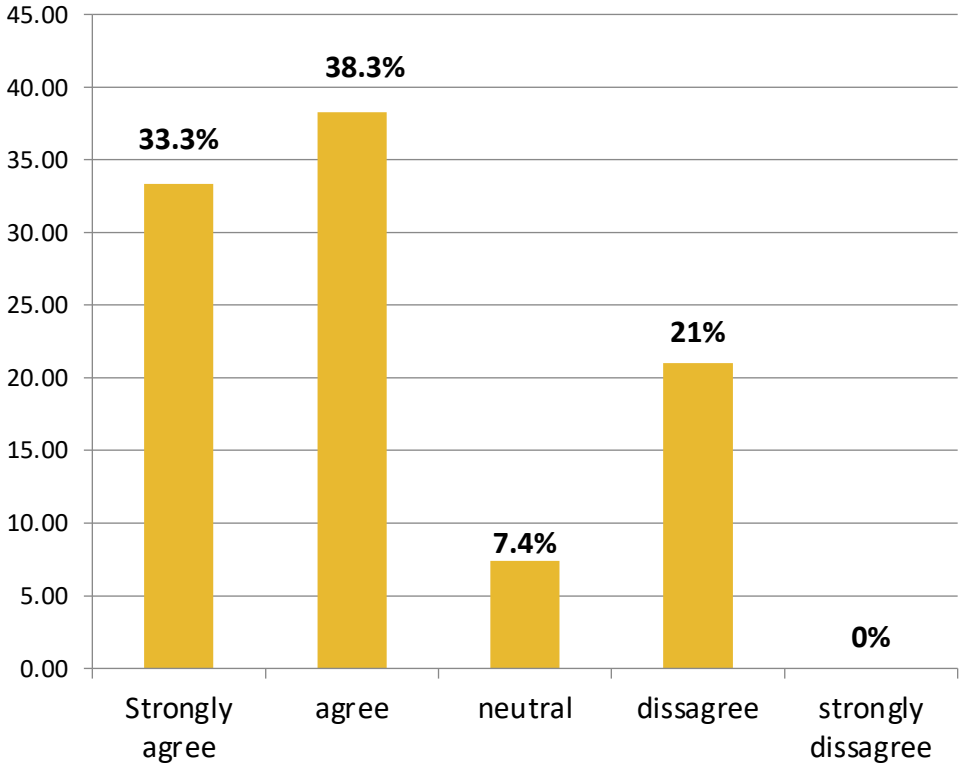
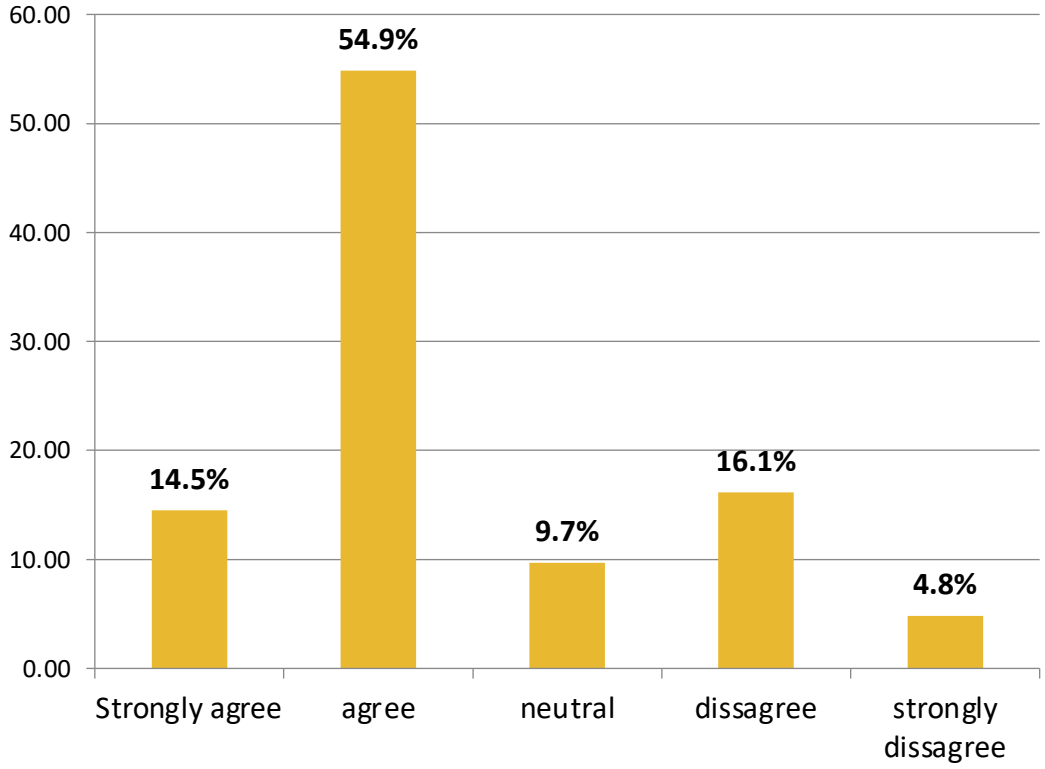
In online education, education is difficult according to the individual interests and abilities of the students(53).



TEL provides more flexibility in my teaching(54).



Working-life orientation

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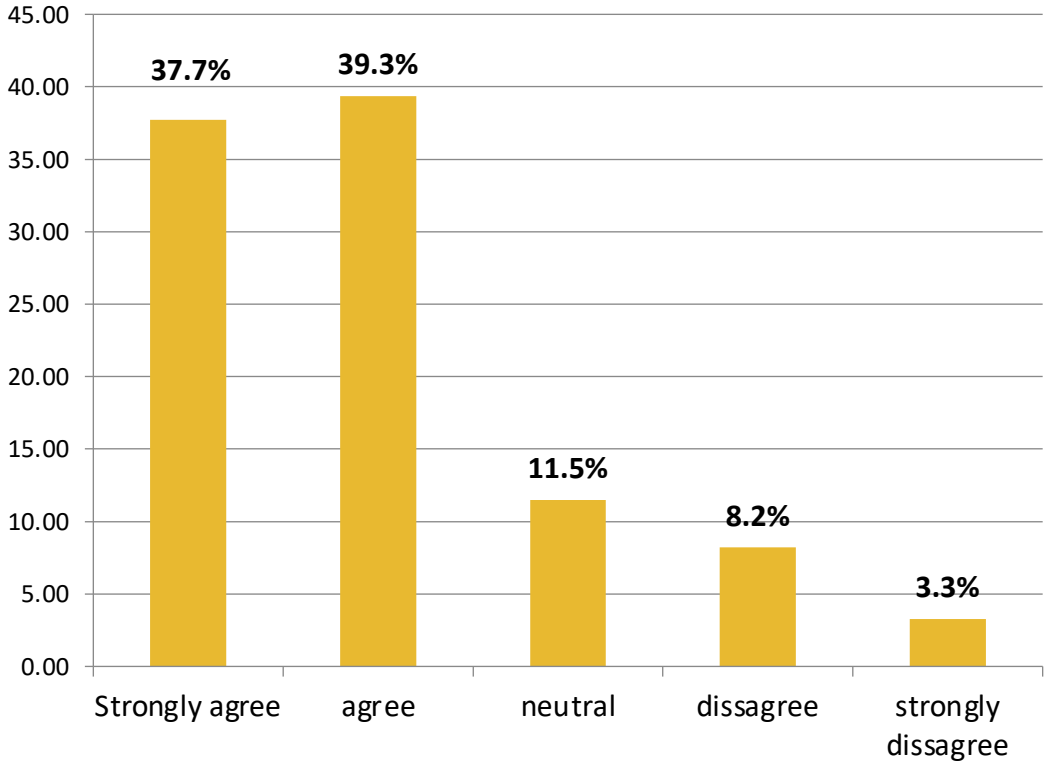
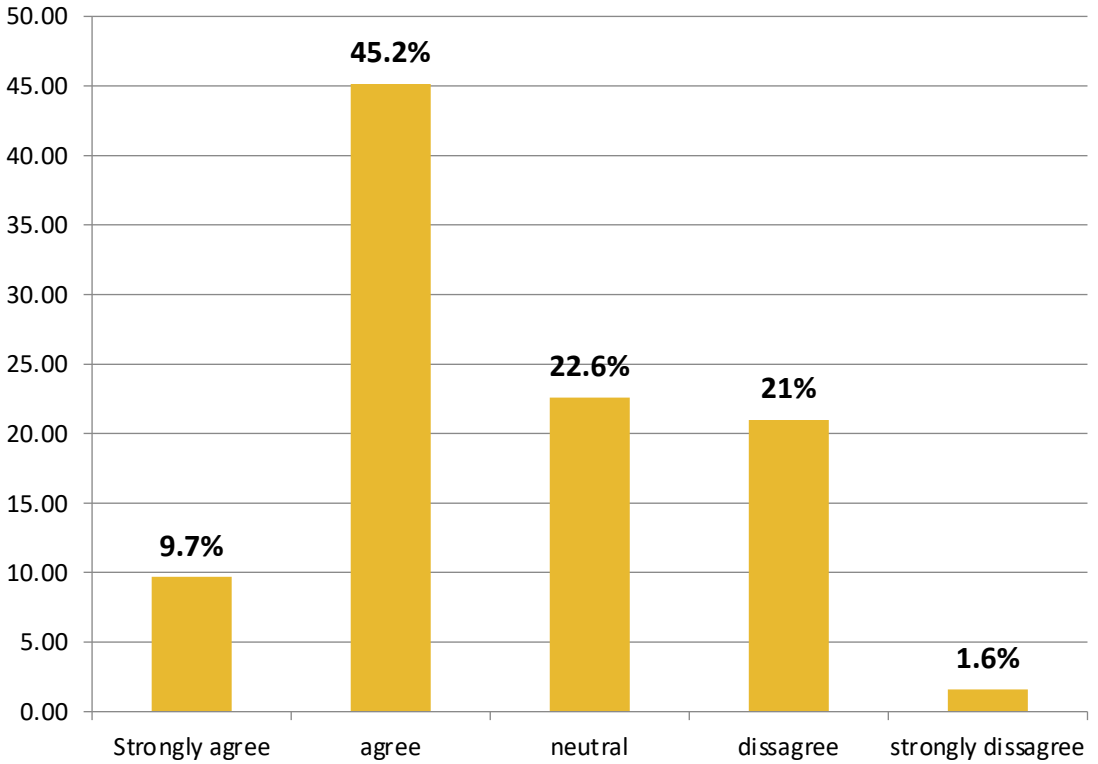
I believe that the curriculum should be revised and more in line with the online environment (61).



TEL has led me to use a variety of assessment methods (61).



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Conclusion and important remarks

- **TEL provided a variety of assessments models but not a tailor-maid one.**
- **Curriculum needs a re-planning to adopt with TEL.**

Pedagogy in TEL and teaching culture

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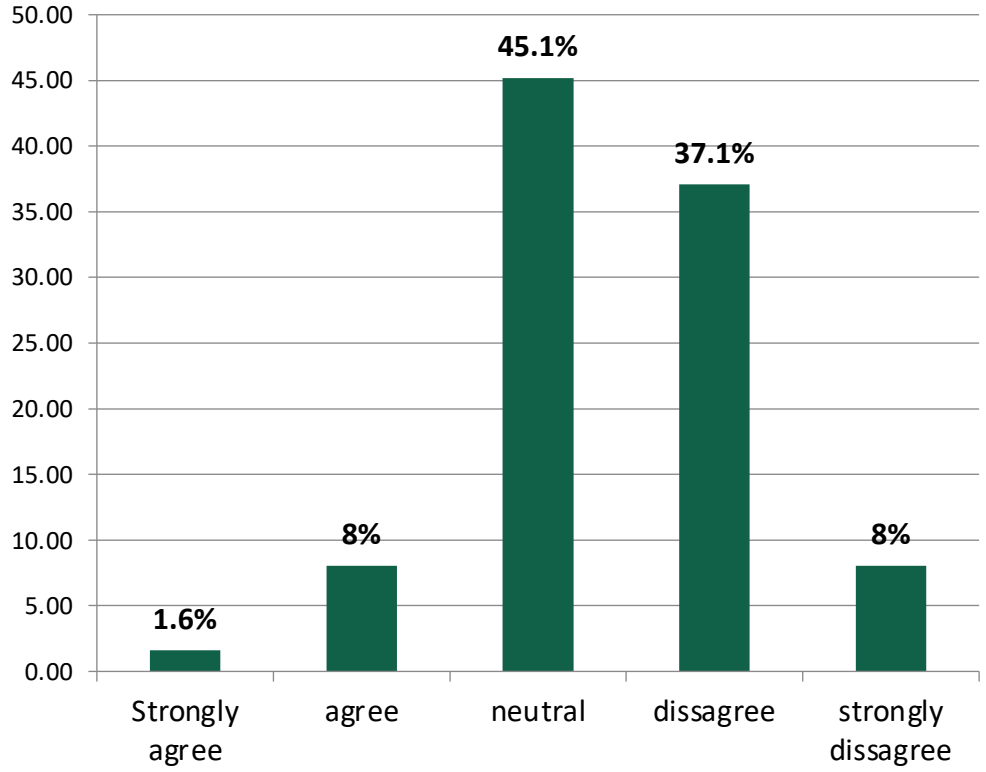
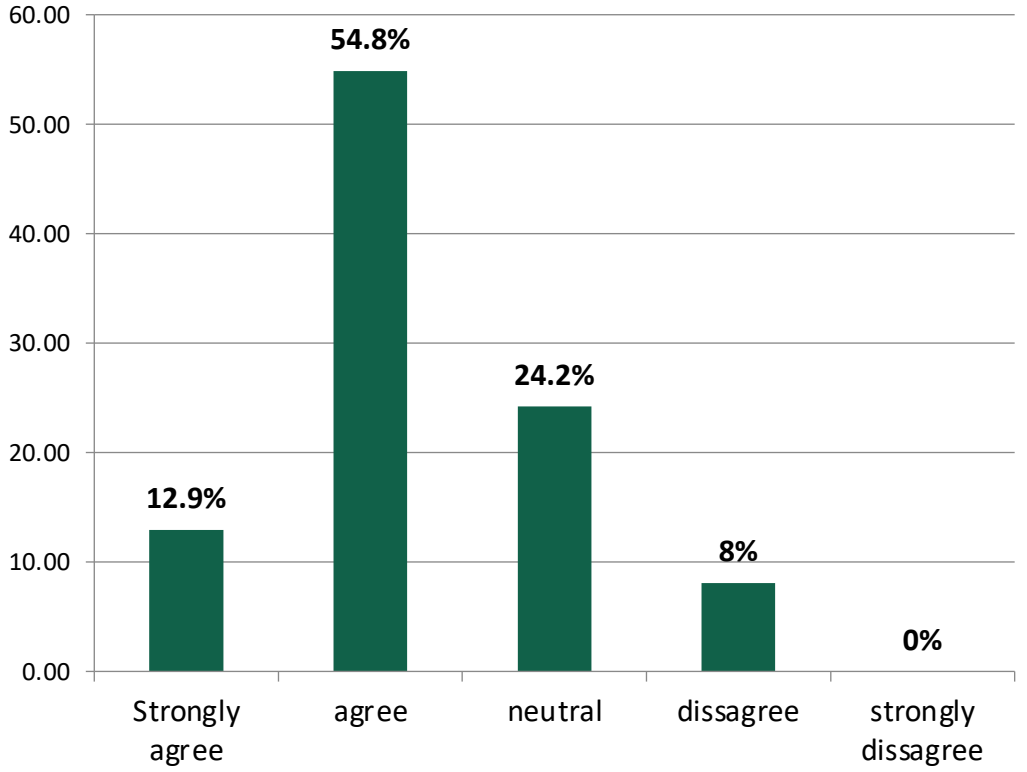
In online learning environment, there is no need to use pedagogical teaching methods (61).



I am satisfied with the technical support provided by the university in online education (61).



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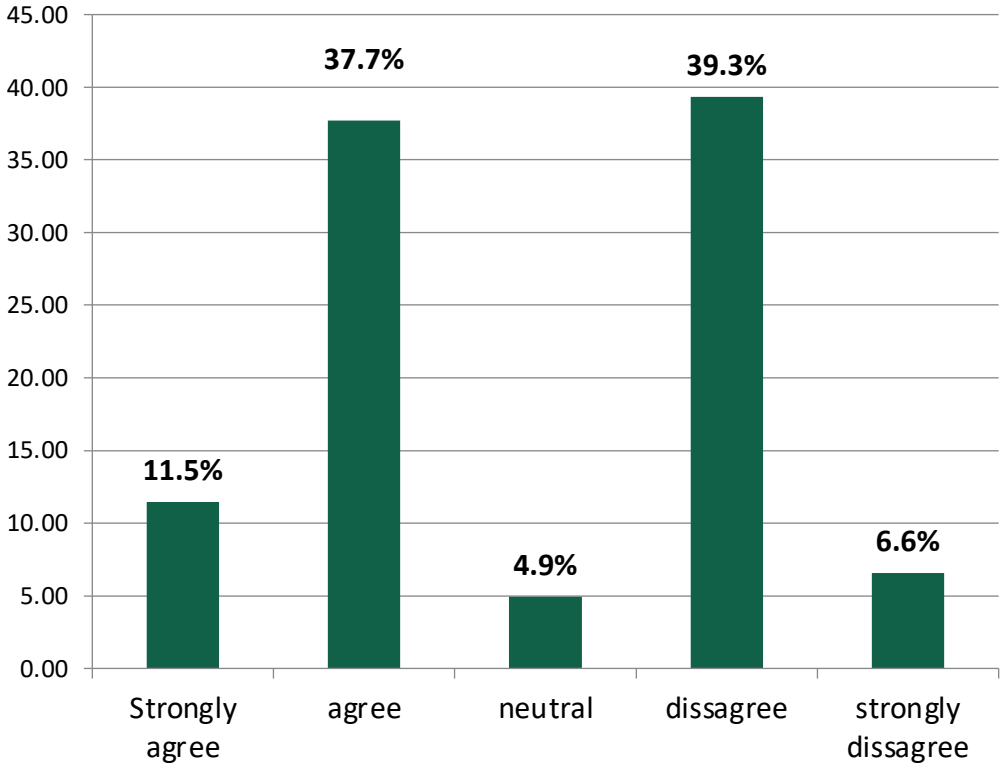
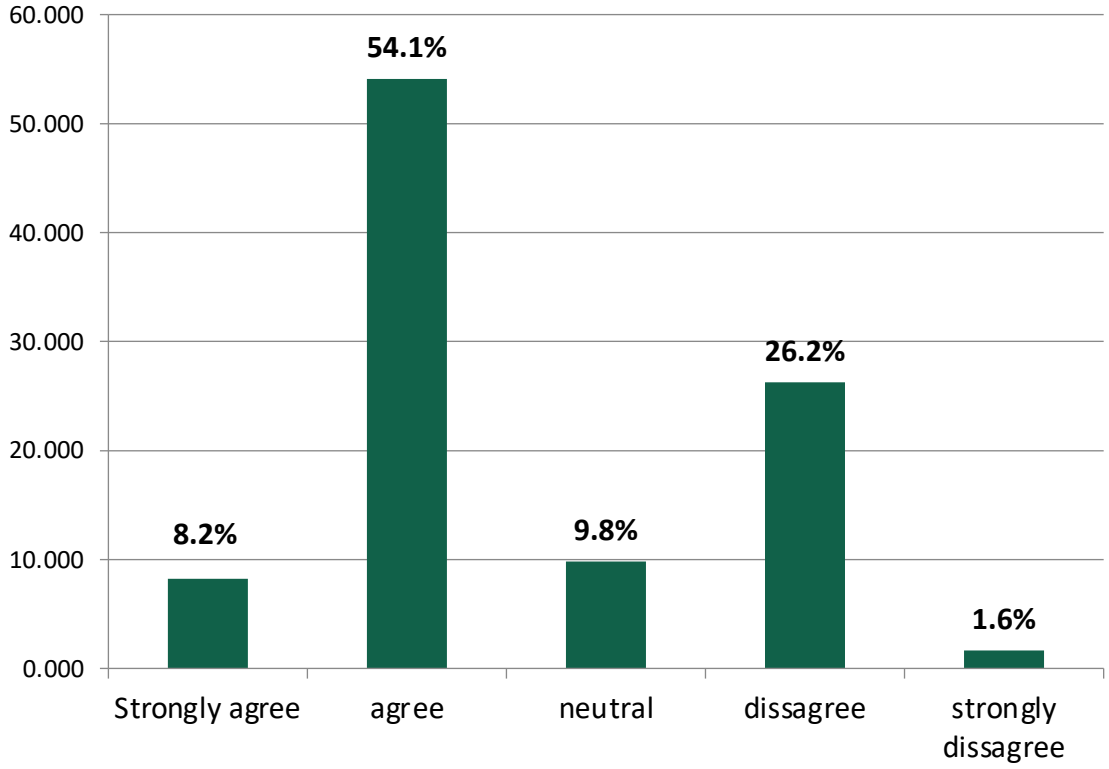
Active learning can be better implemented in online learning environment (61).



It is difficult to provide feedback to students in online education (61).



Pedagogy in TEL and teaching culture

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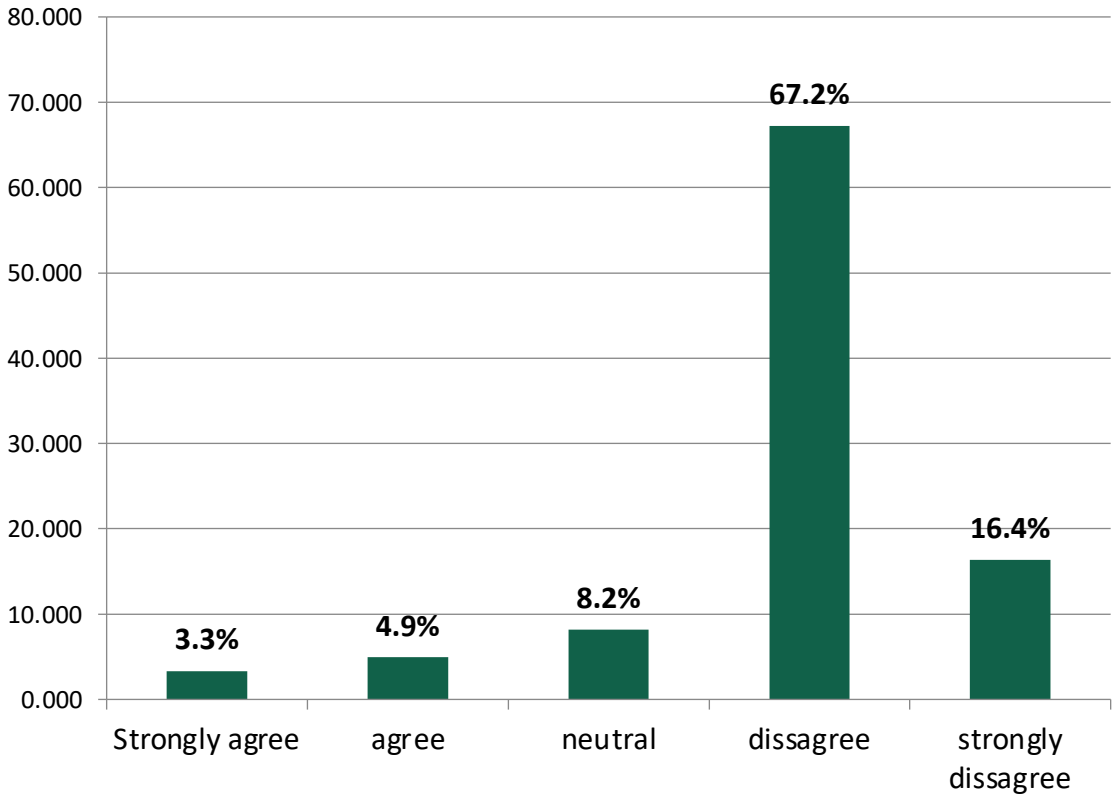
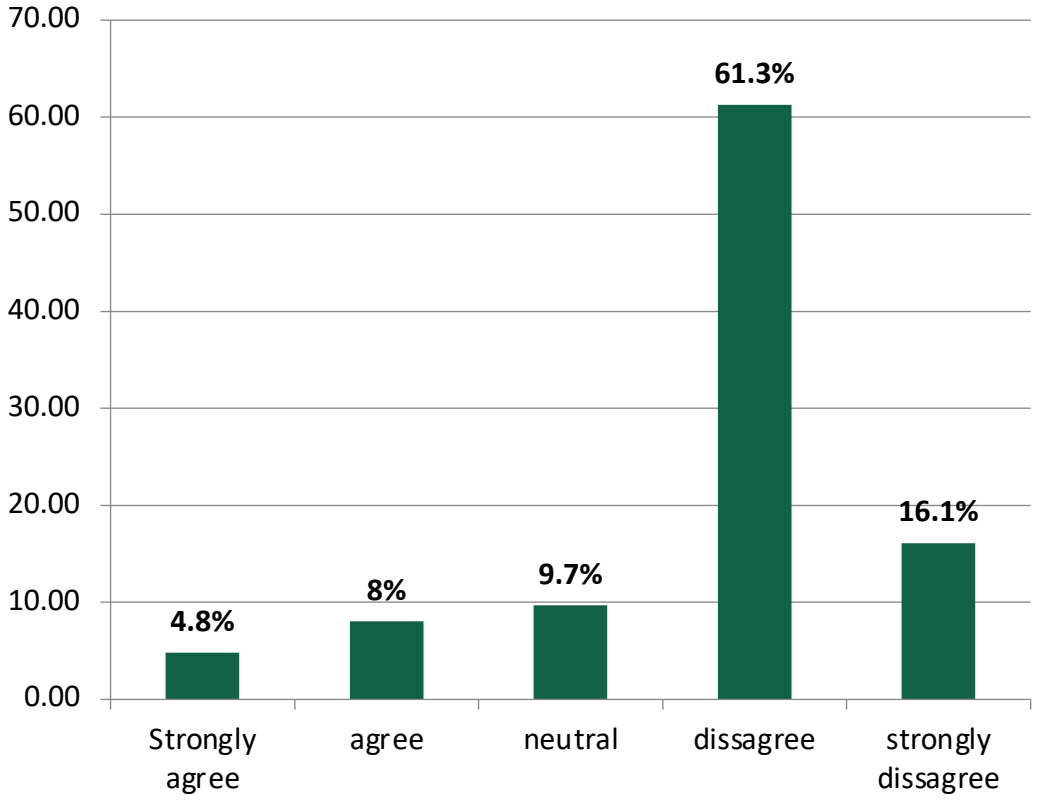
I am more familiar with traditional teaching methods and can not adapt to online teaching method (61).

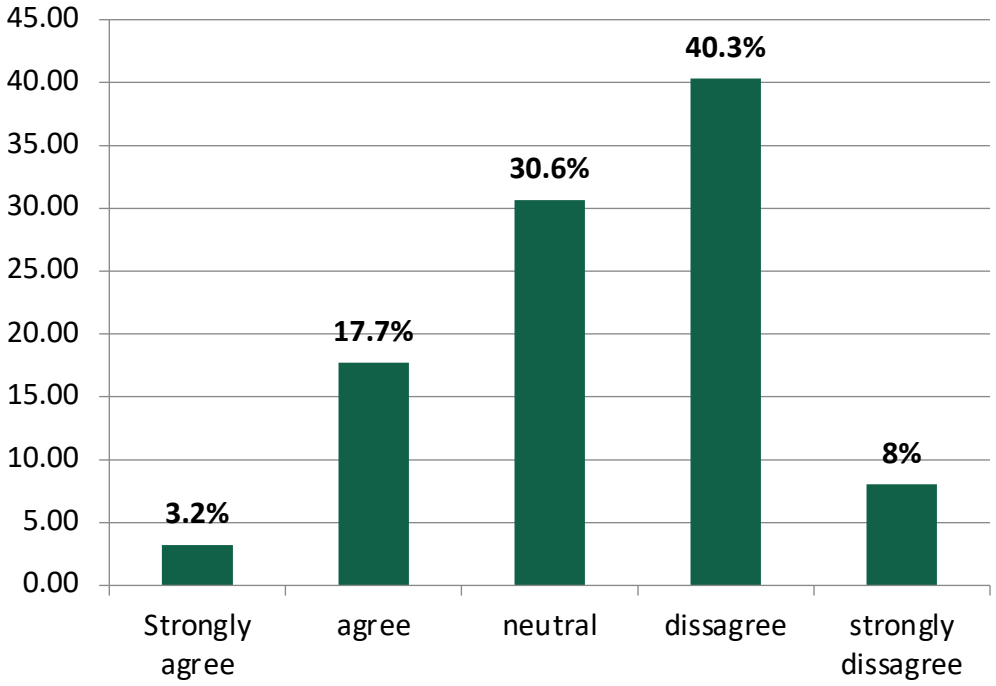


I believe TEL does not need special content and the content of traditional classes can be used for online education (61).

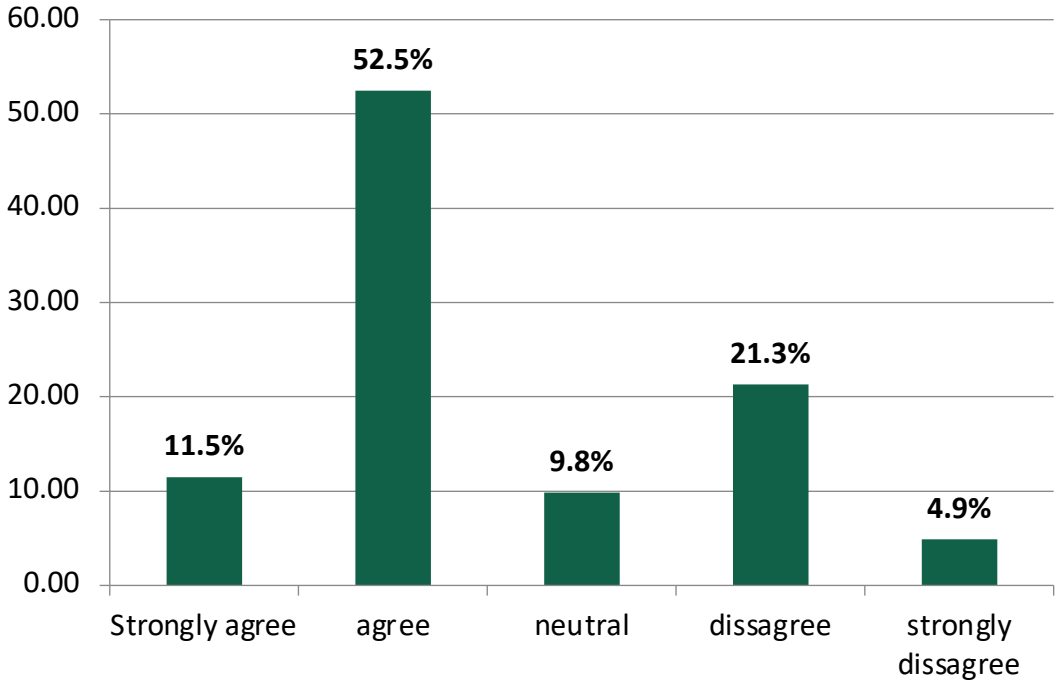


Pedagogy in TEL and teaching culture

The university has specific programs to support professors in their competency development, including new methods of teaching and assessment in the online environment (54)



The University holds short-term seminars and / or specific workshops to increase the skills of professors in designing TEL-based training (53)



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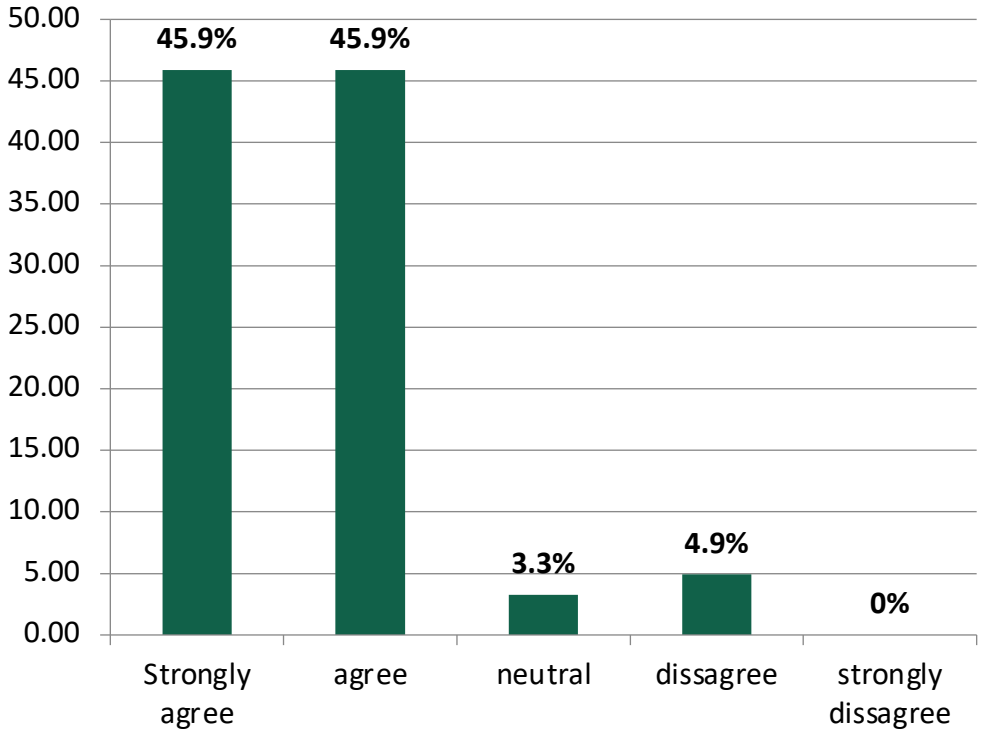
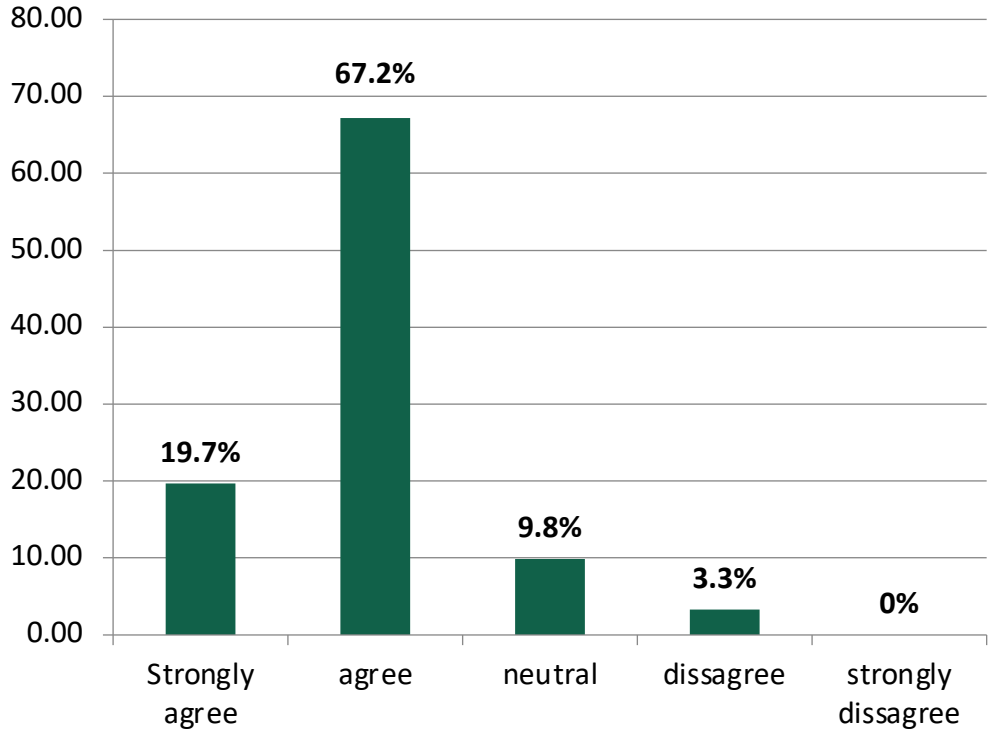
More preparation is needed to hold an online class (52).



I share my views on research activities with my colleagues (56).



Pedagogy in TEL and teaching culture

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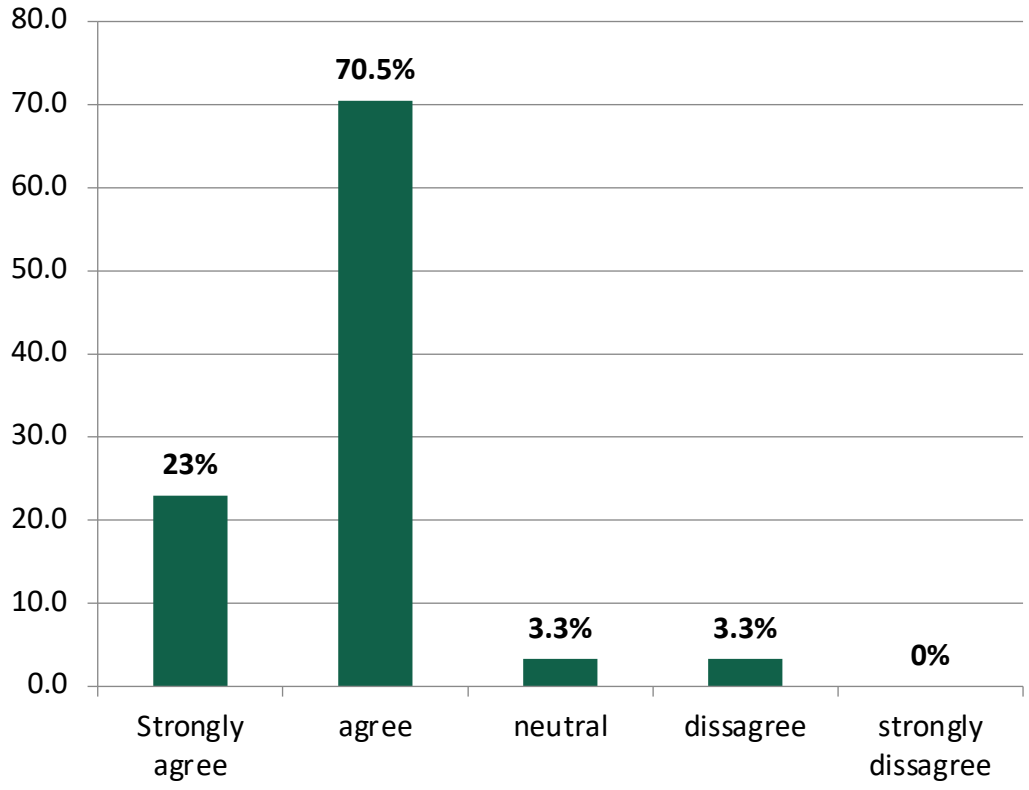
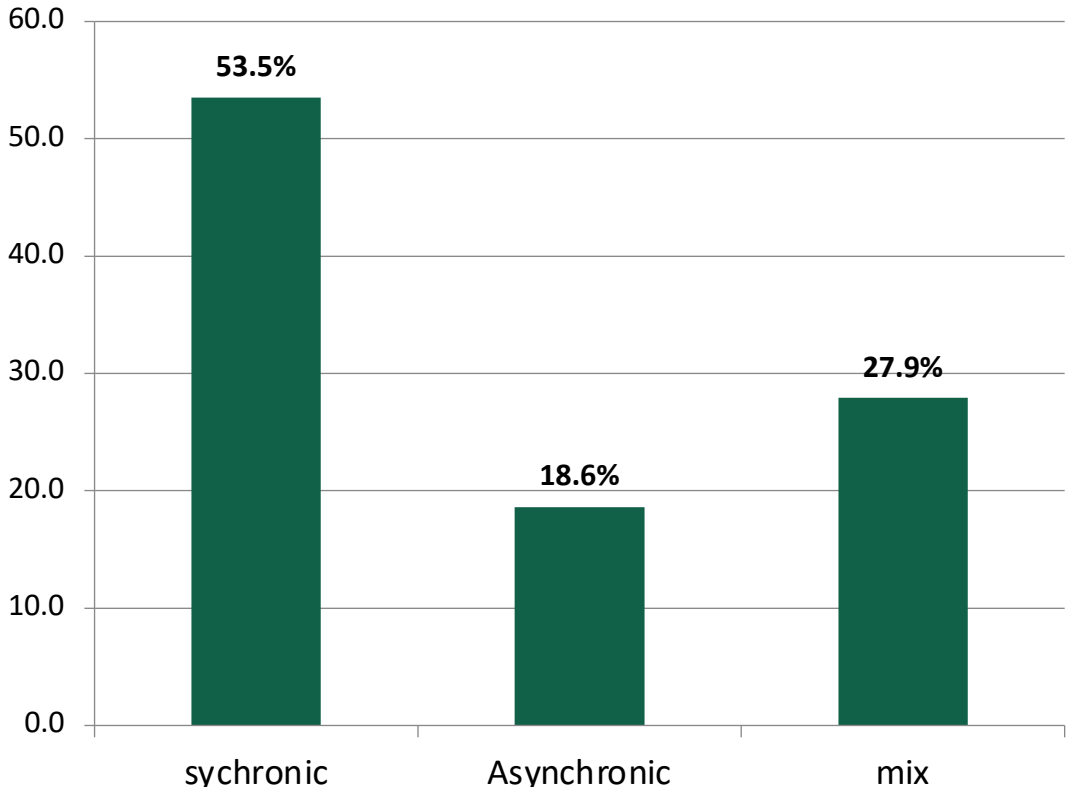
I share my views on educational activities with my colleagues (53).



What methods have you used in your online class? (54)



Pedagogy in TEL and teaching culture

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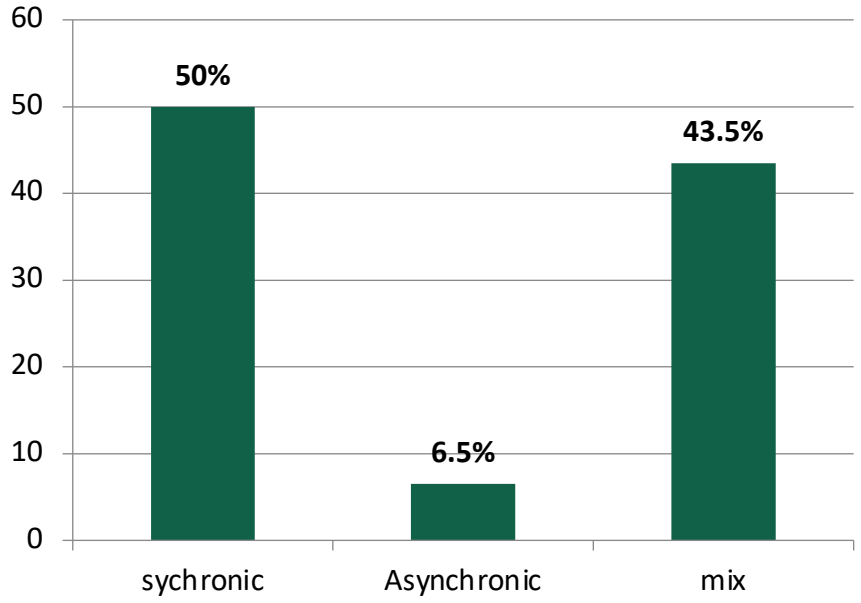
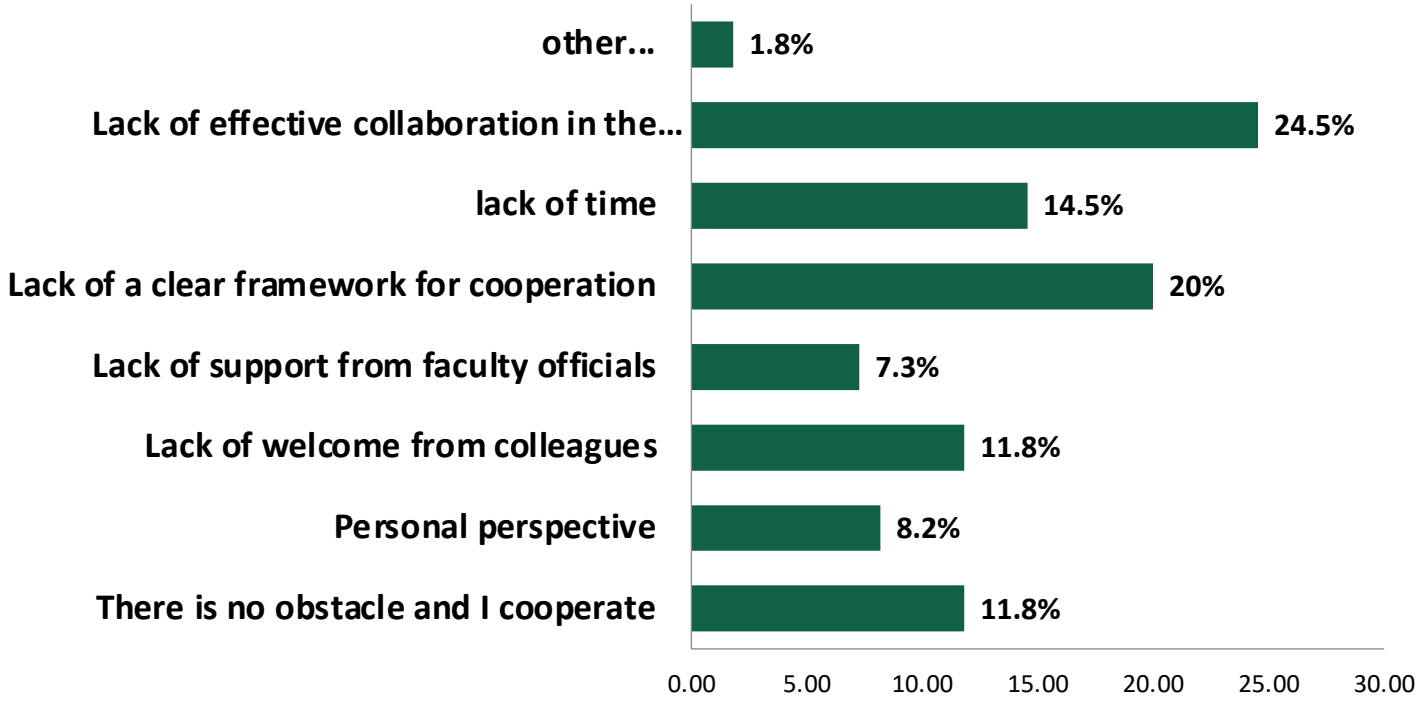
Which method do you think is more effective for online learning?(54)



What do you think hinders the interaction and cooperation between you and your colleagues in the implementation of online education?(53)



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Conclusion and important remarks

- **Providing feedback in TEL in difficult.**
- **More preparation is needed**

ICT tools

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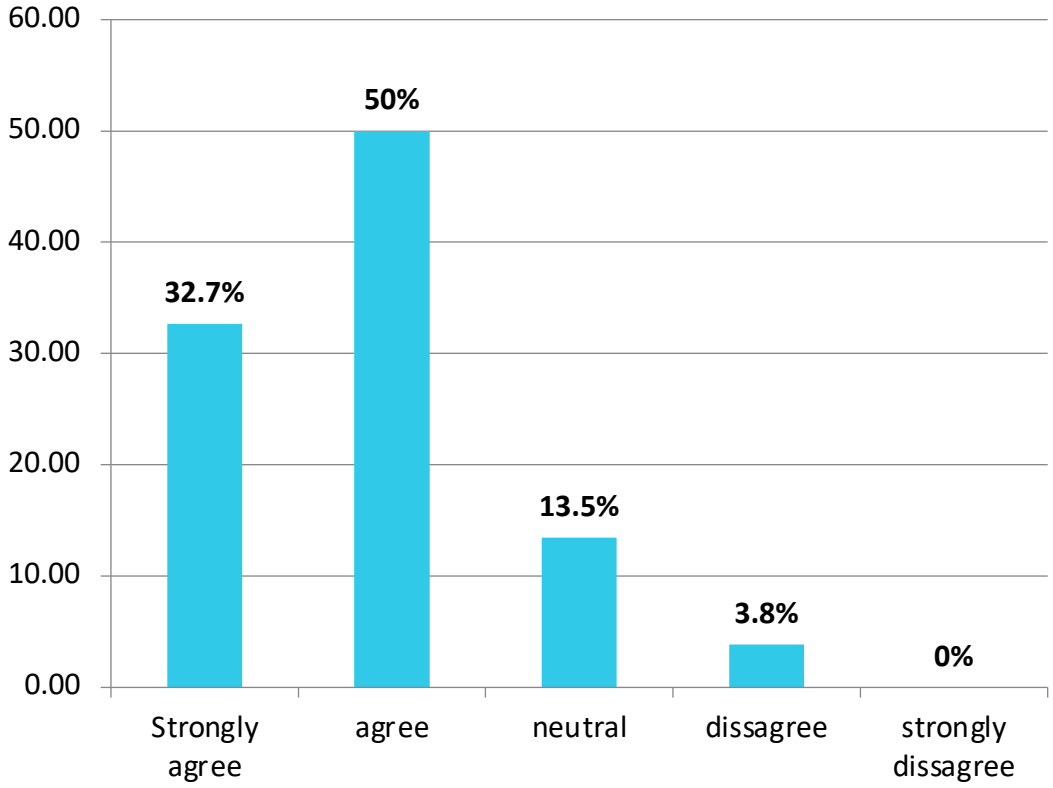
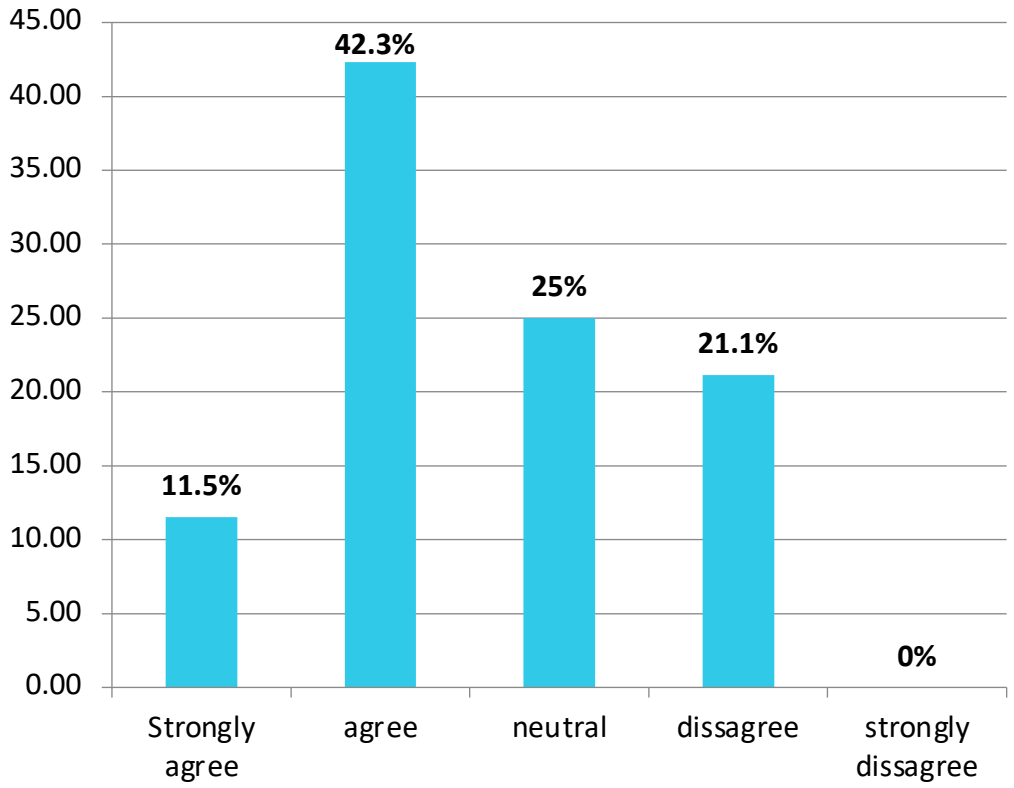
I was happy with the LMS(54).



I know how I can monitor student activity using the LMS automated reporting tool(53).



ICT tools

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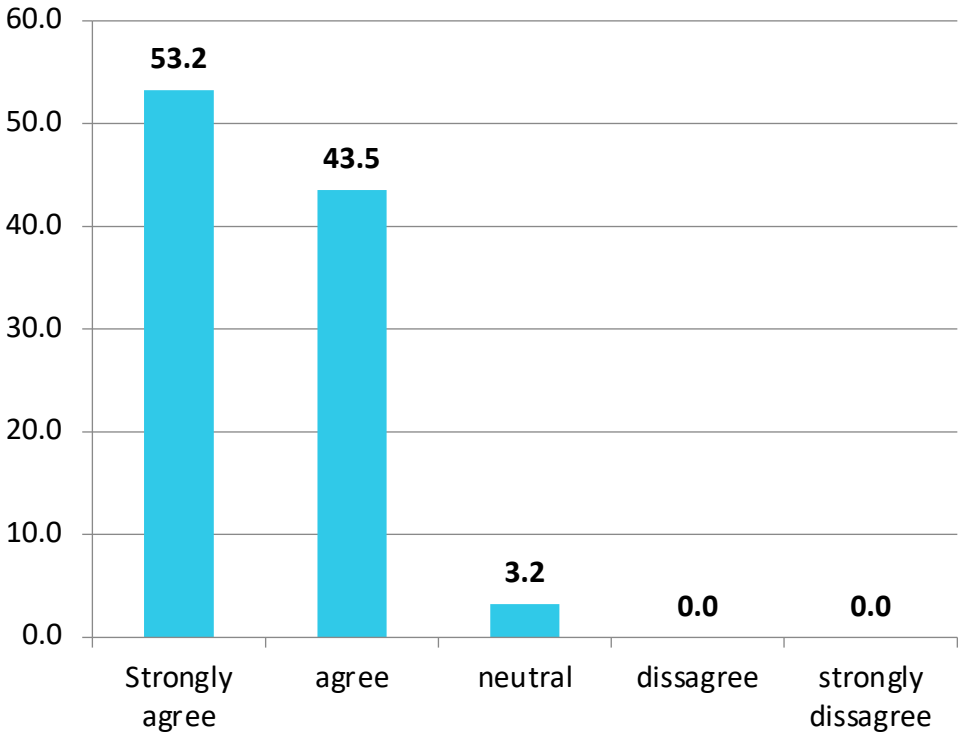
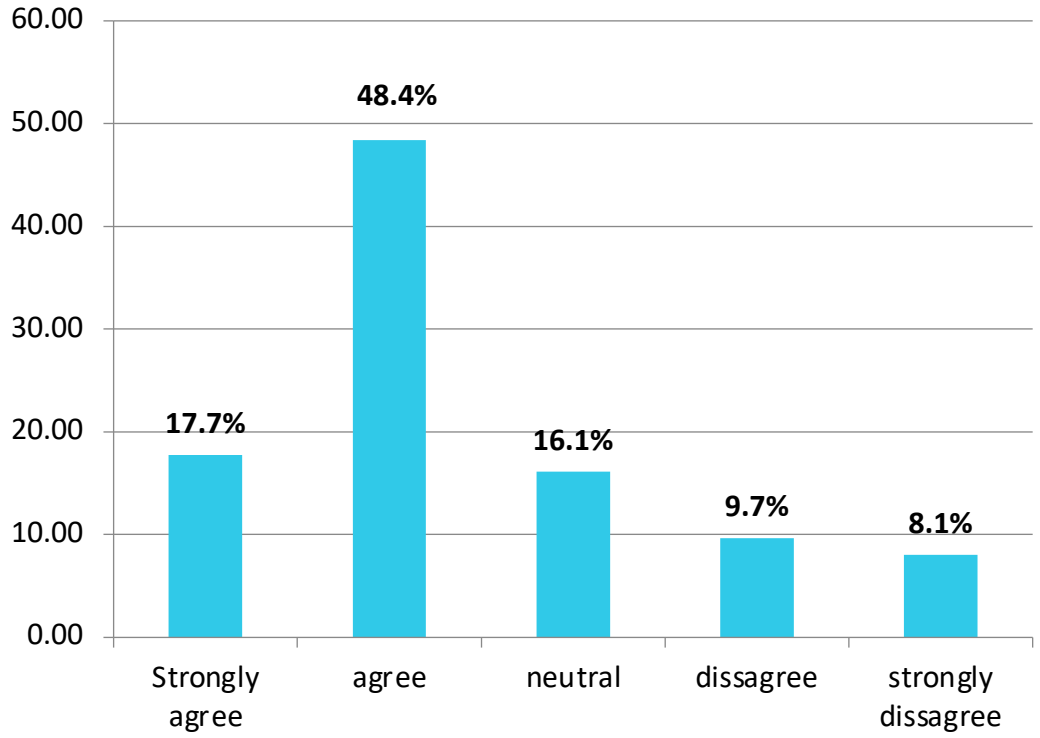
All instructors should be trained in the use of online learning management systems (61).



User-friendly online learning management systems (61).



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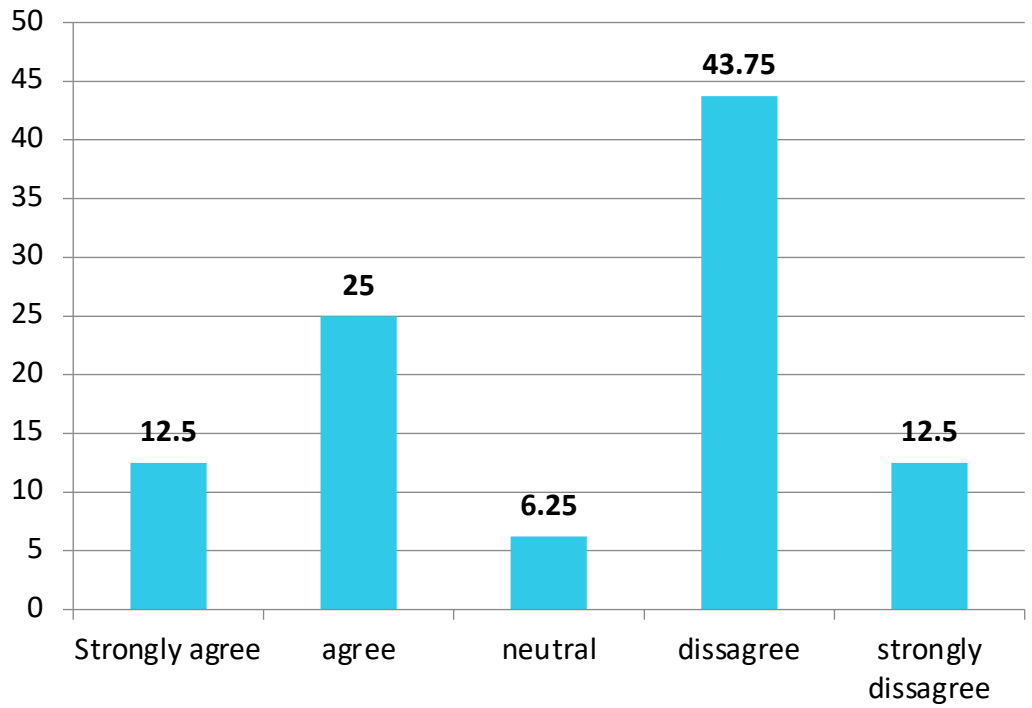
I think virtual labs allow students to make the same impression as in-person engineering and STEM training (61).



ICT tools

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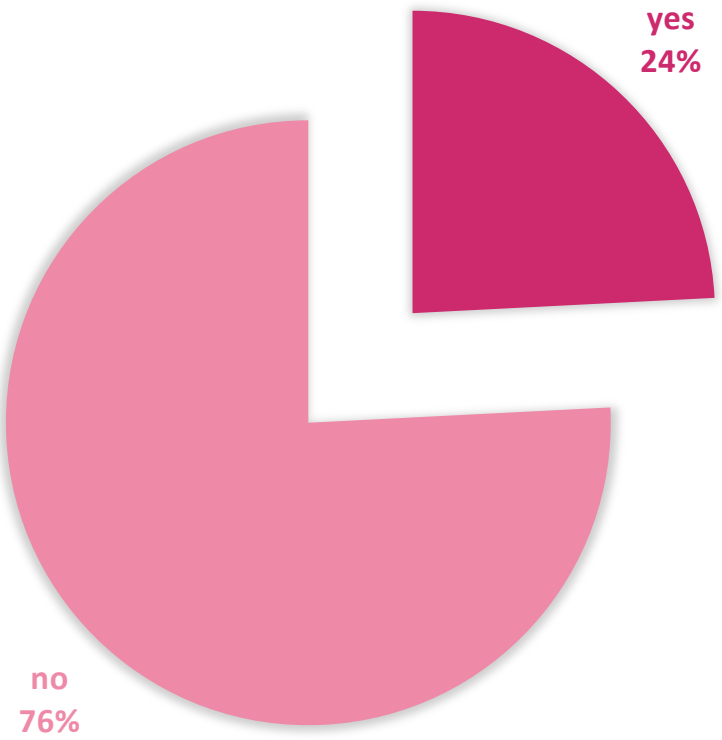
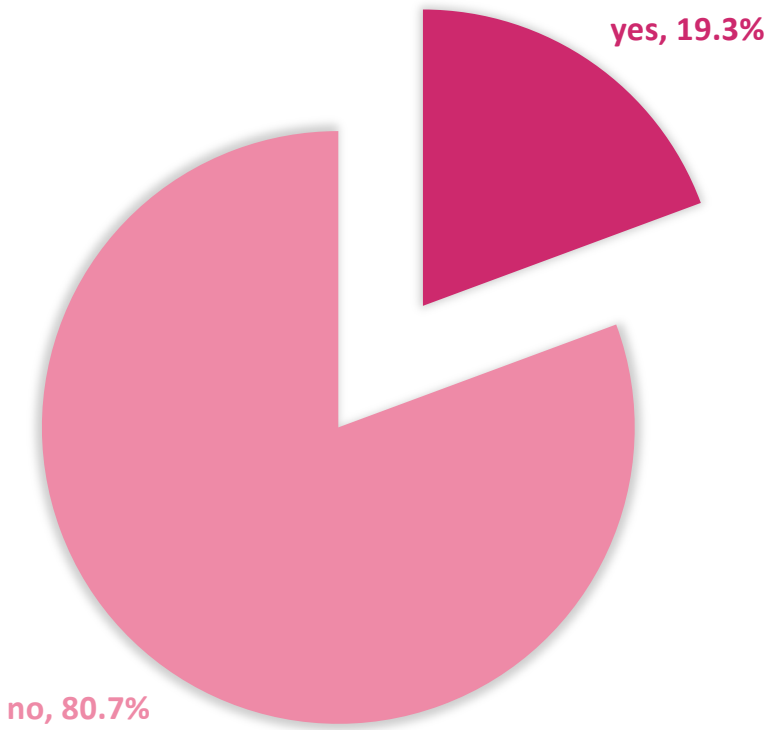
Do you have virtual lab experience in your teaching? (61)



Do you have the experience of distance labs in your teaching? (61)



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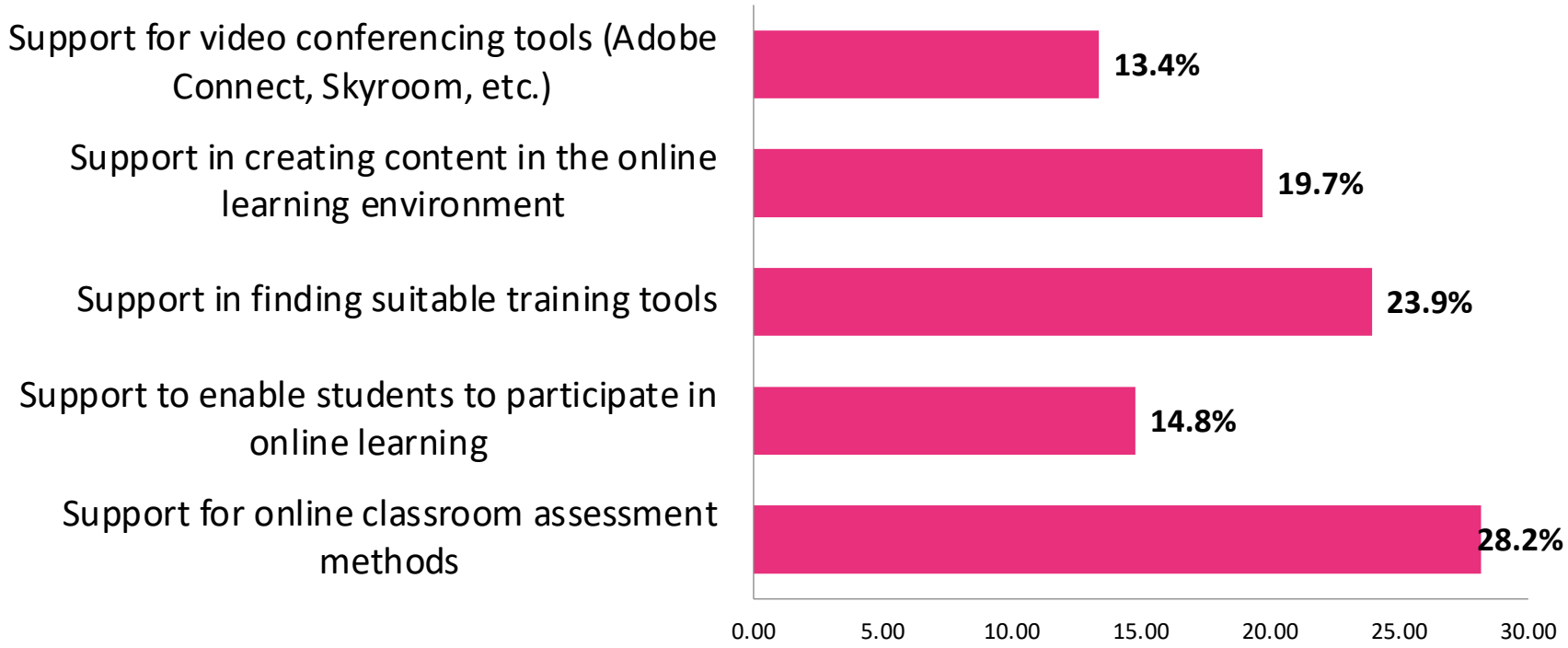
Which type of support do you think would be most useful? (61)



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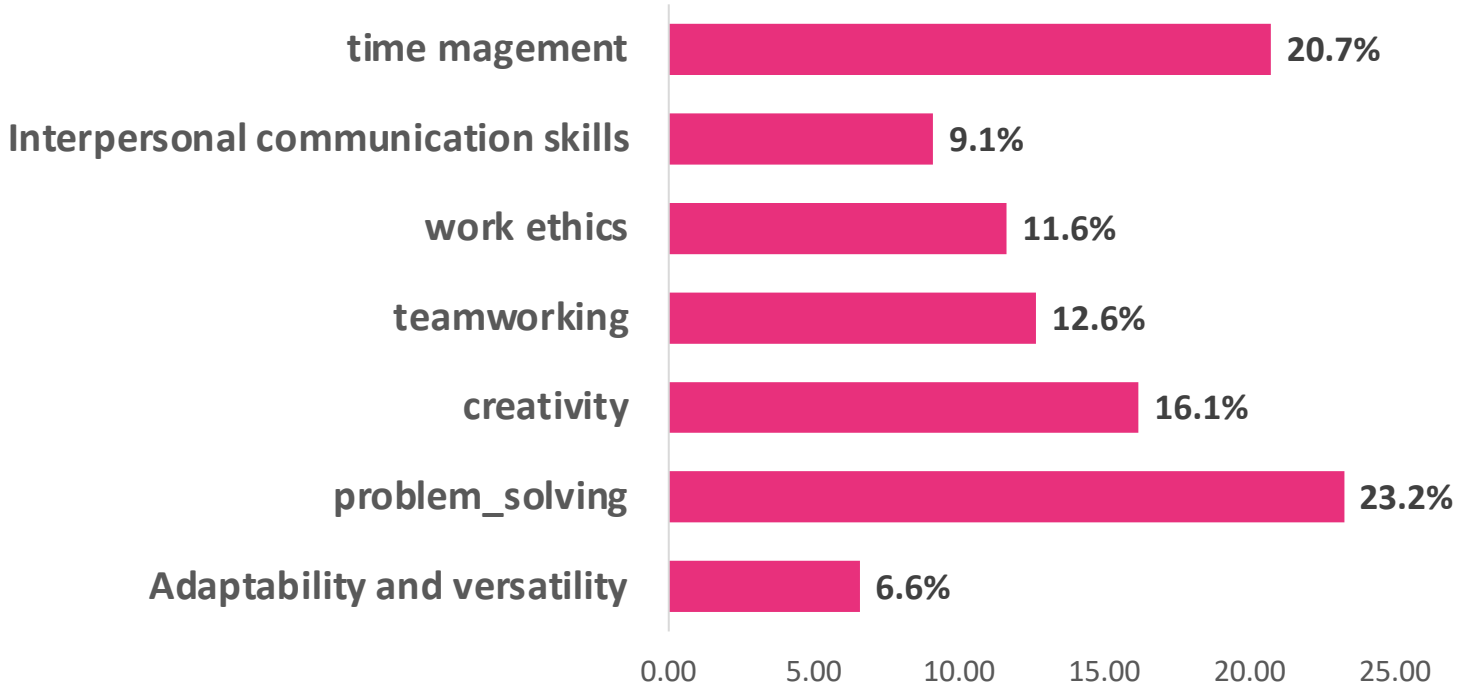
User-friendly online learning management systems (61)



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Conclusion and important remarks

- **Professors are happy with LMS and monitor their students activity.**
- **Virtual labs are paralleled with the real one.**

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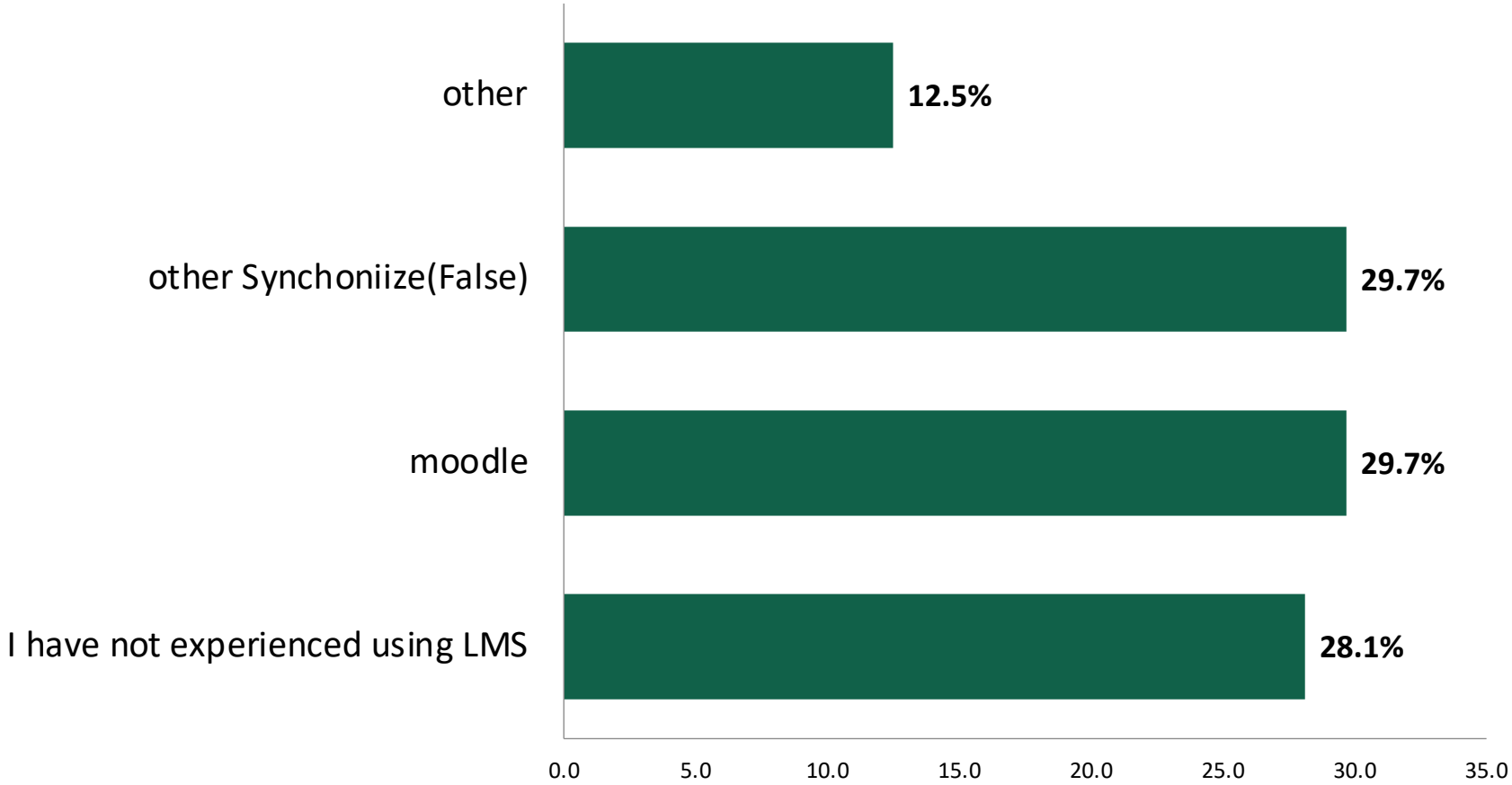
Experience (61)



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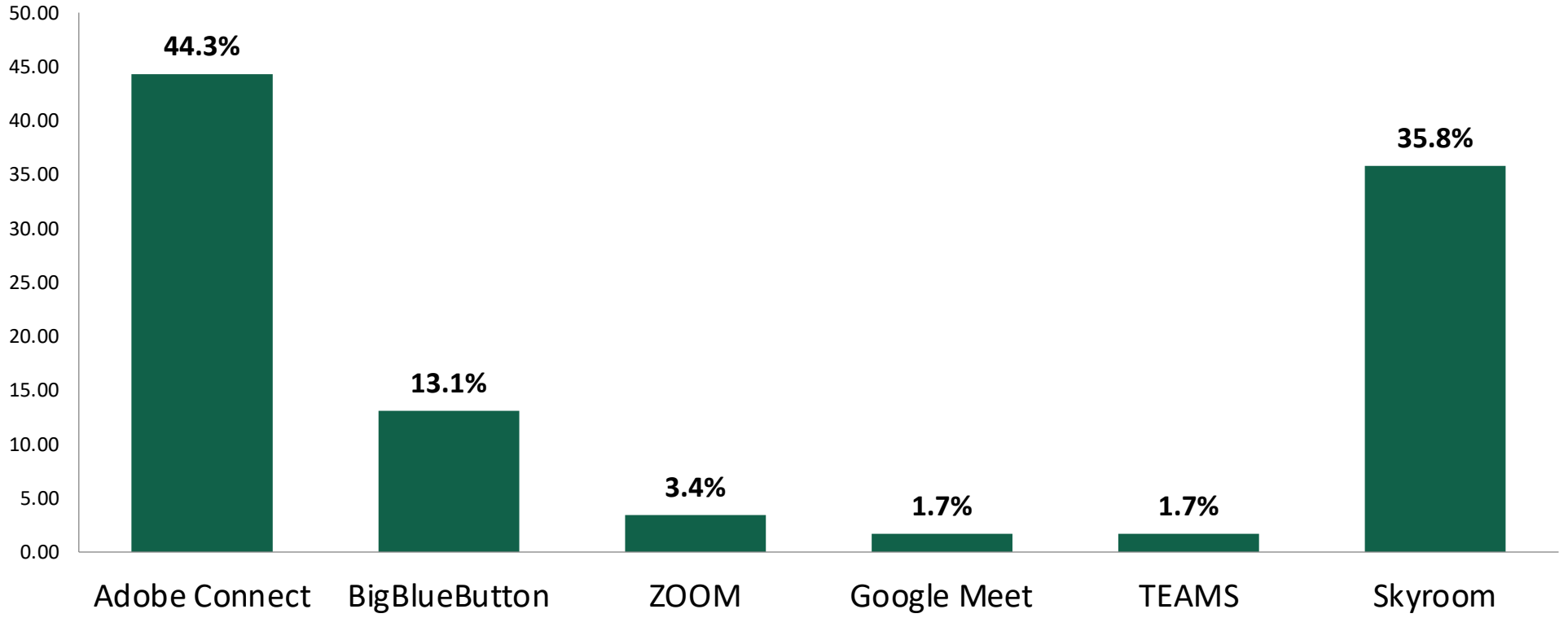
What program or infrastructure have you used to present yourself online (61)?



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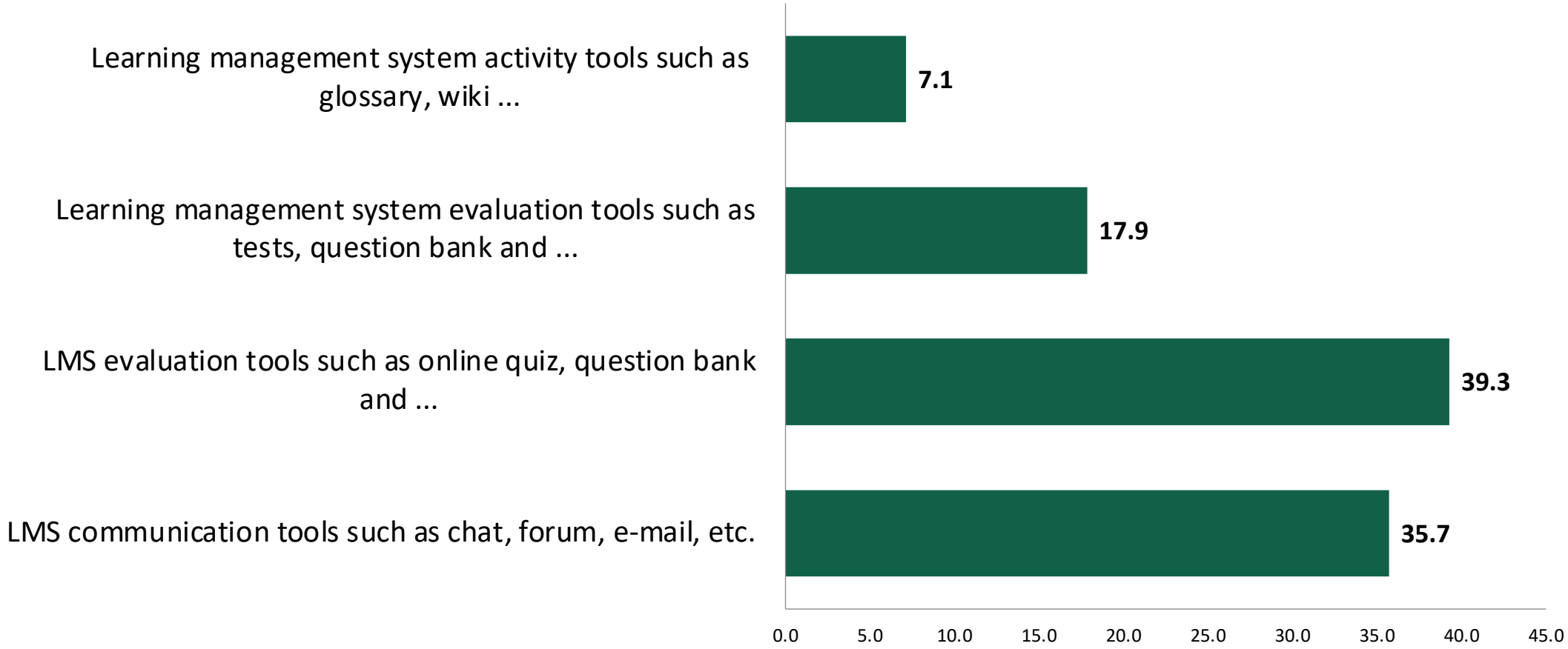
LMS needed (61)



Information: Participation of IR partners

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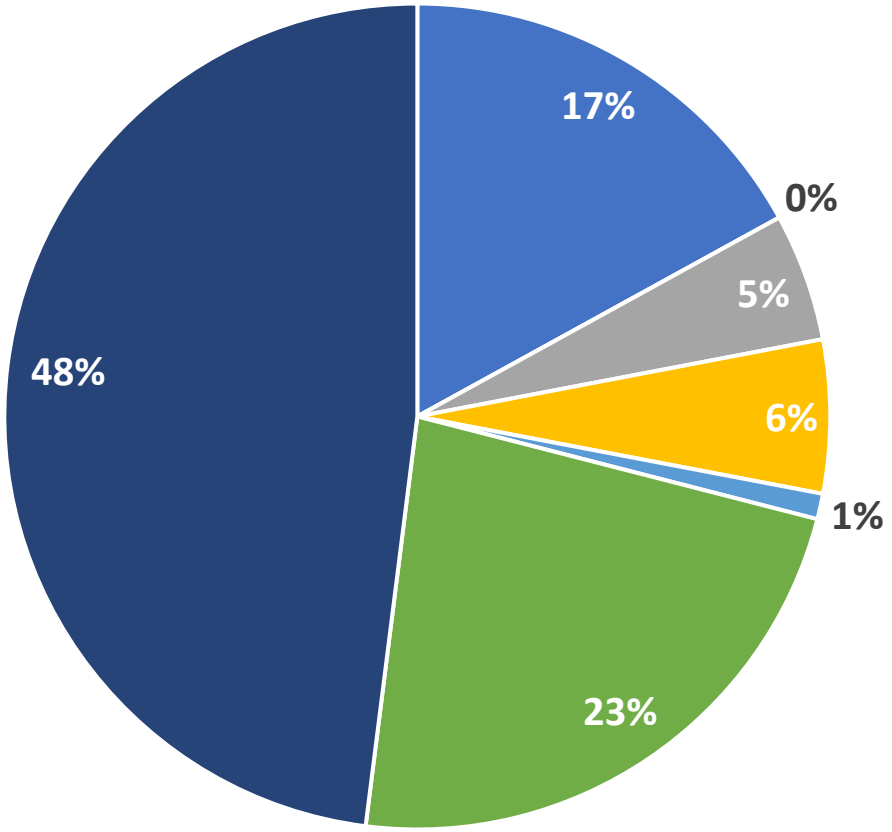
Total respondents: 286 students



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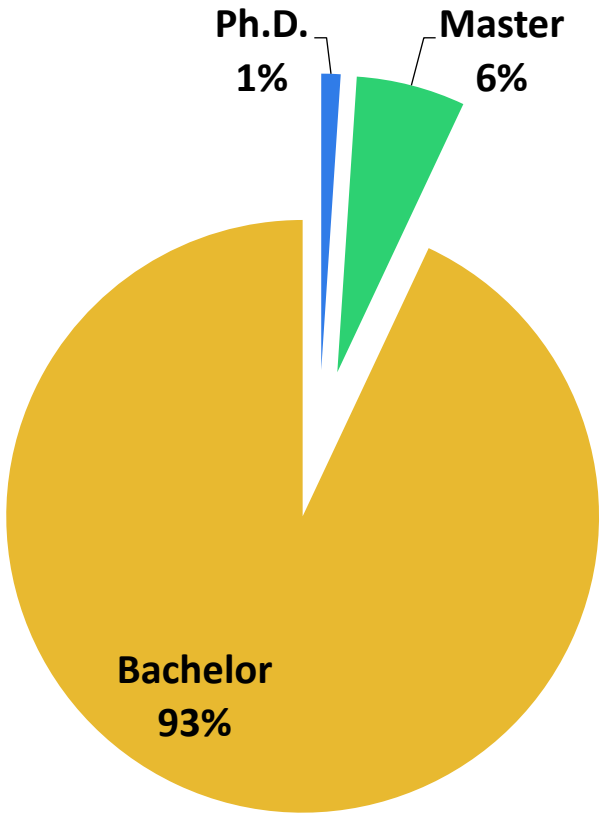

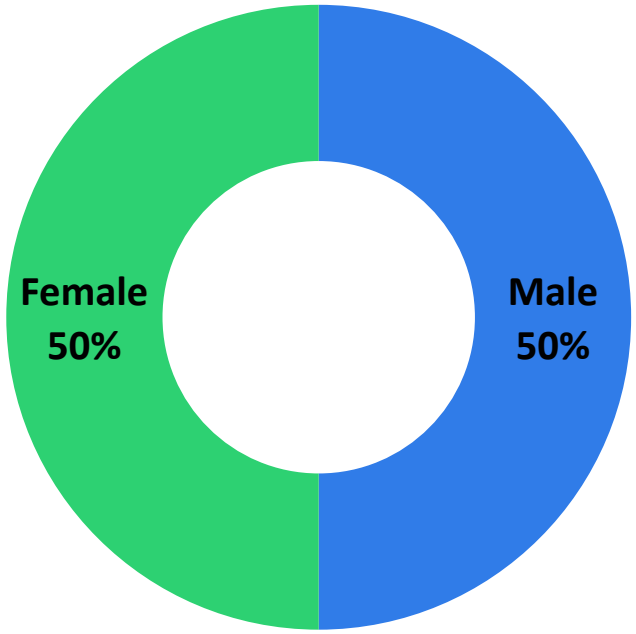

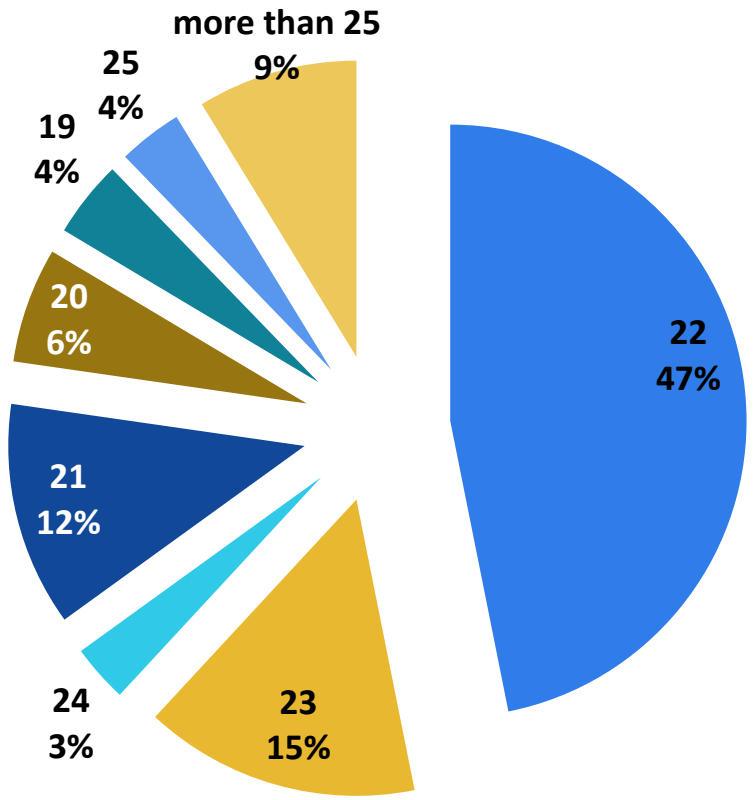

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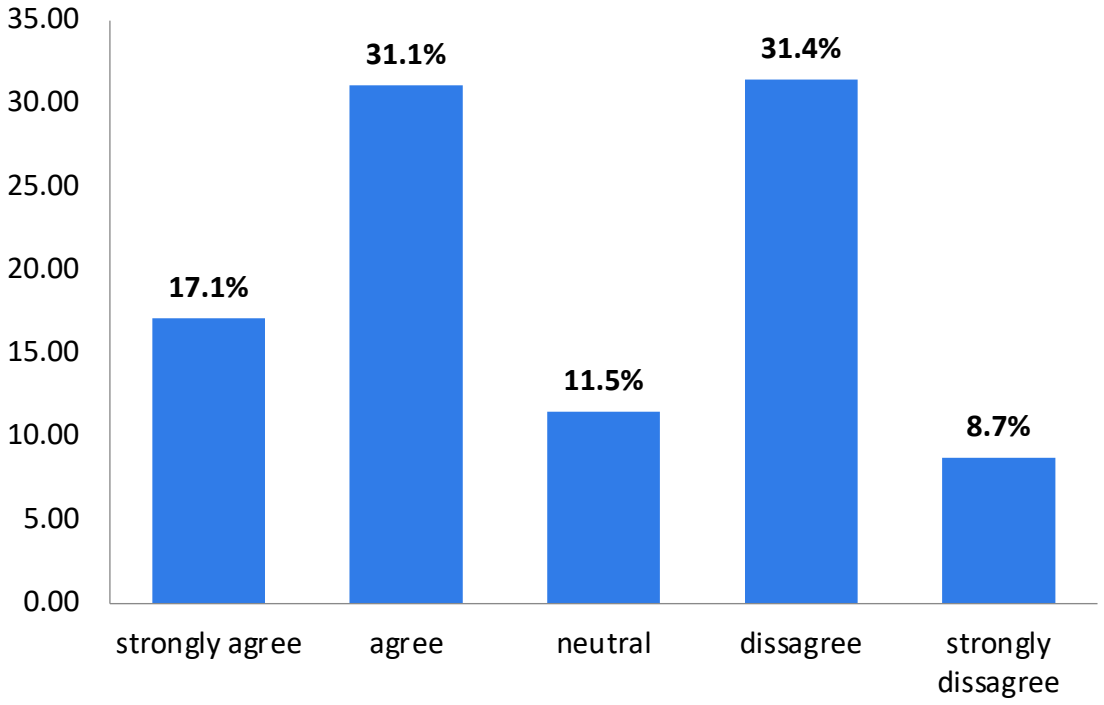
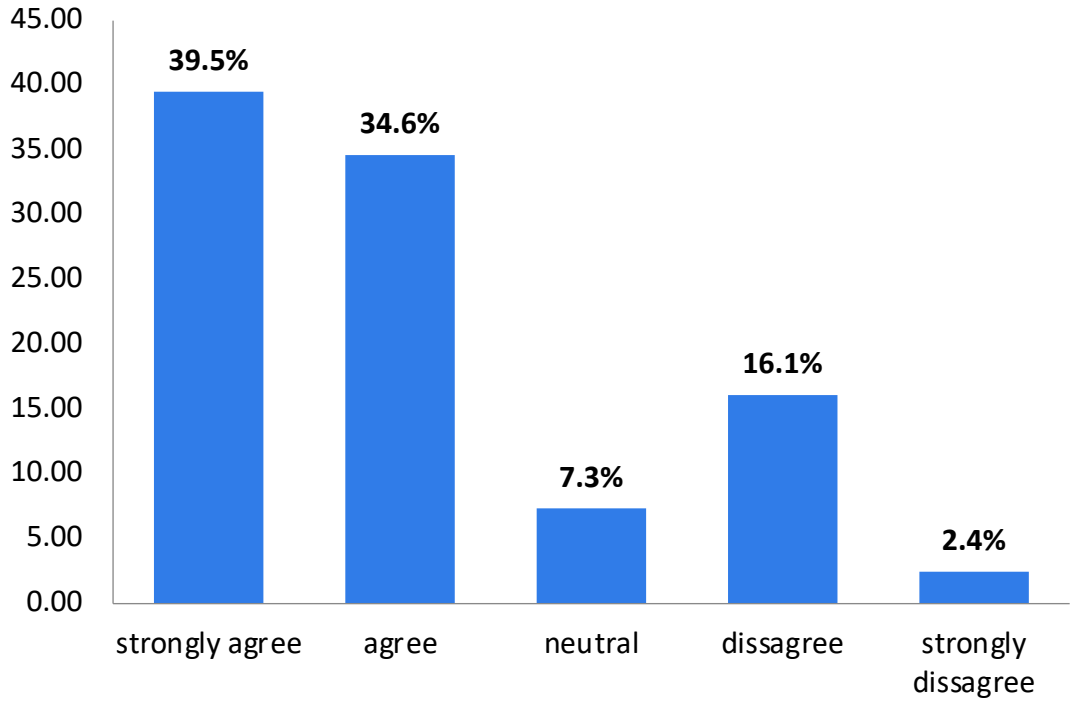
Hands-on experiences and practical actions important for training engineers are possible in an online learning environment (286)



University should move the focus more toward engineering application rather than theory (286)



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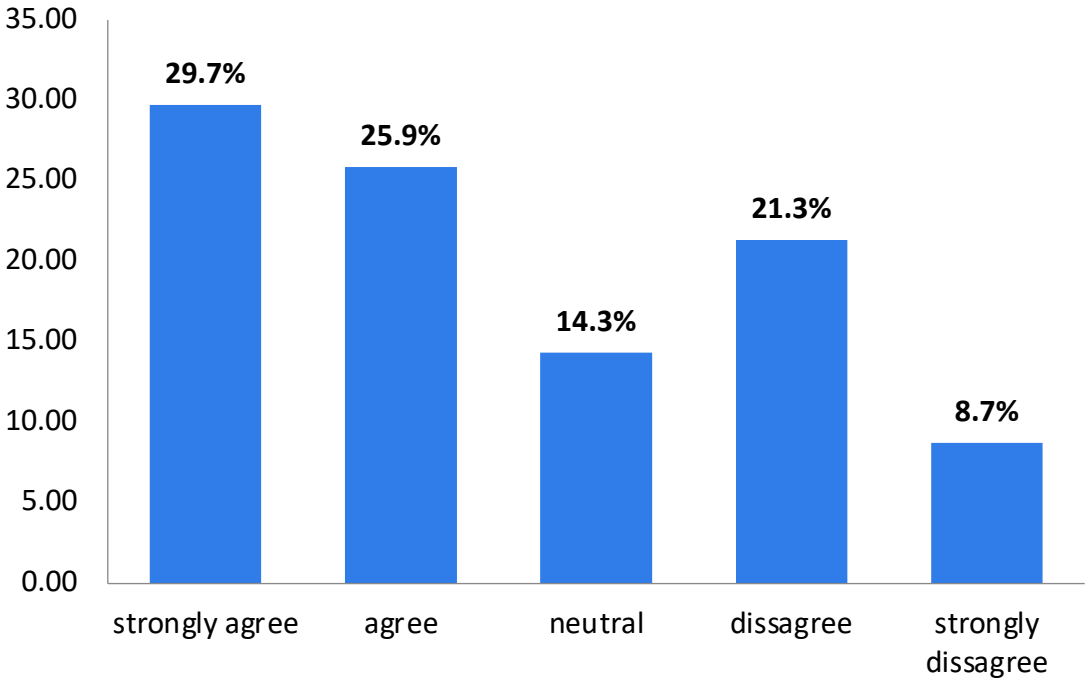
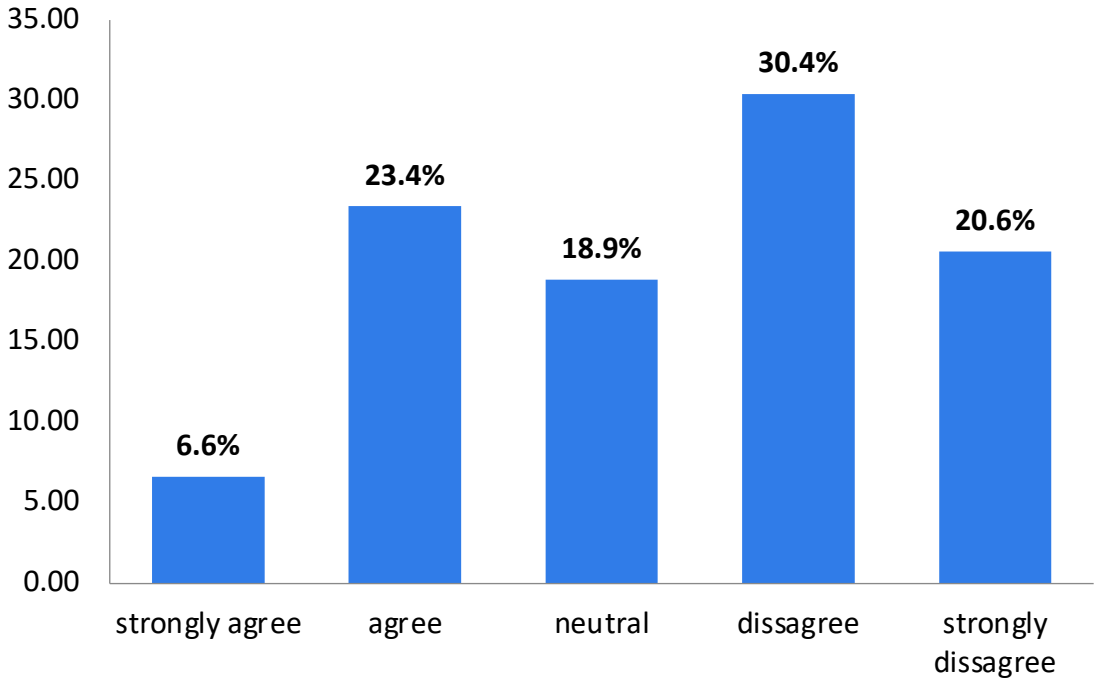
Online studies help me to connect theory and practice(286)



Options provided for analysis and interpretation could be a good alternative for practical action(286)



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Conclusion and important remarks

- **Majority of students believe that there should be more emphasize on practice and application.**
- **They believe that alternatives like videos of experiments cannot replace hands on practice in virtual classes.**

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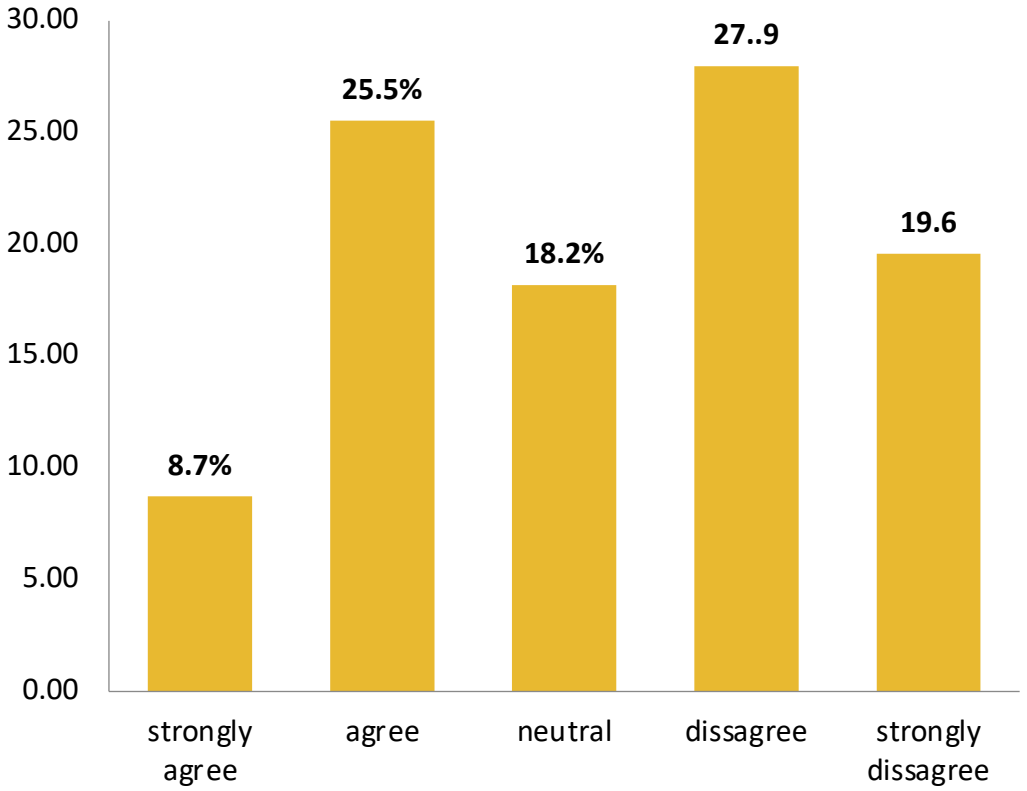
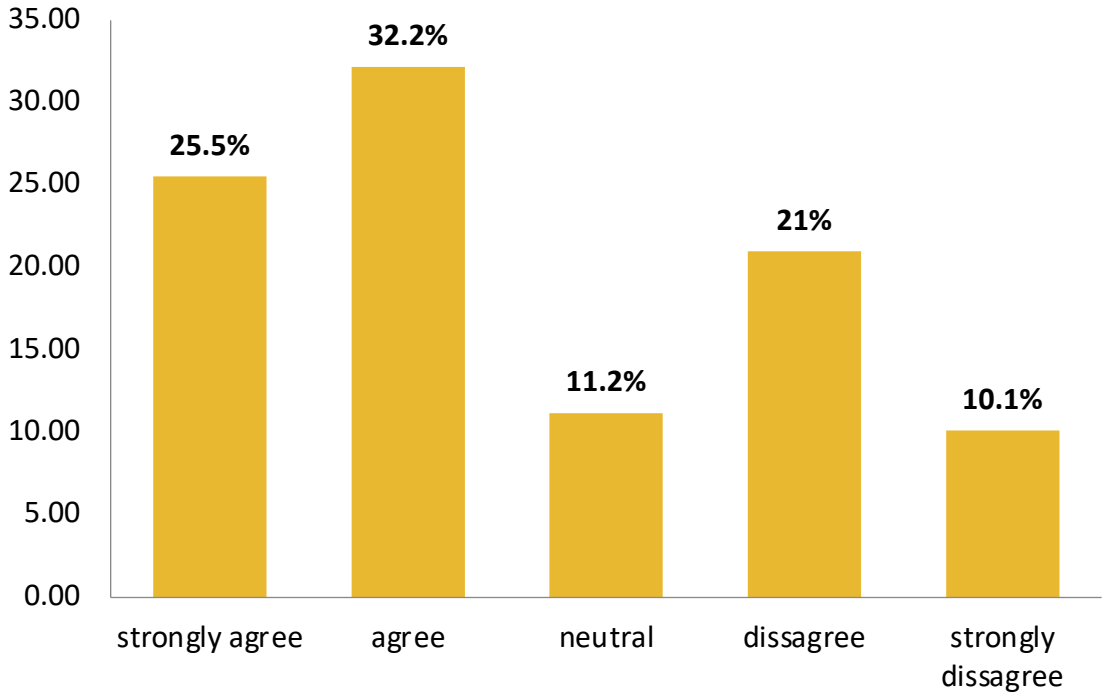
TEL changes the role of the student(286)



My motivation in online education is lower compared to face-to-face classes (286)



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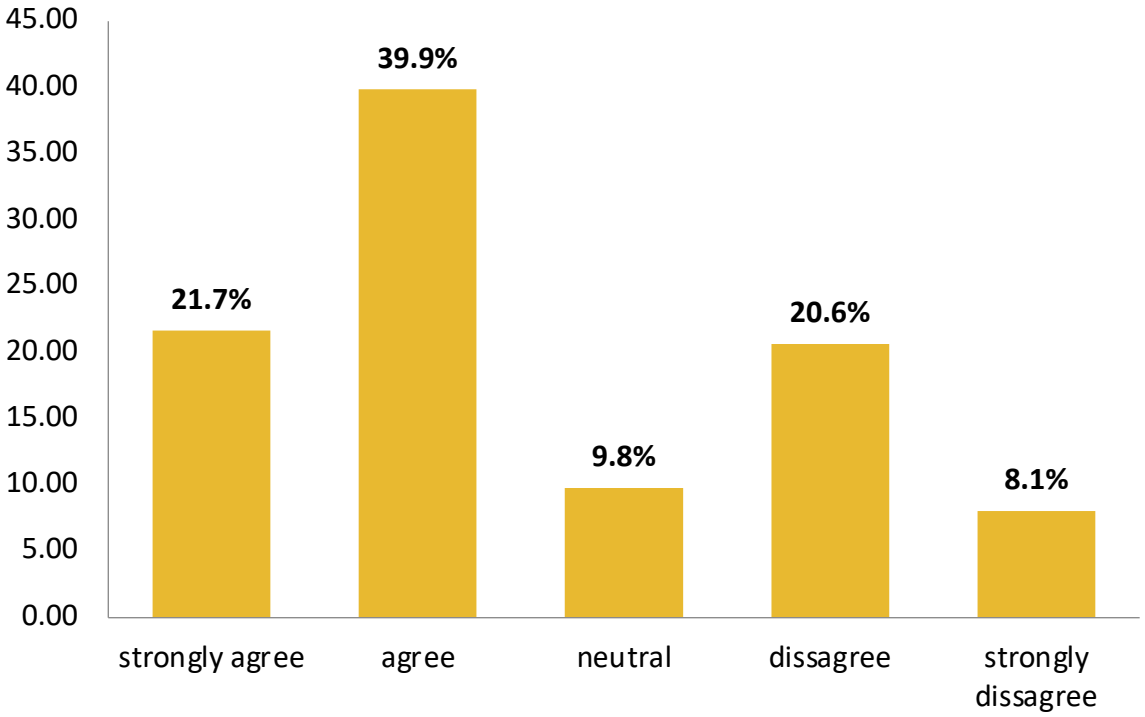
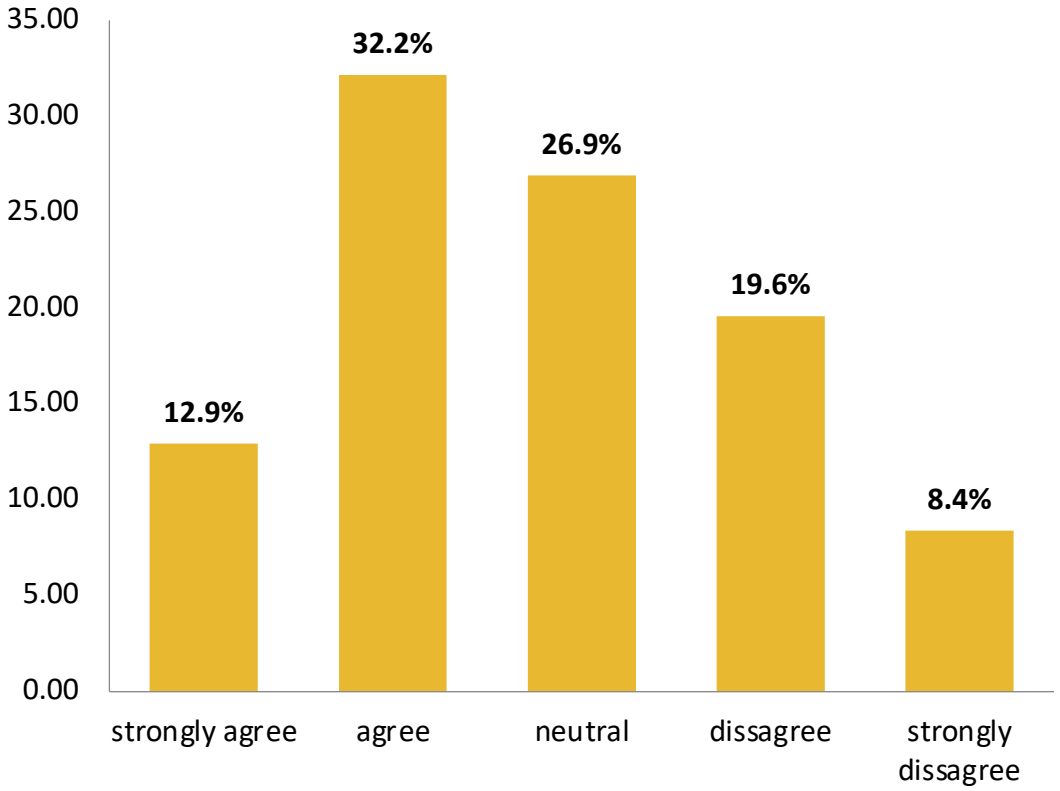
Online courses increased Independence and flexibility in my learning and made me more self-regulated(276)



In online learning you can't really see your own progress(280)



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Conclusion and important remarks

- **Students believe that online classes have made them more self regulated learners.**
- **But they tend to be less motivated in online classes (attending synchronous classes, watching recorded lectures, …)**

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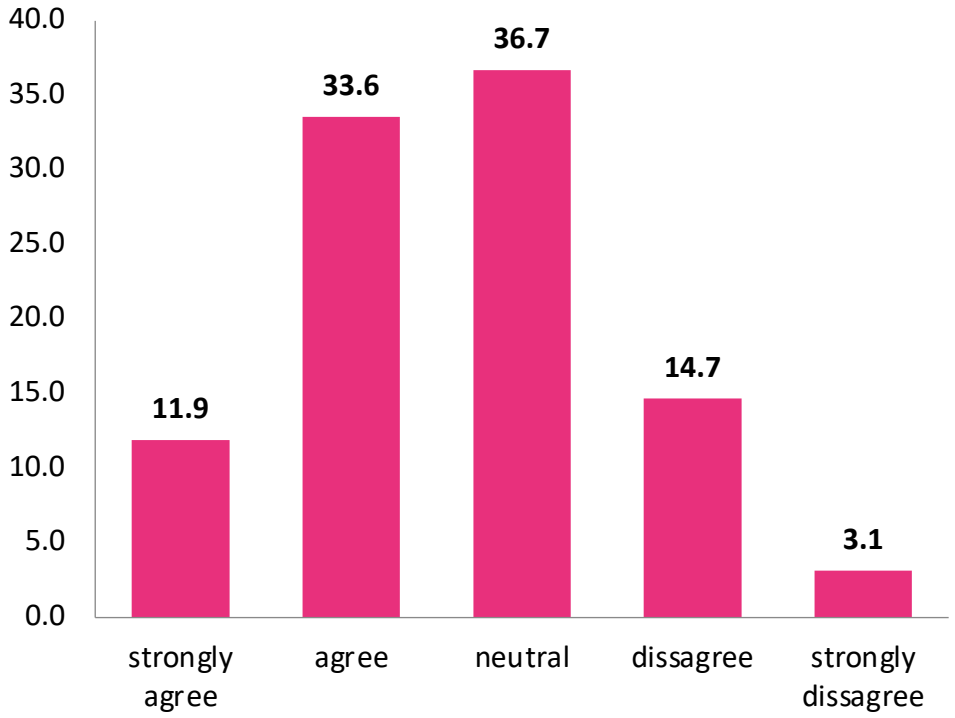
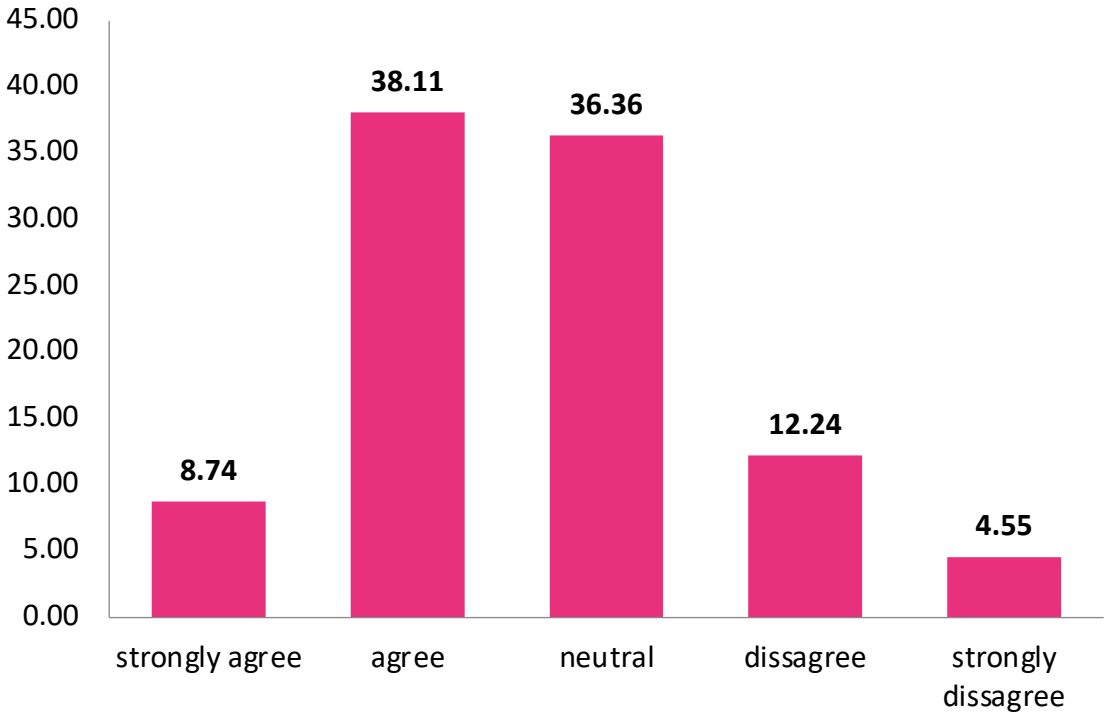
TEL is efficient in providing hard skills (286)



TEL is efficient in providing soft skills (286)



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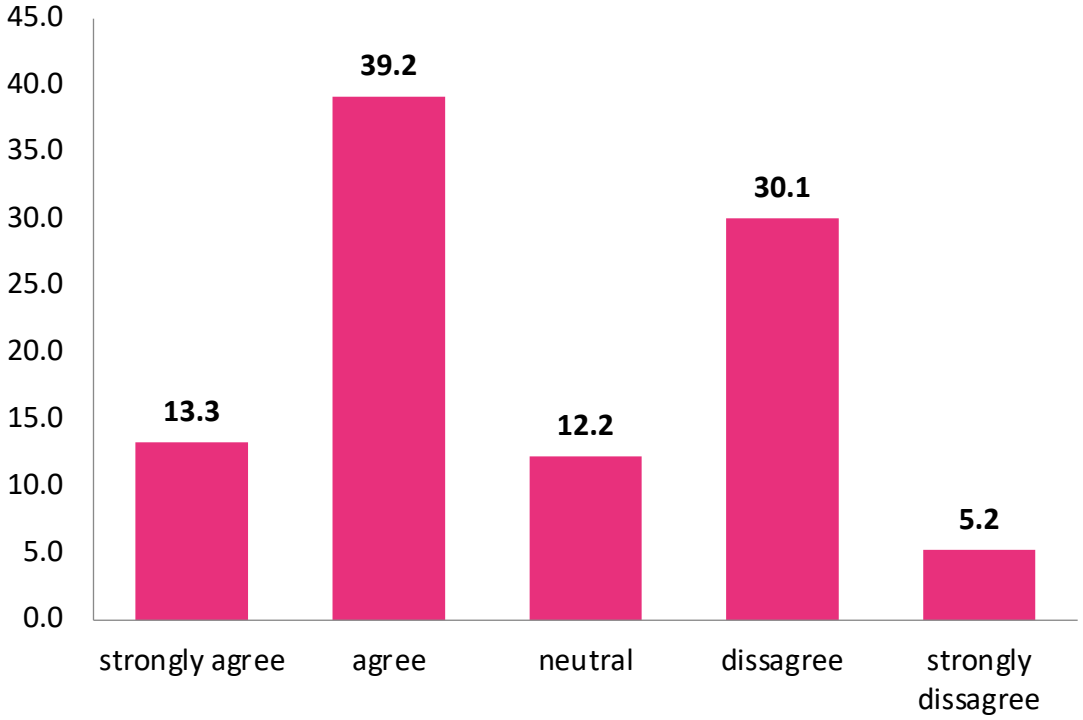
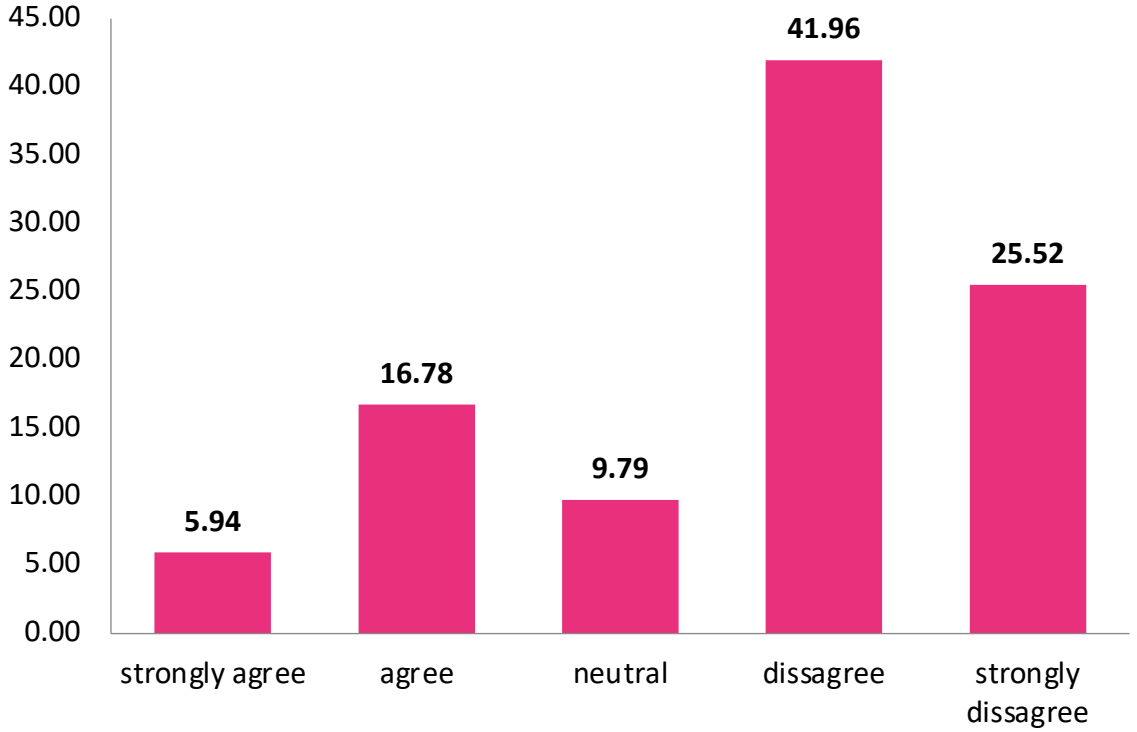
In online learning I like to work on my own and do independent assignments (286)



Online education is not appropriate for learning every subject, knowledge or skill(286).



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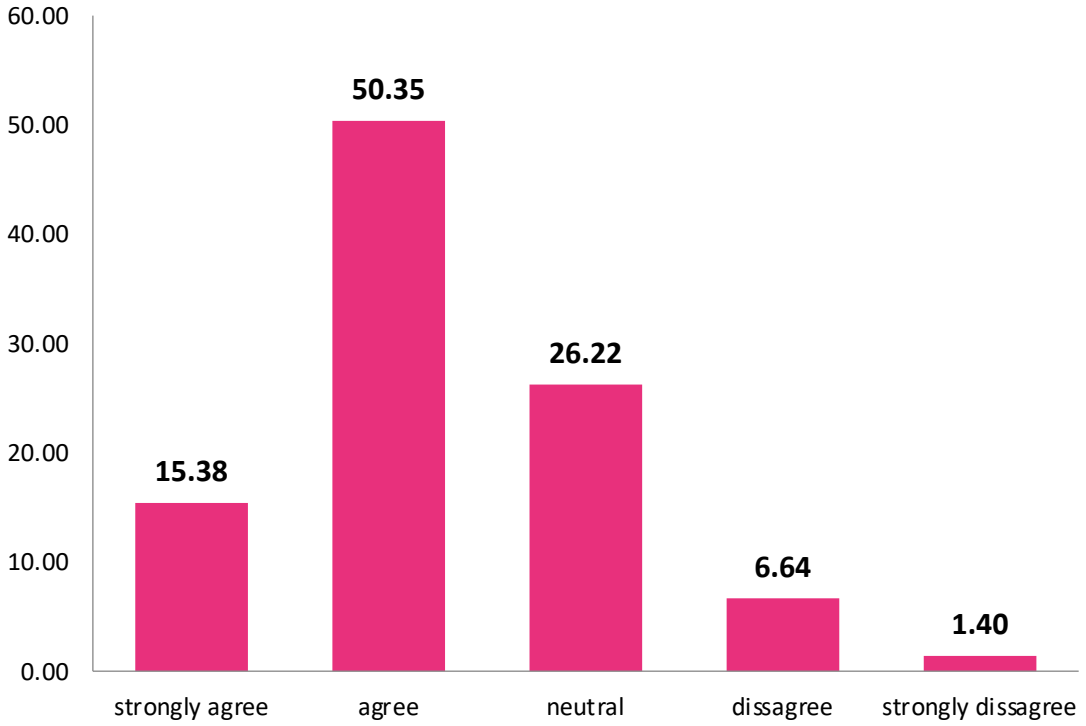
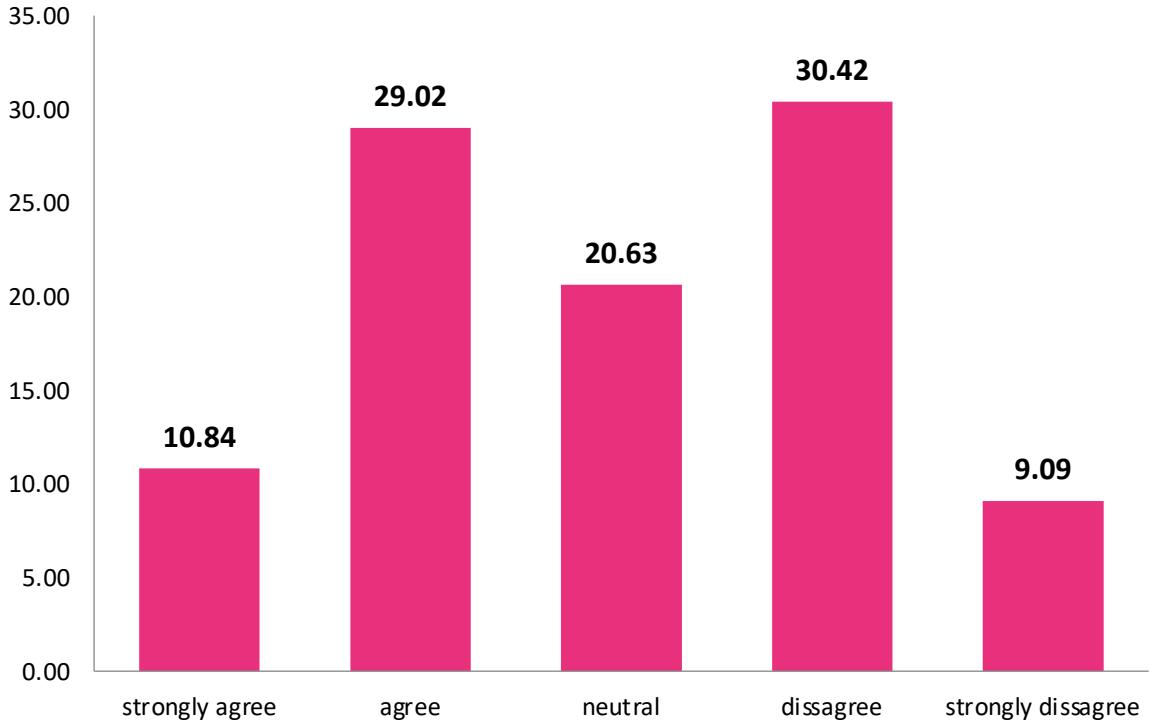
More emphasis should be placed on teaching real-life problem-solving skills in online learning (286)



I believe students learn engineering knowledge, skills and attitudes better by online collaborative learning (286).



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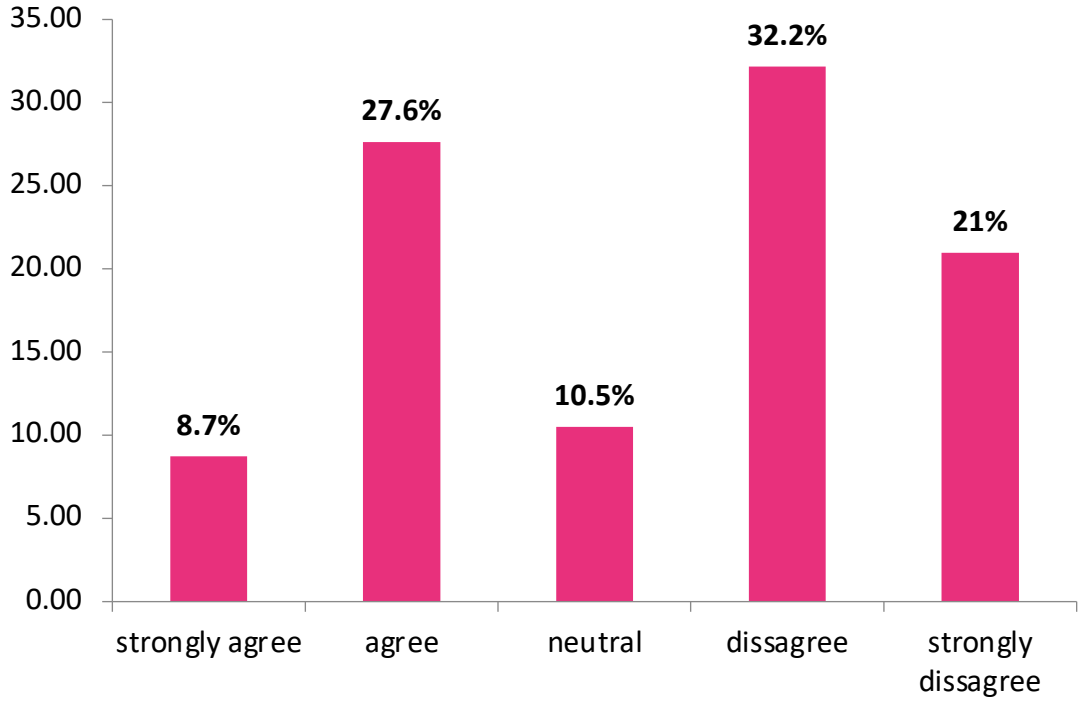
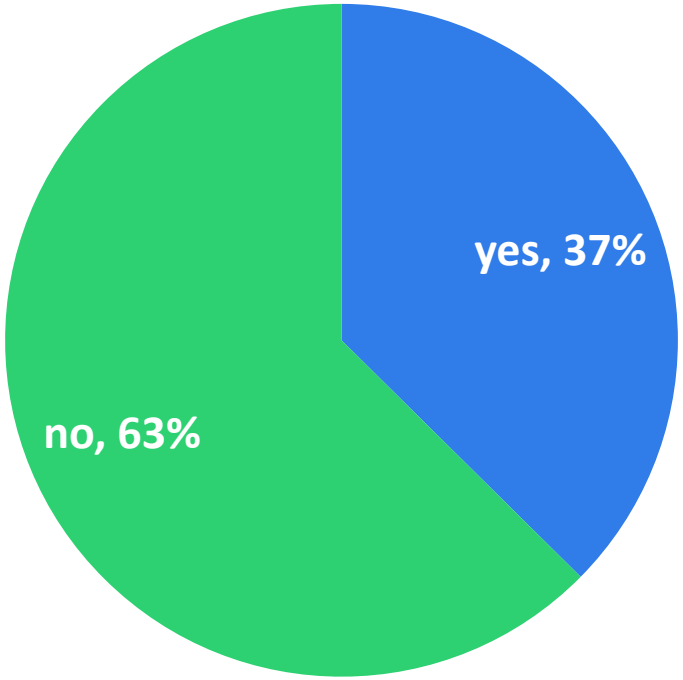
It is easier to participate in group activities in the online environment in comparison to the traditional face-to-face class meetings (286).



I know the difference between virtual and remote laboratories(286)



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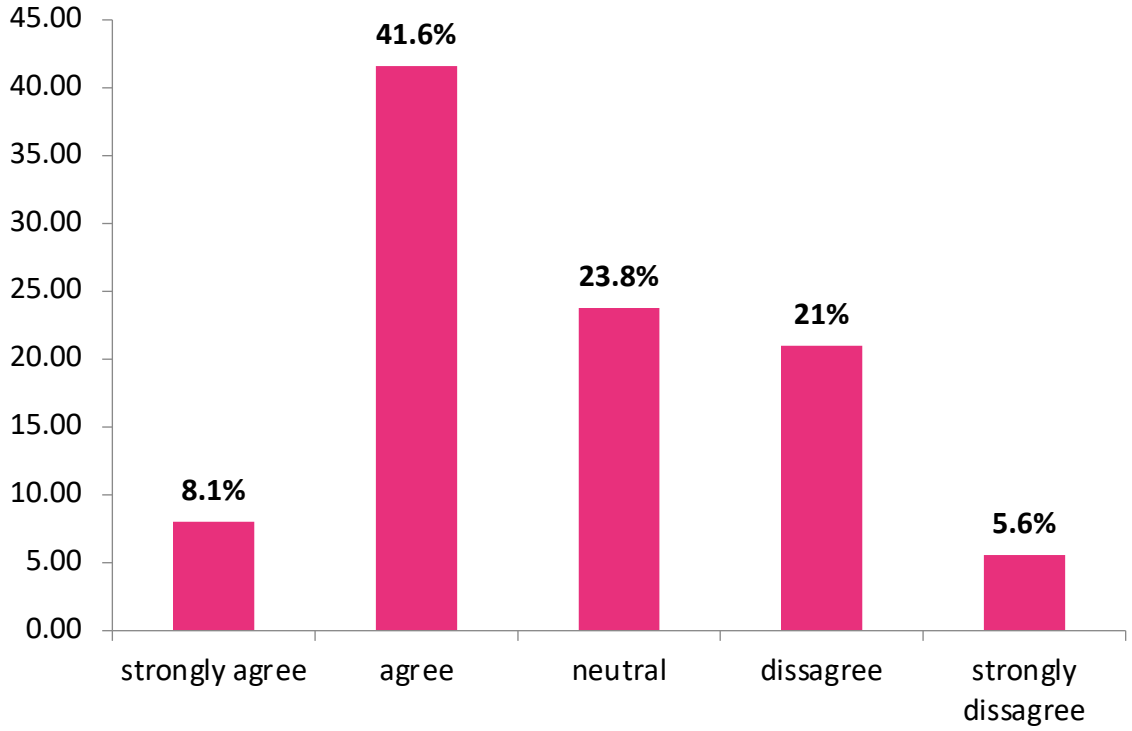
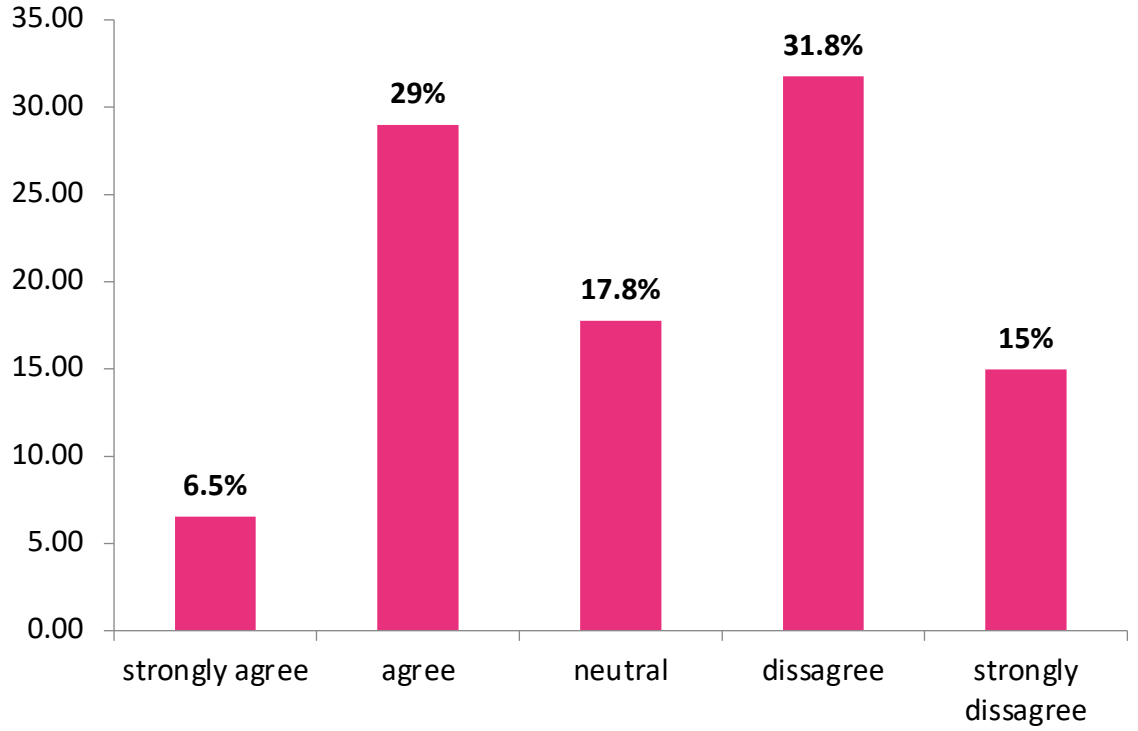
Online learning environment helps students develop problem-solving skills transferable to diverse settings(286)



In my opinion the use of online methodologies based on virtual labs are suitable for learning engineering skills (286).



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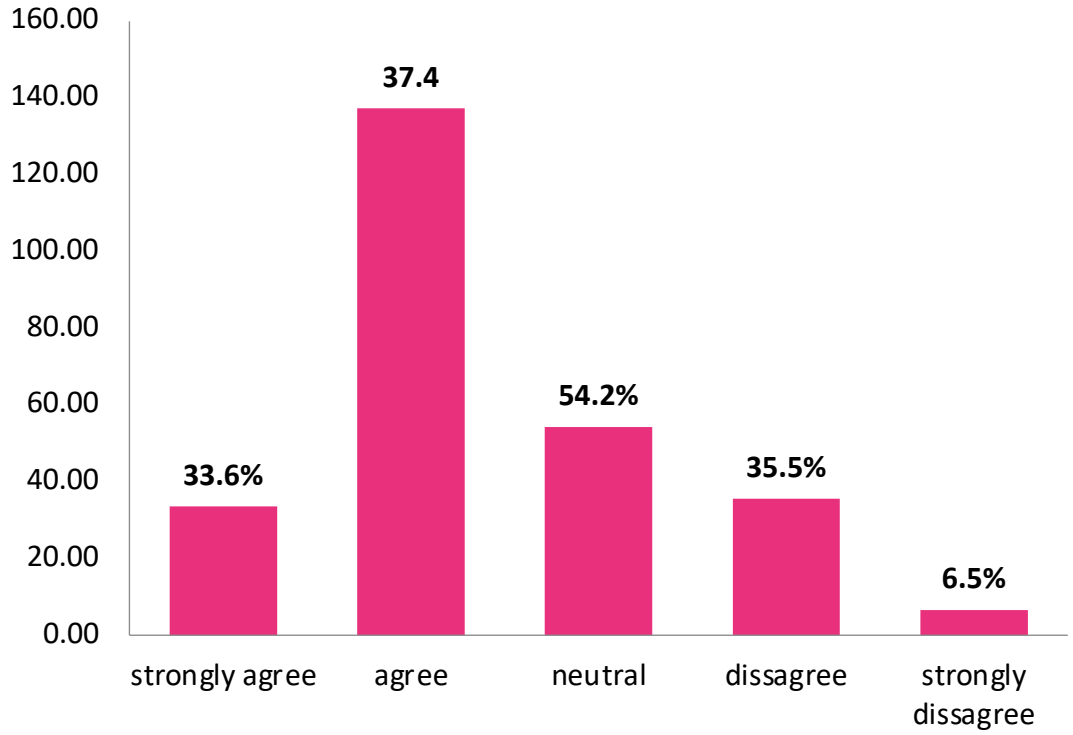
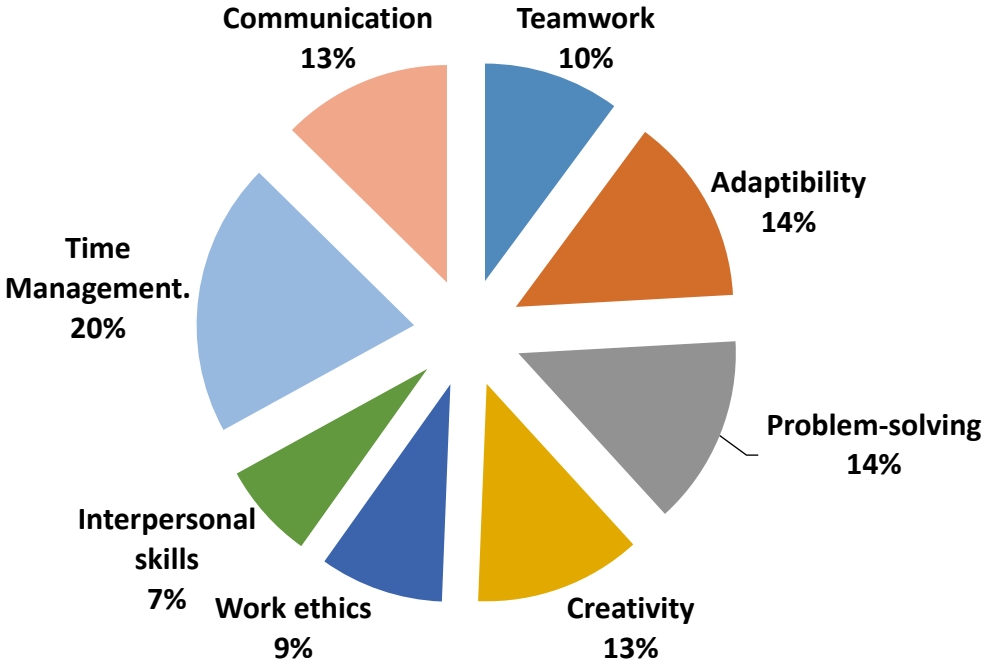
I believe I have the skills needed for participating successfully in TEL(256).



Which soft skills do you think can be easily developed in online education? (286)



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Conclusion and important remarks

- **Student mostly were neutral towards OL affordance in providing them with *hard skills* but they mostly agreed that OL offered them *soft skills*.**
- **They believe that OL could not be used for teaching every type of lesson and skills**
- **They stated that working on groups were more challenging in OL**
- **But they believed that OL helped them more on developing problem solving skills.**

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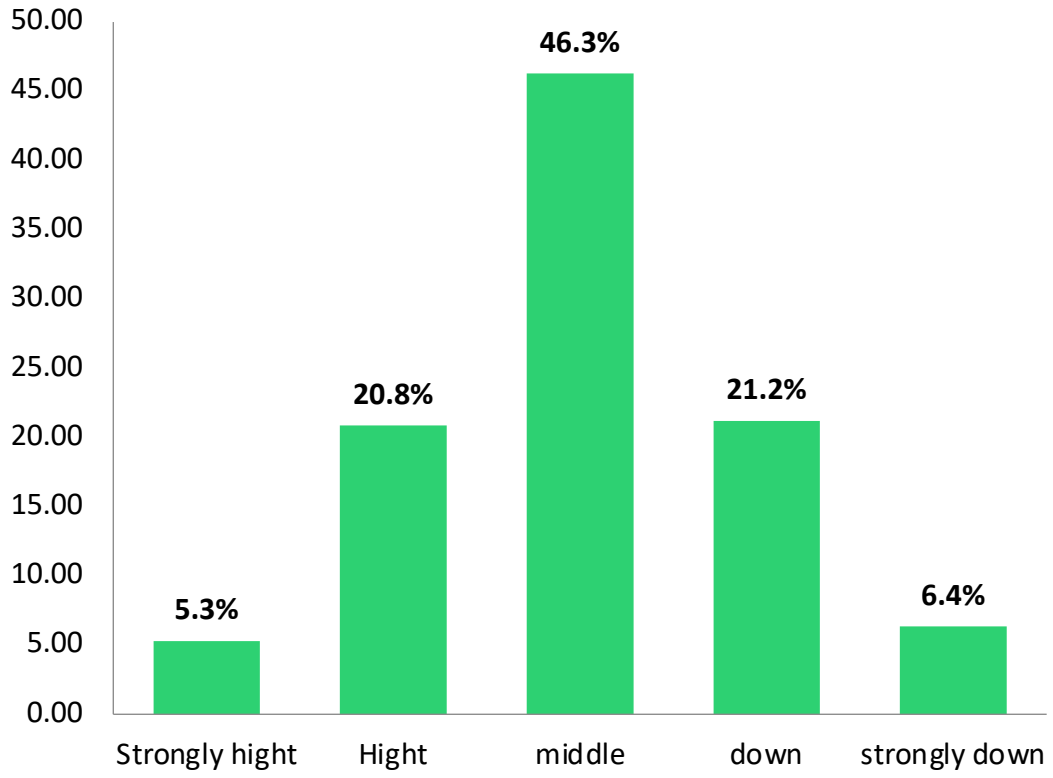
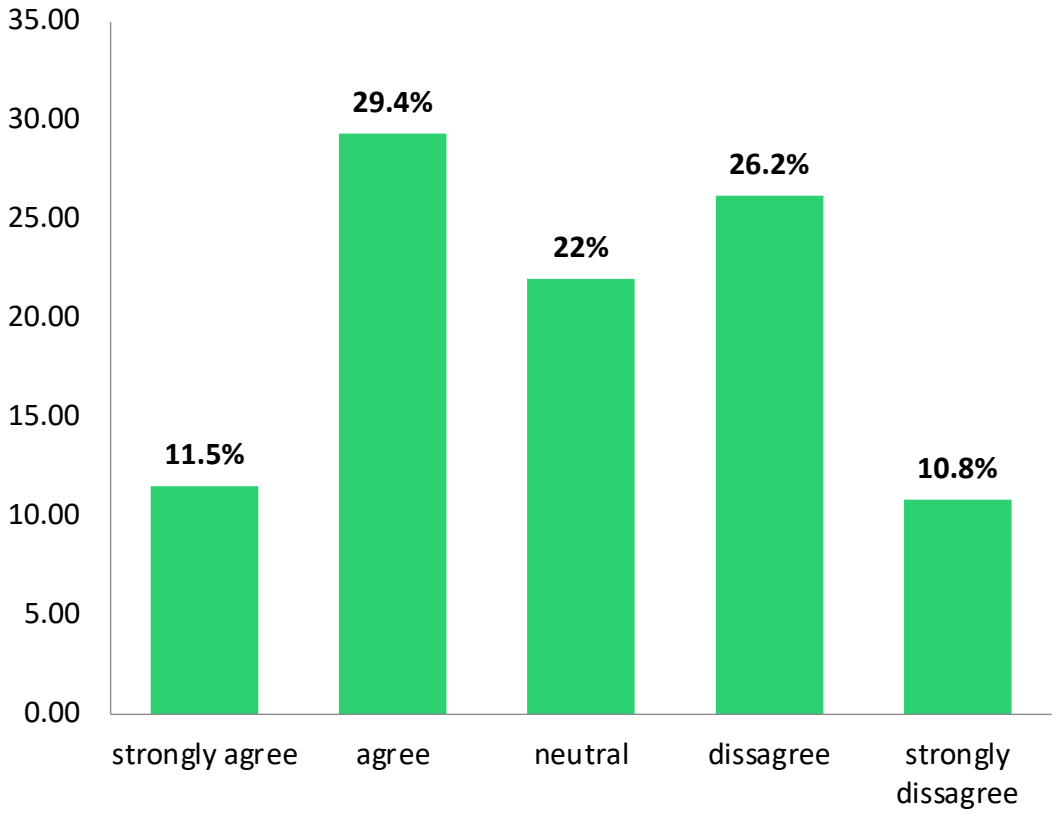
Many of our teachers are technology literate(286)



The teaching methods and strategies used by teachers in online classes led to better and deeper learning (286).



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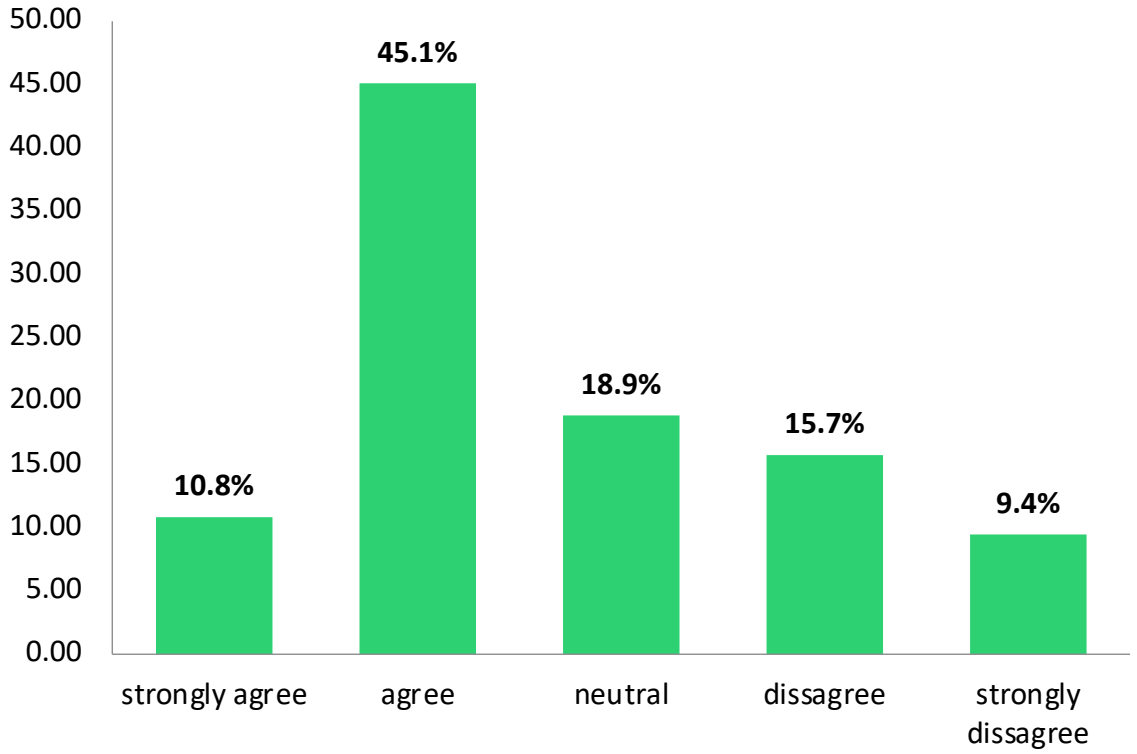
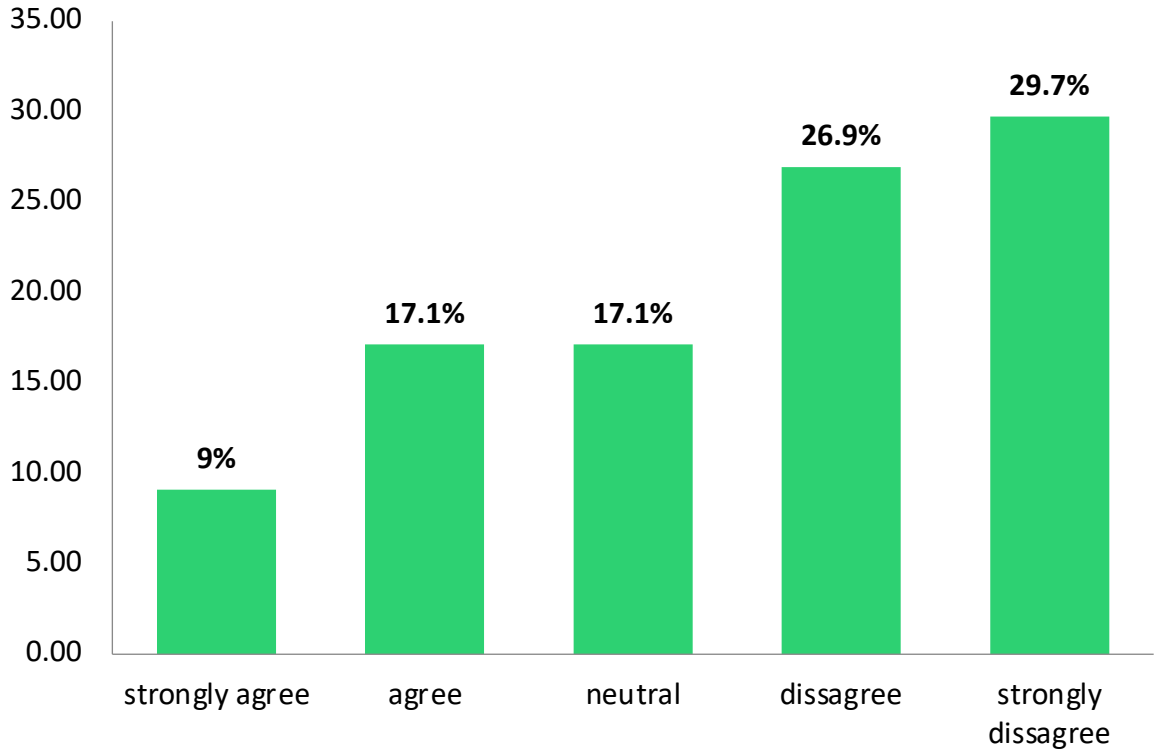
Teachers Set clear objectives, deadlines, and expectations for engagement from the beginning of the online course(286).



Reliable and authentic assessment could be made in the online education environment(286).



Pedagogy and culture of teaching

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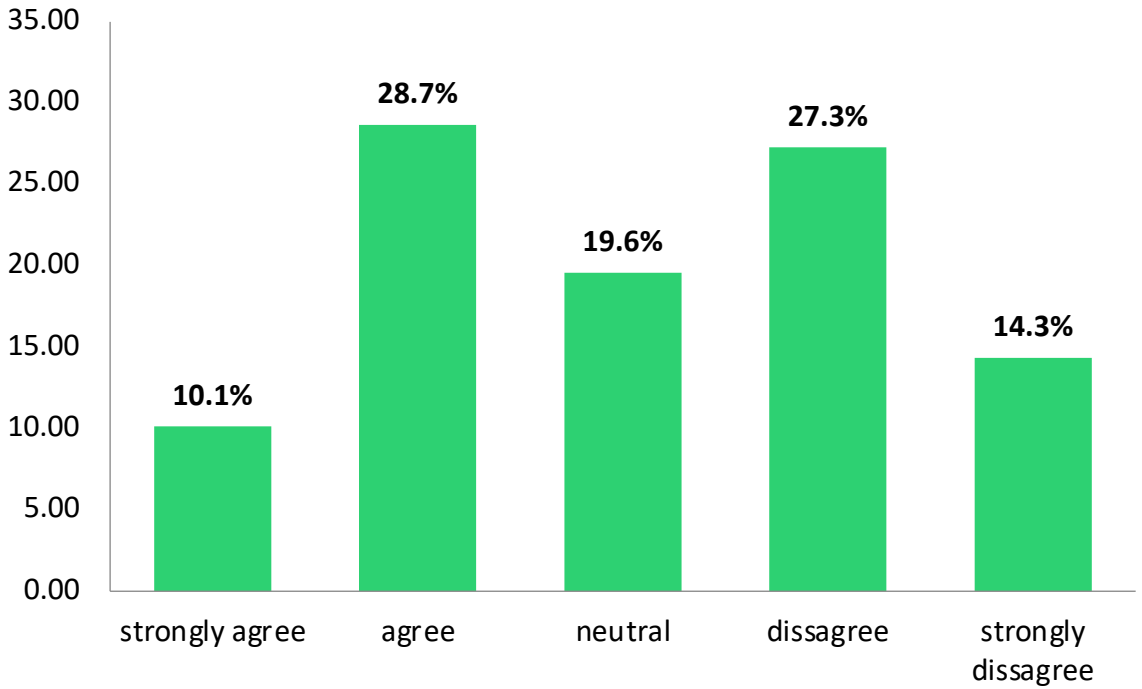
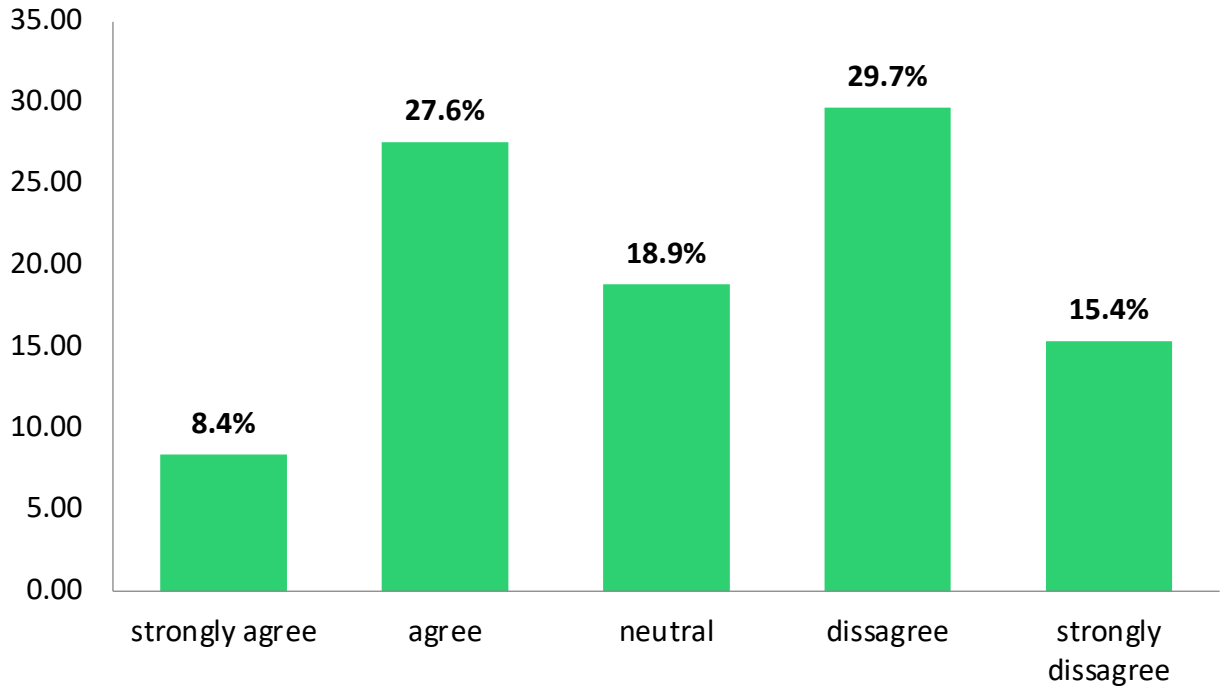
Active learning could be better executed in an online learning environment (286).



The course literature provided by the teacher including other course material has well supported my learning (286).



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Conclusion and important remarks

- **Students mostly did not have united perception on pedagogy related questions.**
- **Though they stated that their teachers had provided them with clear guidelines, deadlines and expectations in OL.**
- **But authentic and reliable assessment could not be accomplished in OL.**

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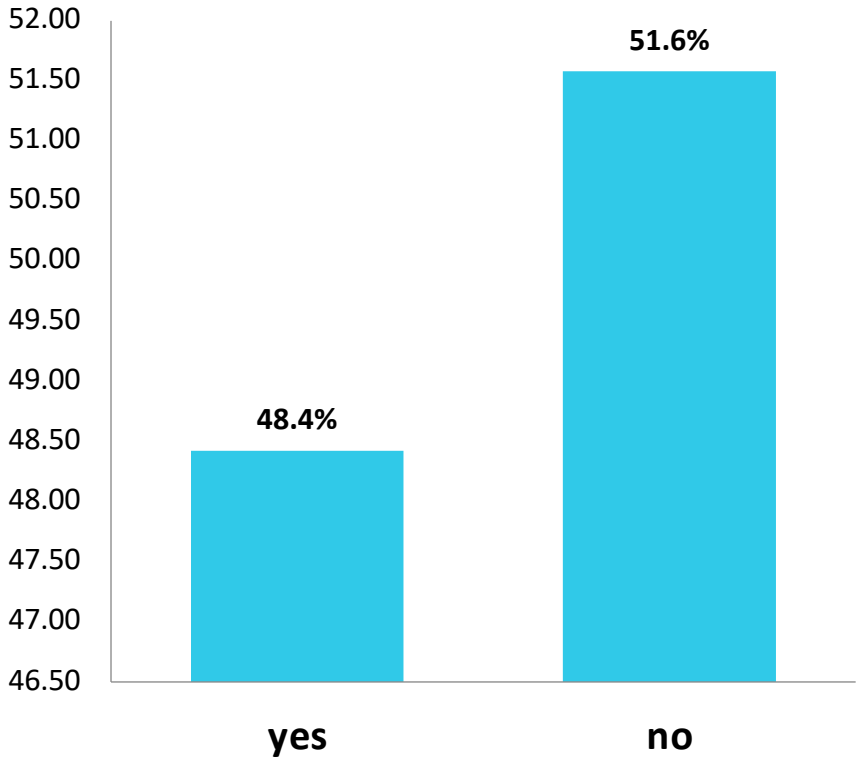
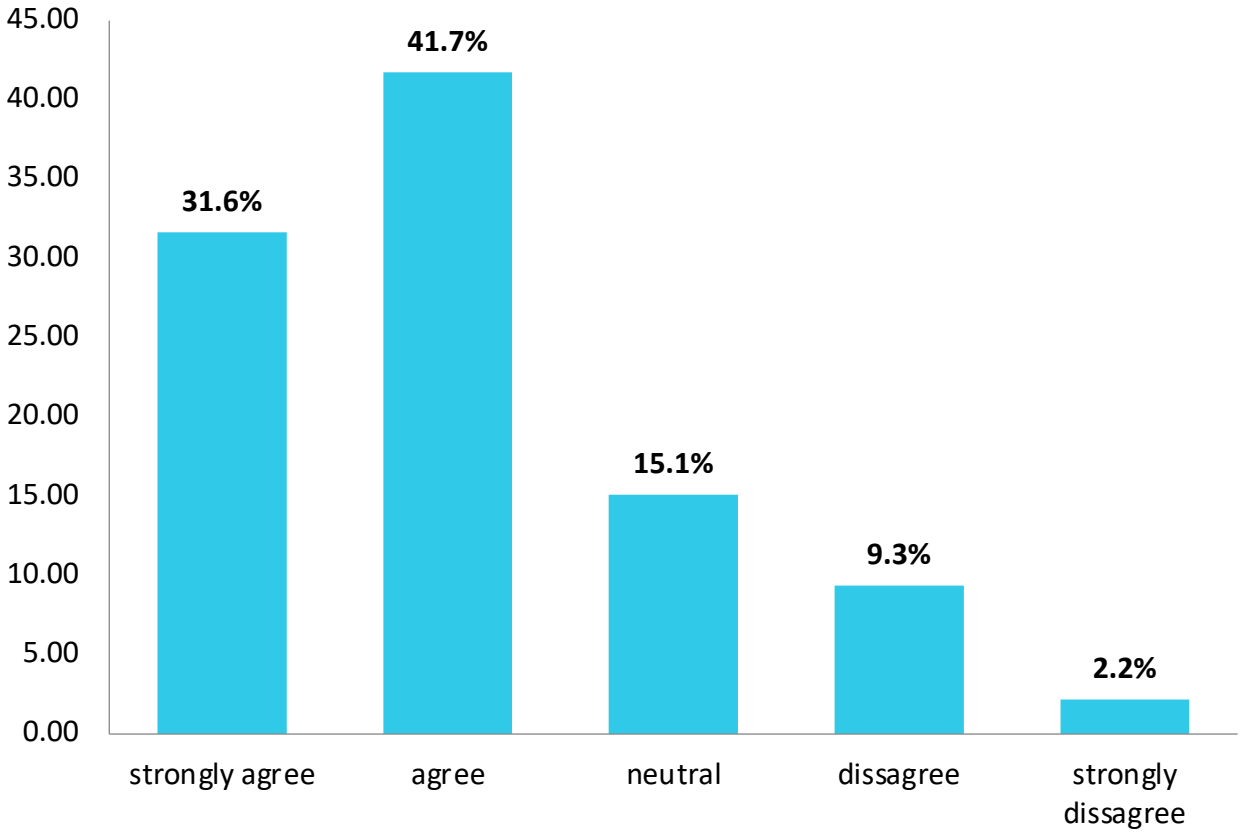
Any experience with LMS (286).



AUDIO and Video quality of the system during live lessons in the distance education (286).



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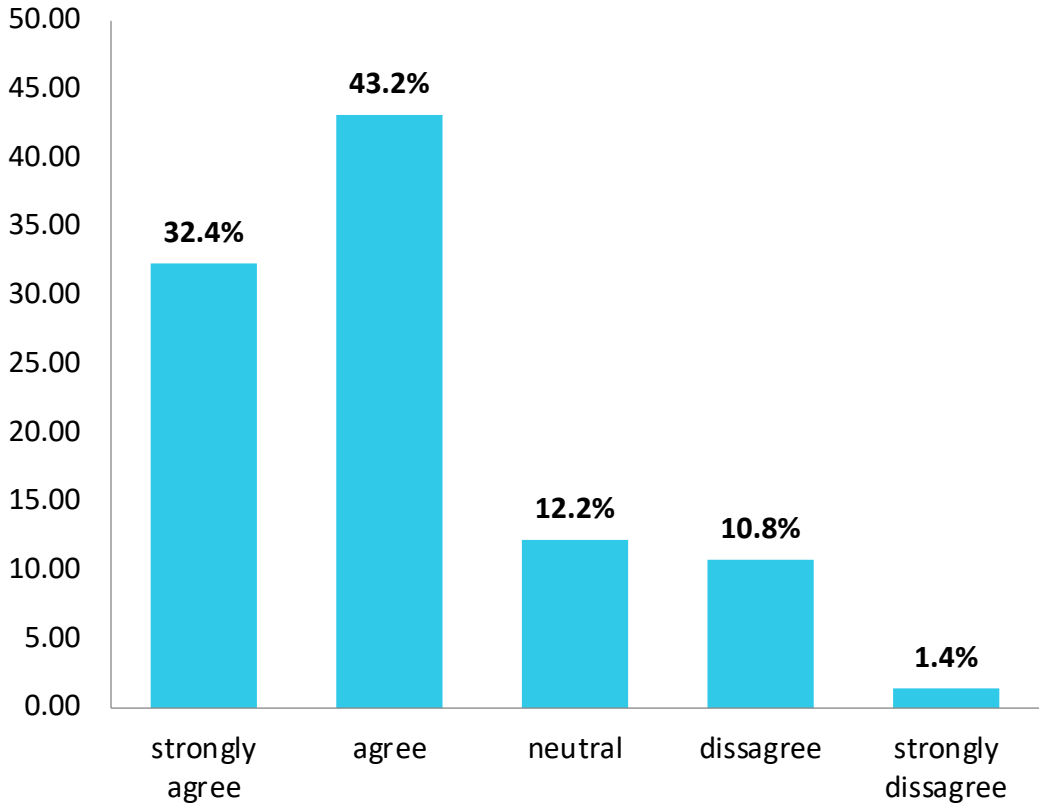
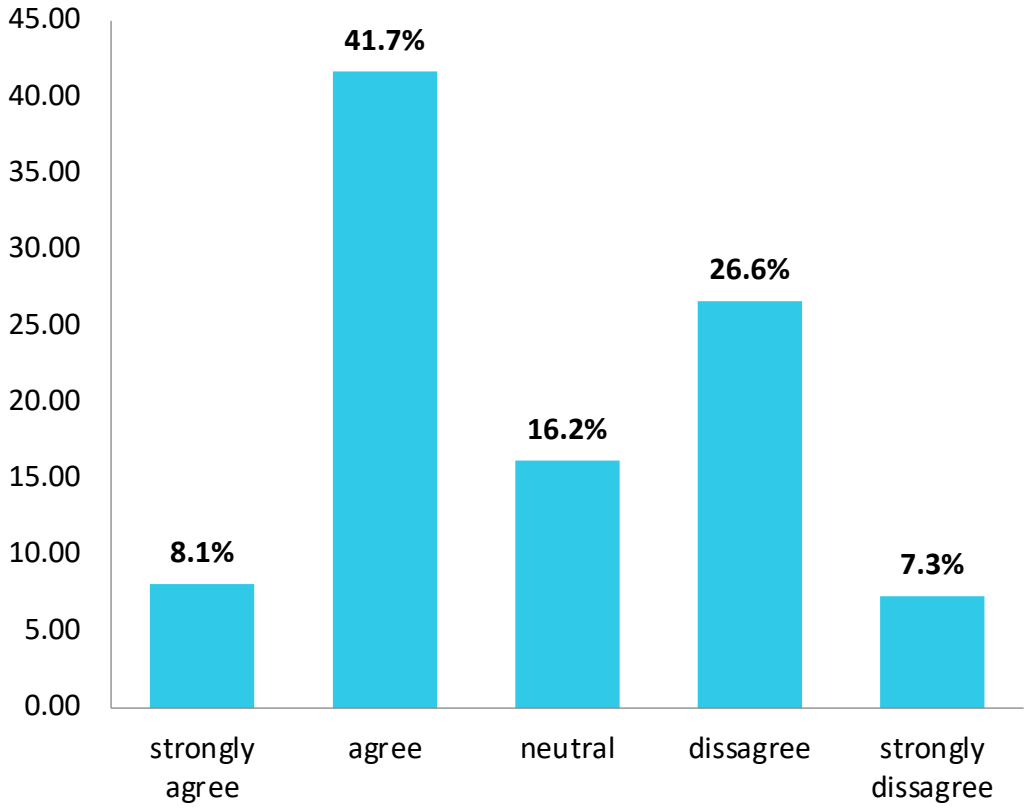
I regularly follow “LIVE COURSES” within the distance education system (286).



Synchronous audio and video quality Online learning is at a high level (286).



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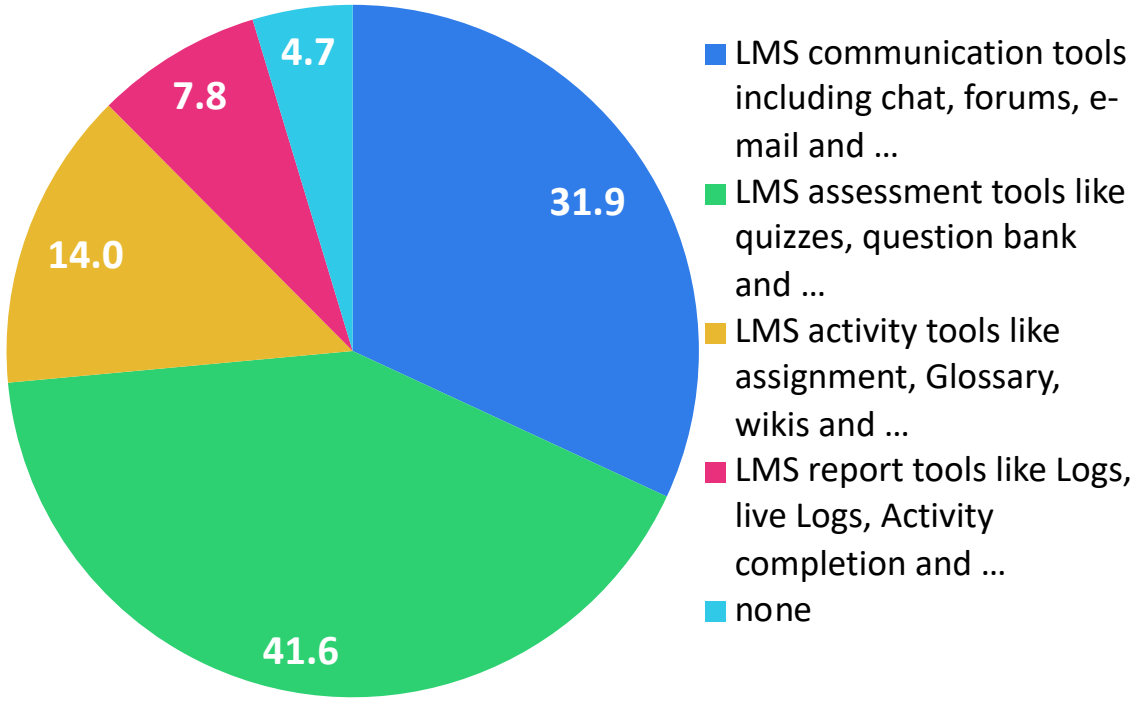
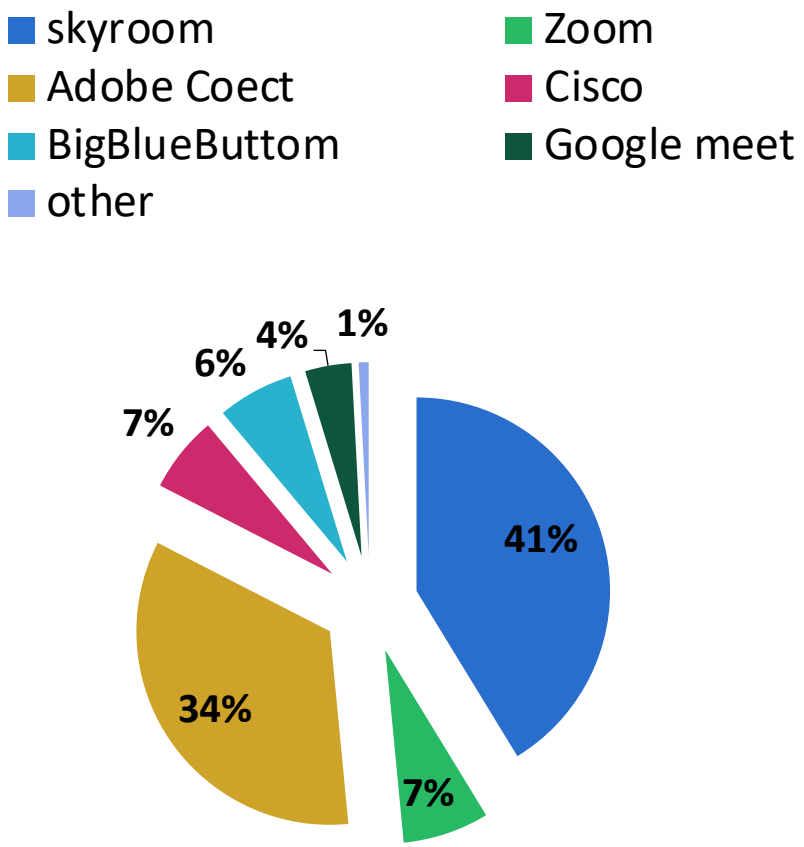
What LMS tools your teachers used to support the online component of the course? (286)



LMS used (286)



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Conclusion and important remarks

- **Students were mostly satisfied with technical aspects of OL (like audio quality, accessibility, …)**

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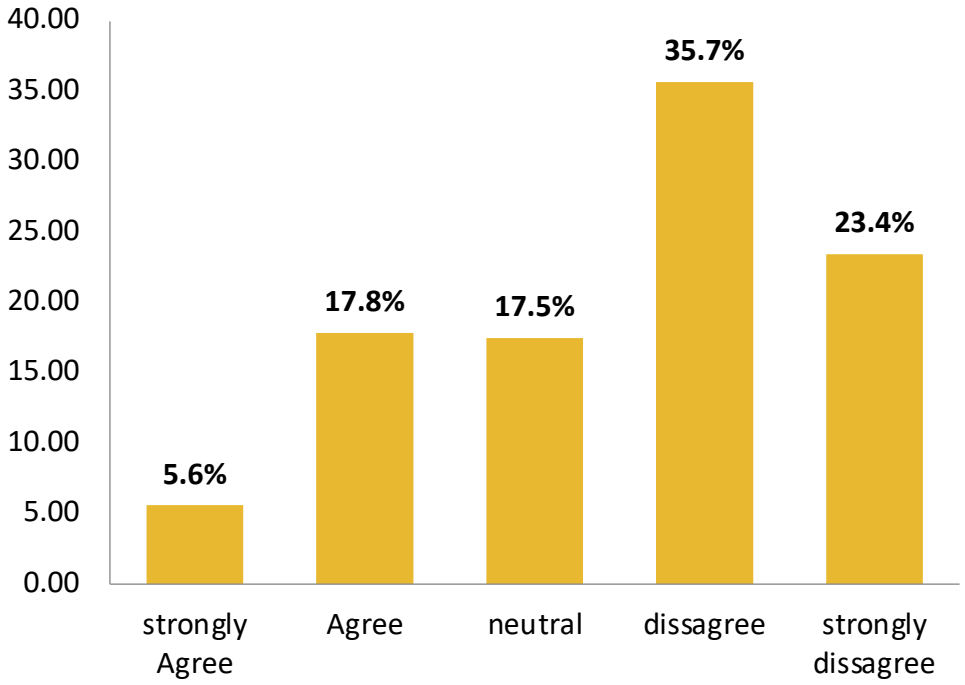
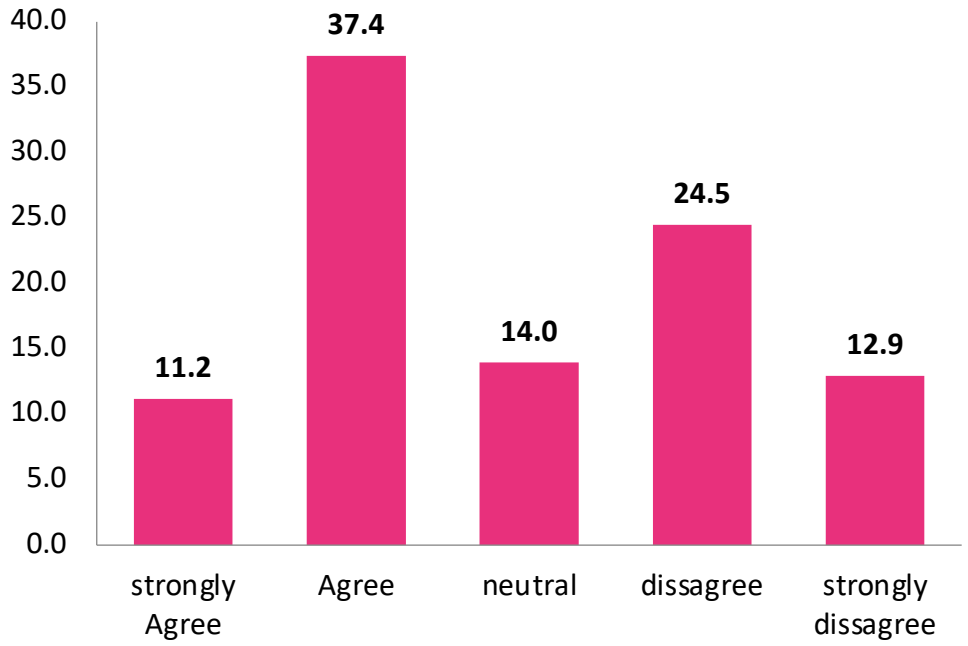
Instructors know the appropriate way to evaluate students in an online learning environment(223).



Teachers use new and diverse methods to evaluate in the online learning environment (232)



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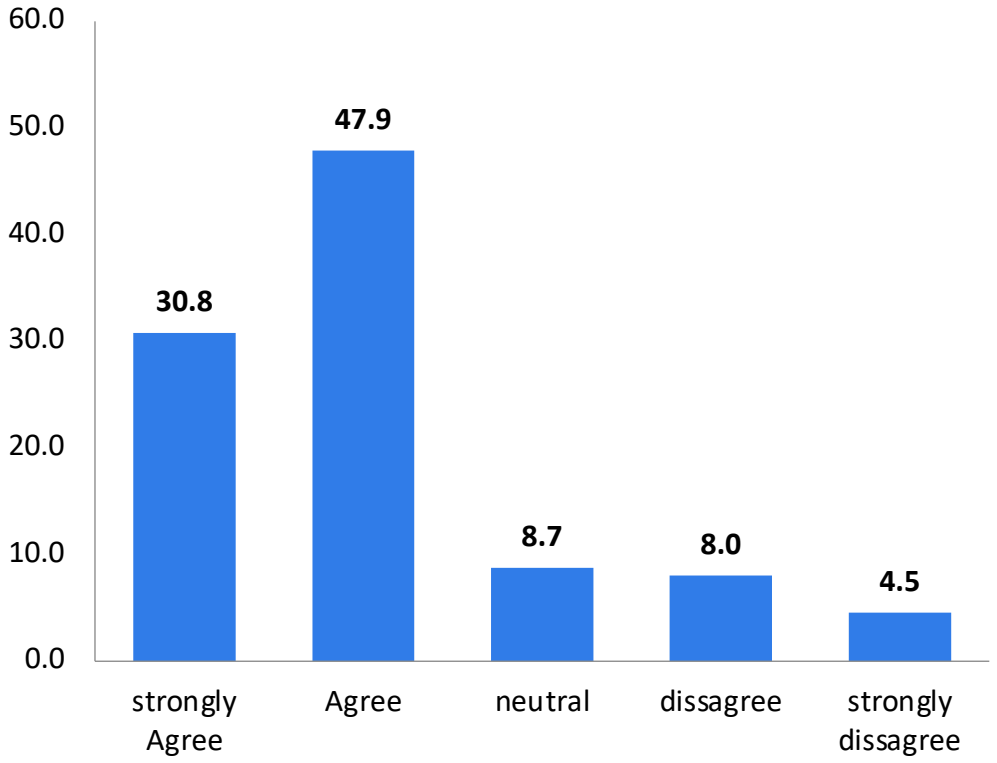
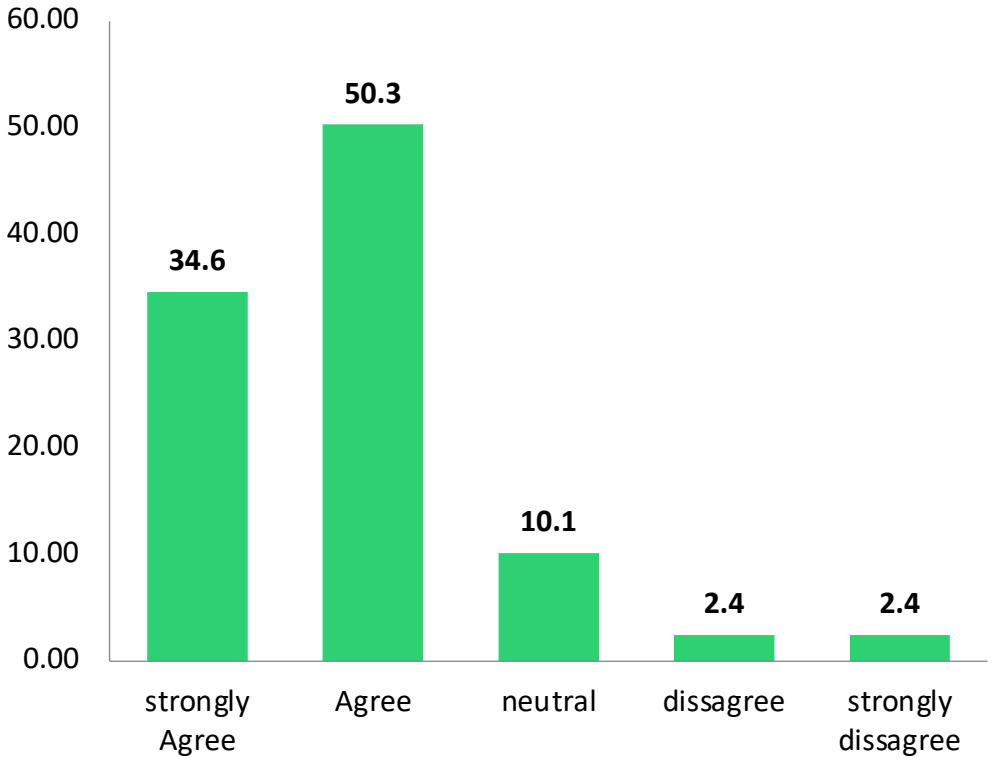
Learning takes place better when professors conduct the formative assessment (286)



Learning takes place better when teachers provide timely feedback (286)



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Conclusion and important remarks

- **Students believe that they learn better when there is formative assessment and timely feedback.**
- **They stated that their instructors did not use sound ways of assessment in OL.**

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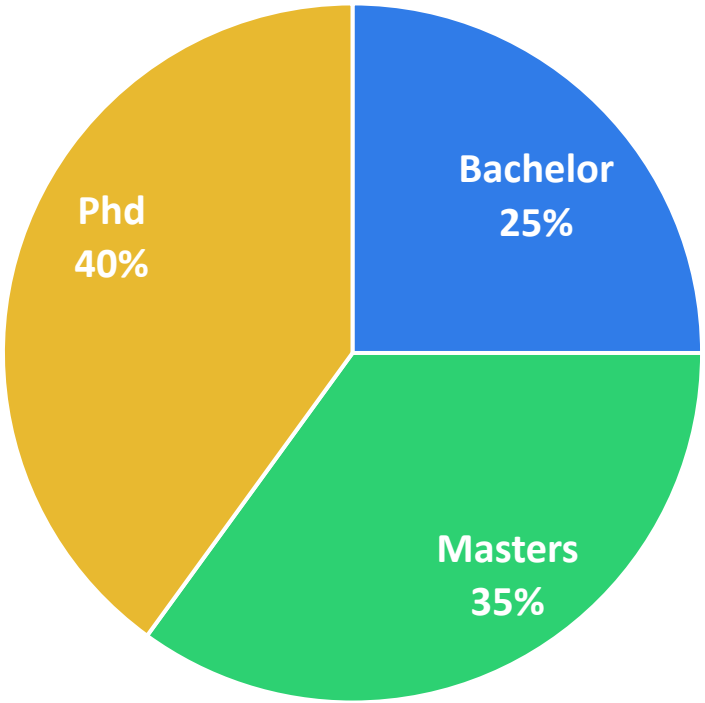
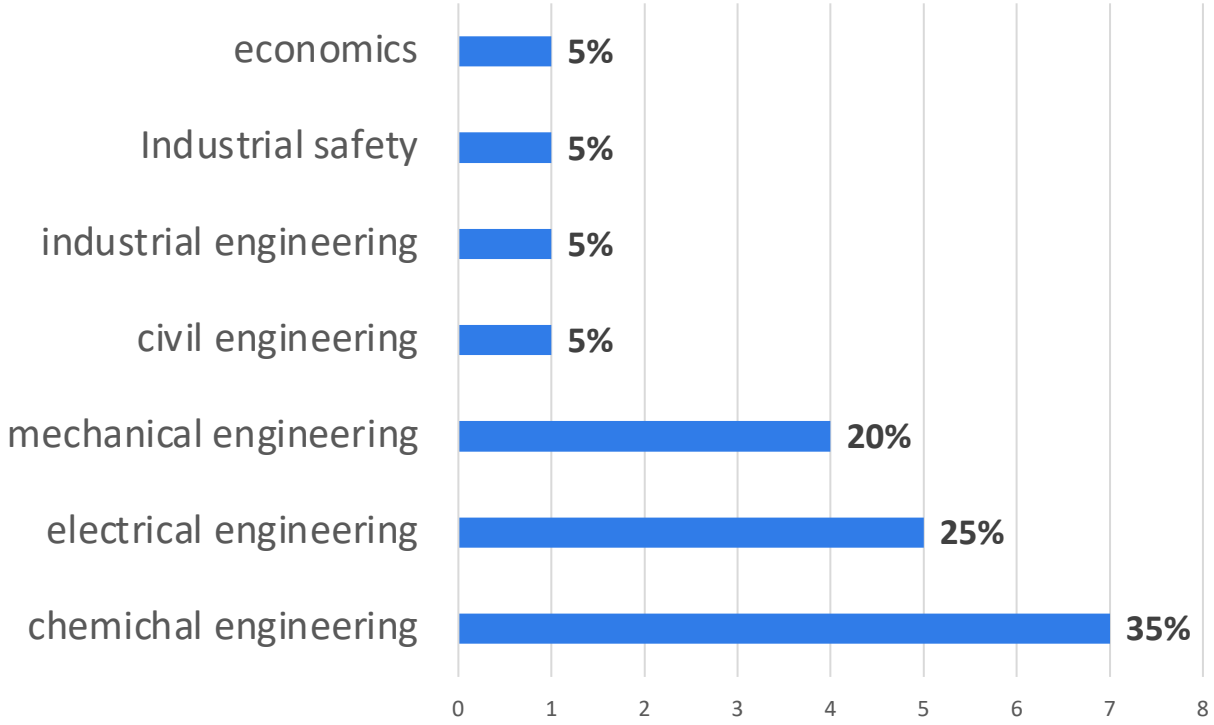
Respondents: Companies



37 Respondents



33 Respondents

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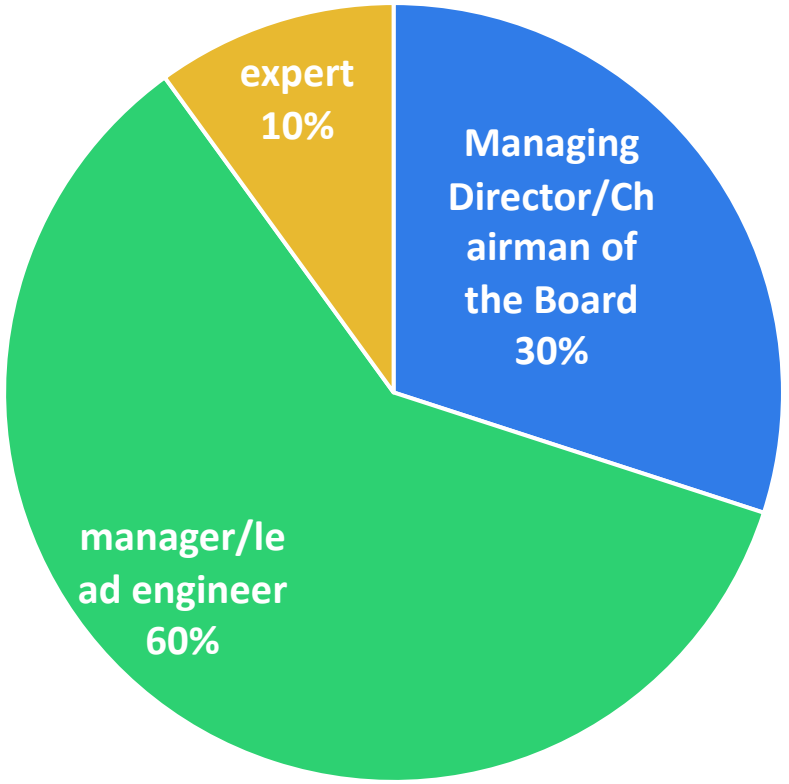
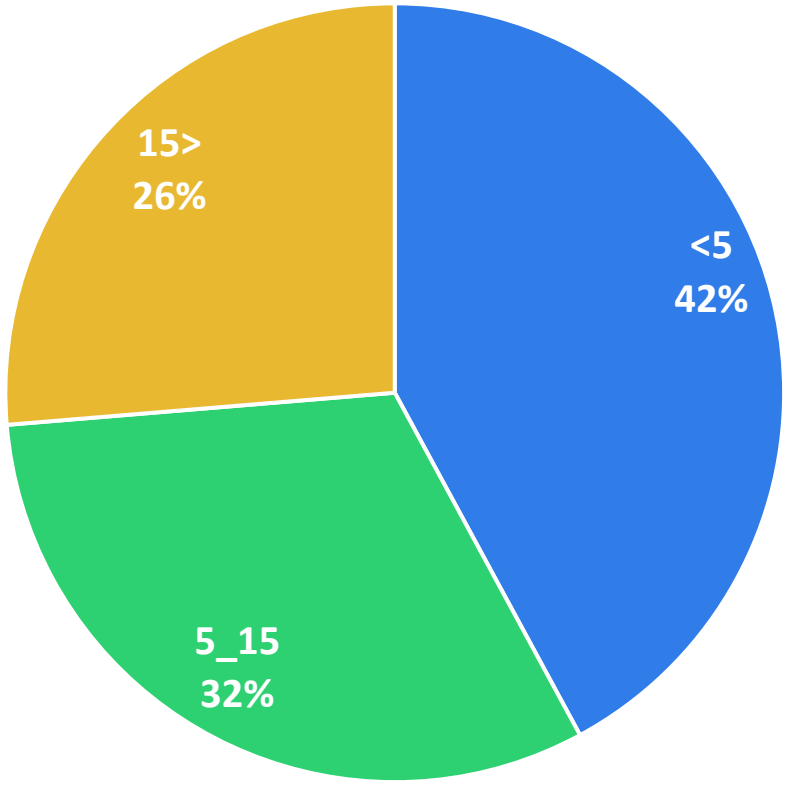
Role: 30 Respondents



Working Experience: 34 Respondents



Multiple Choice Questions

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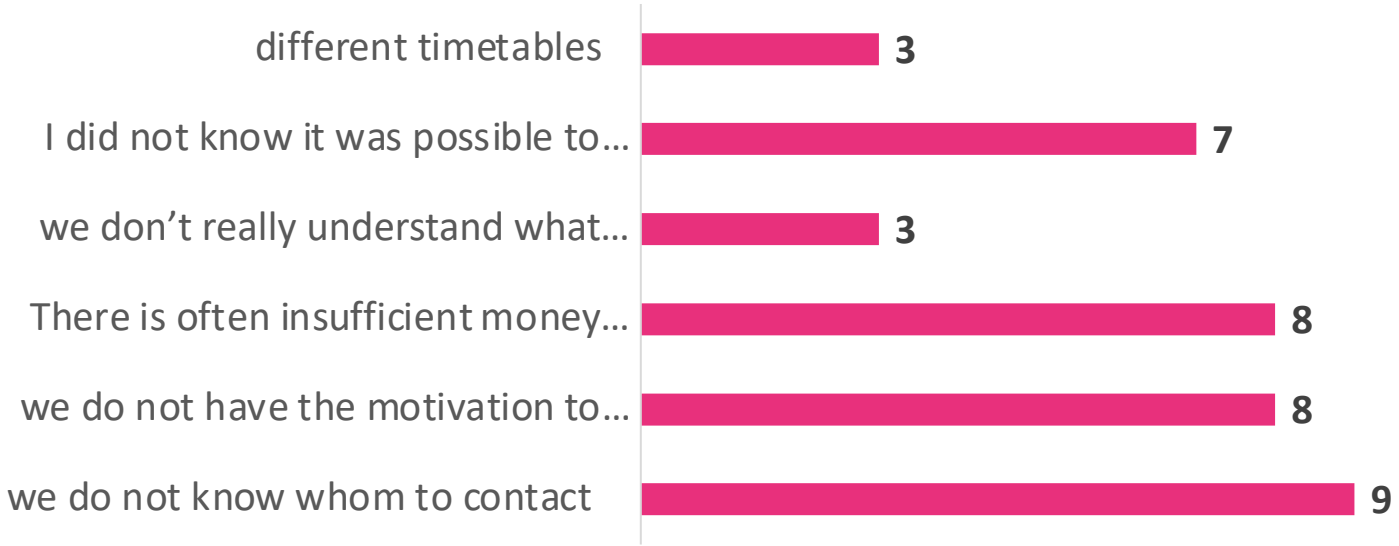
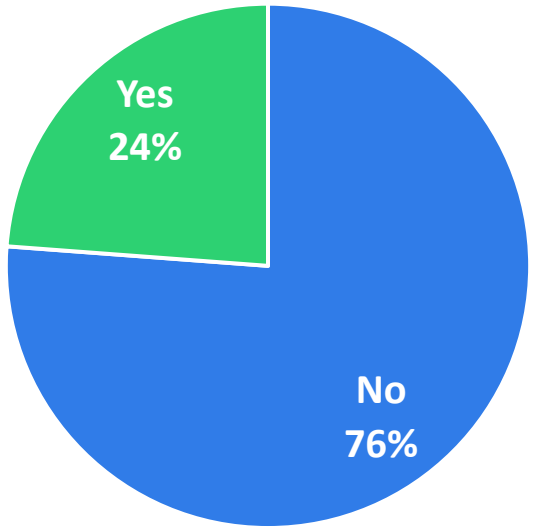
Is there anything preventing your company from university collaboration? (38)



Does your company have a specific contract with the university in the field of knowledge exchange? (19)



Multiple Choice Questions

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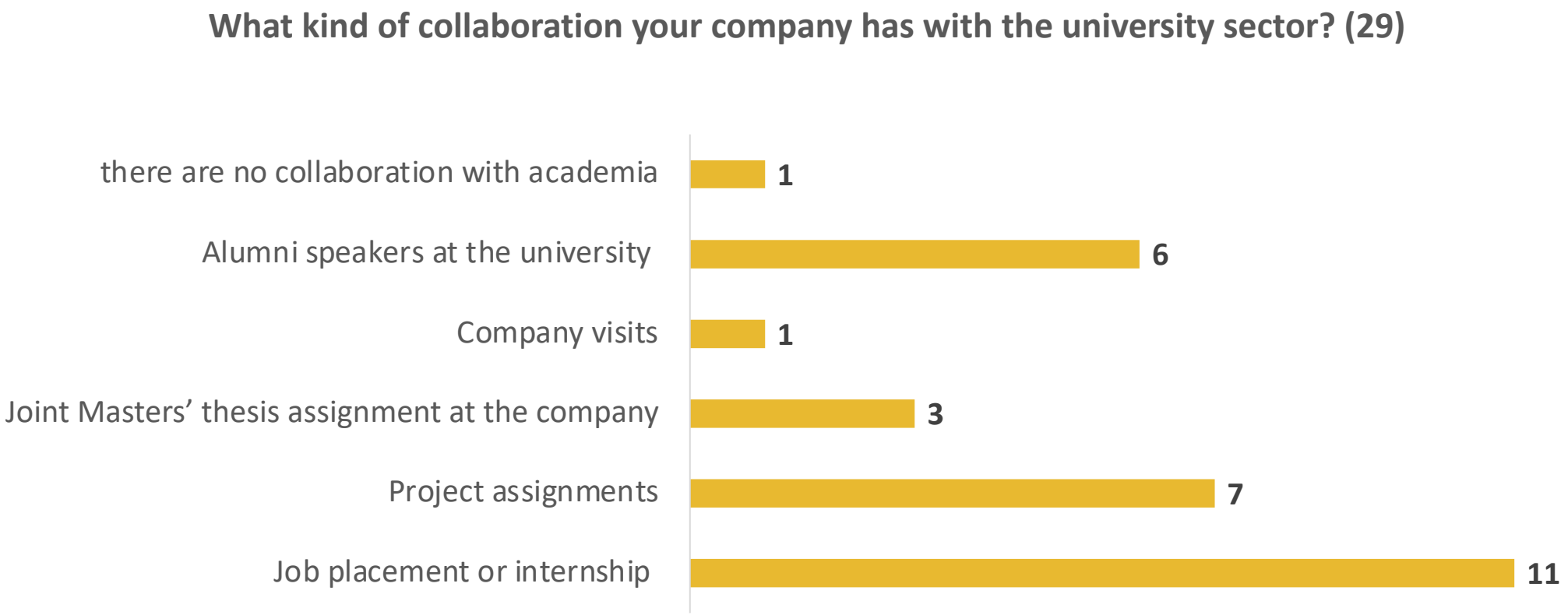

Multiple Choice Questions

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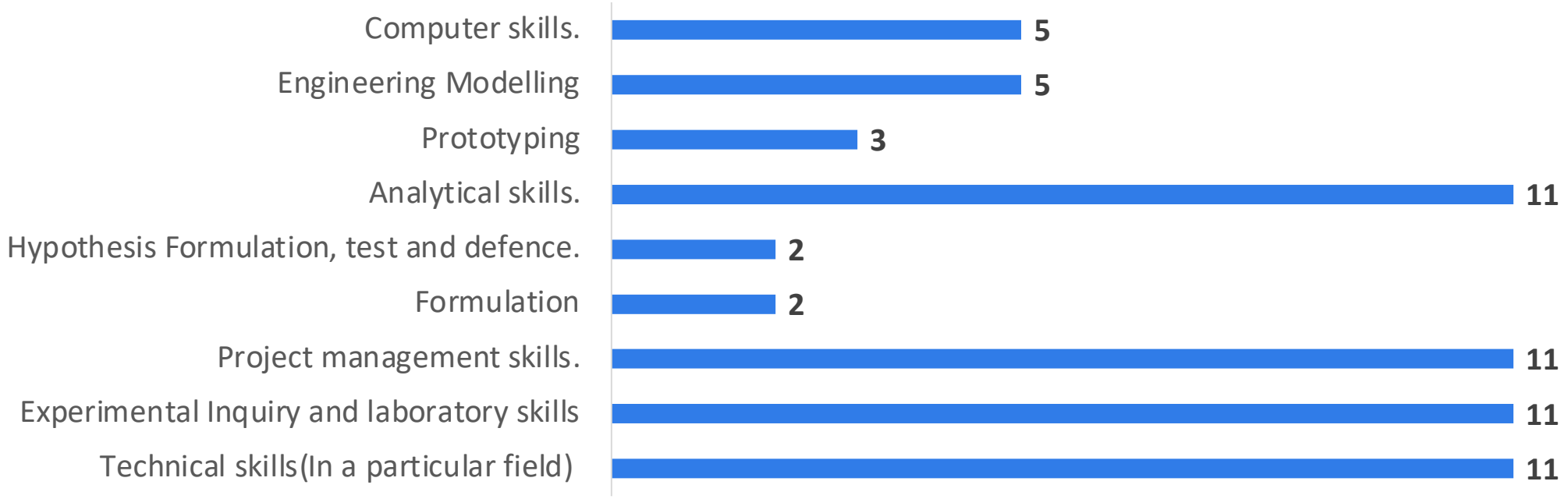
Which one of the following skills do the students need upskilling and would require more training? (61)



Multiple Choice Questions

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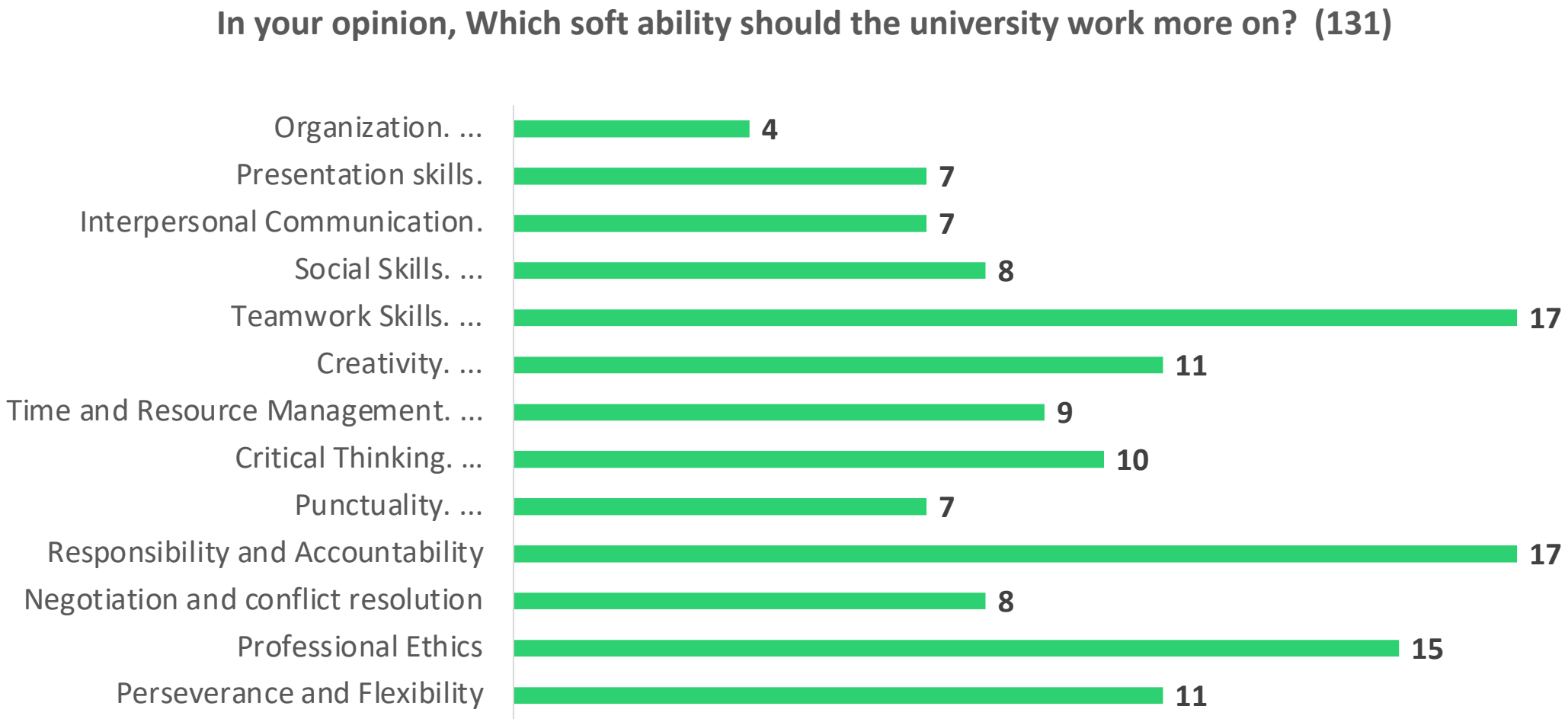

Likert Questions: STEM

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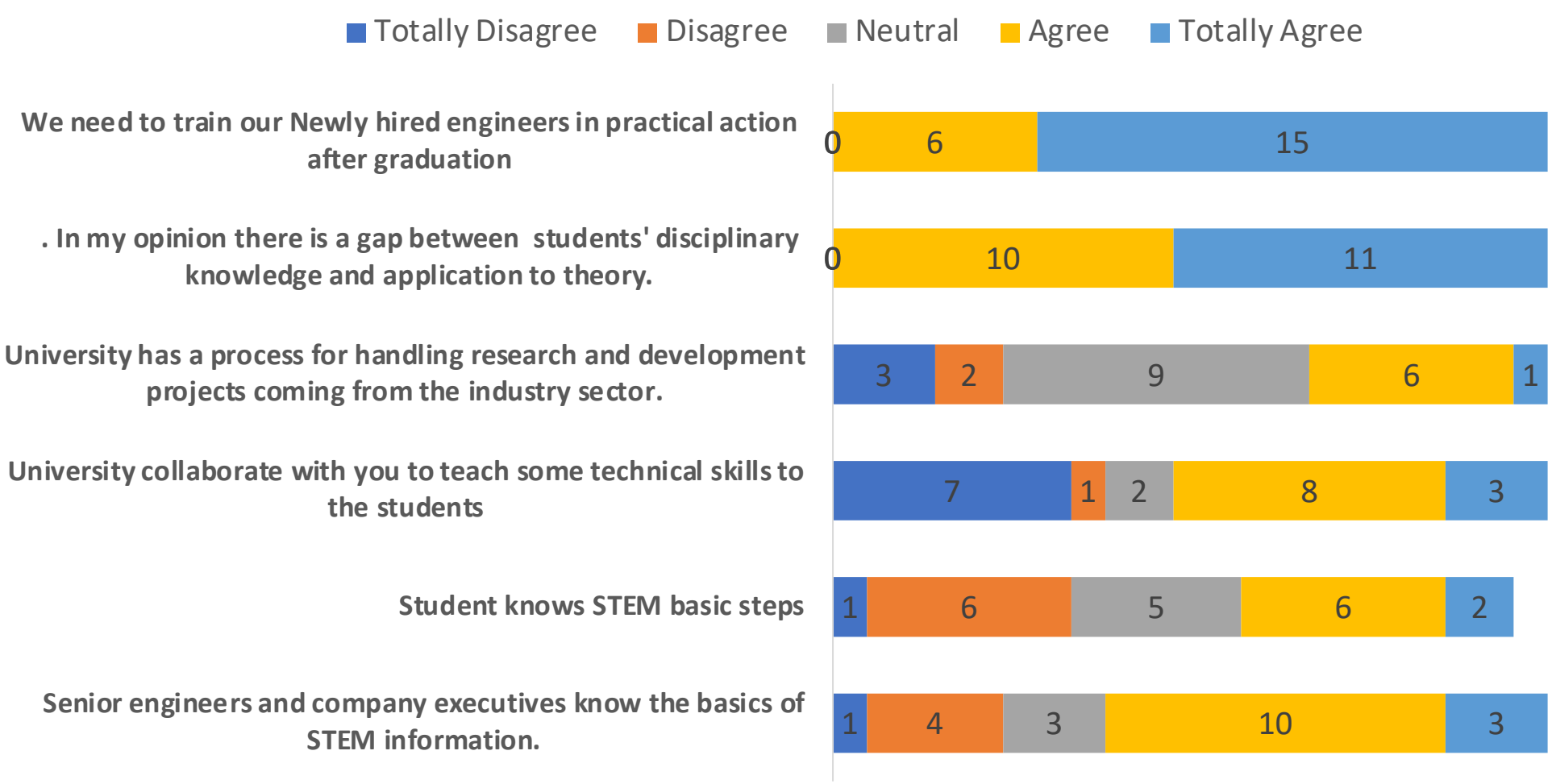

Likert Questions: STEM, soft and hard skills

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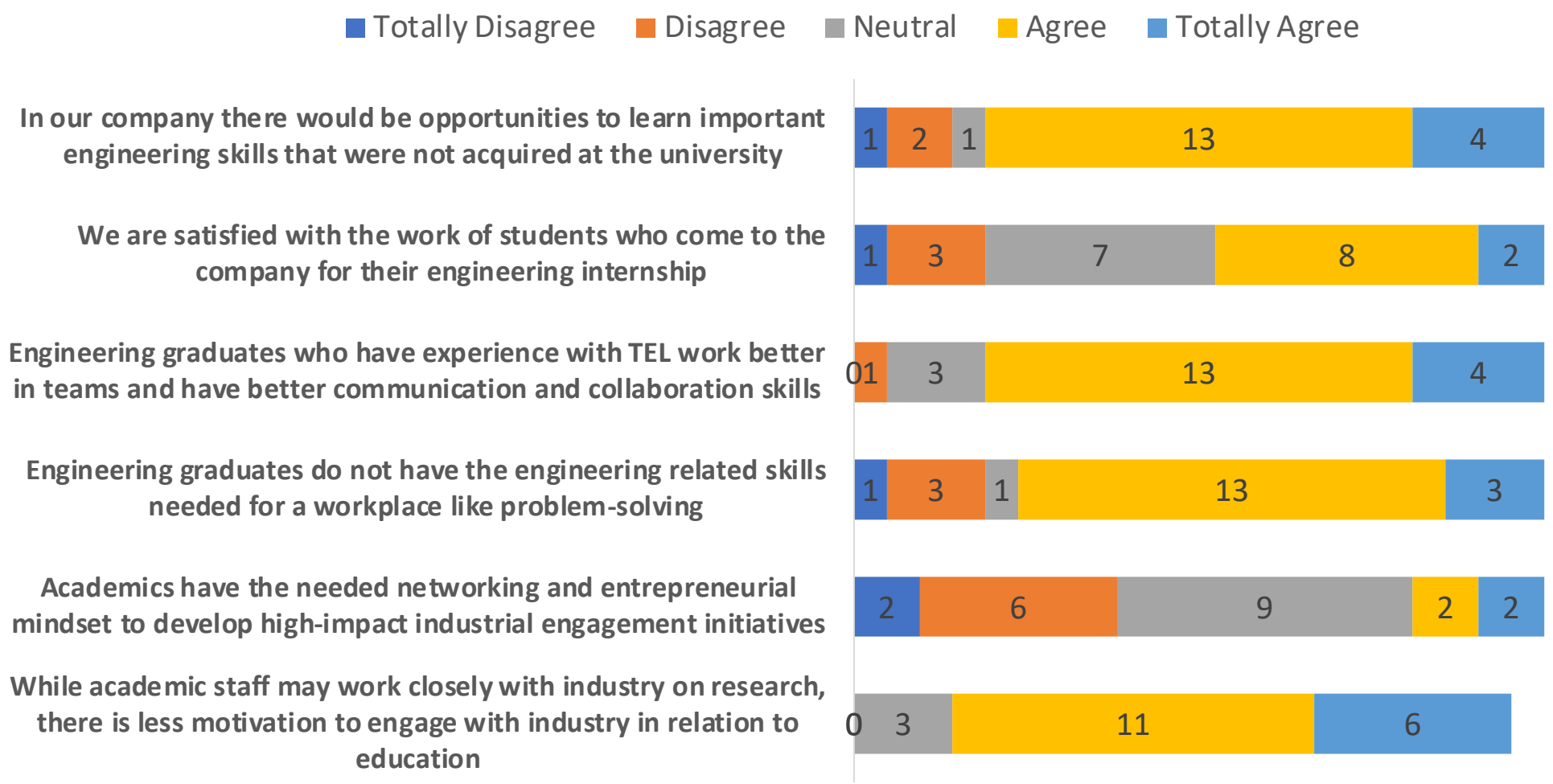

Conclusion and important remarks

- **Company representers all agreed that there was a gap in students factual Knowledge and application and they lack engineering skills.**
- **They stated that they always need to train their newly hired, in engineering practice**
- **There is little to no collaboration between academic staff and industry sector on education area.**
- **They stated that students who have experience with TEL had better team work skills.**

Information: Participation of IR partners

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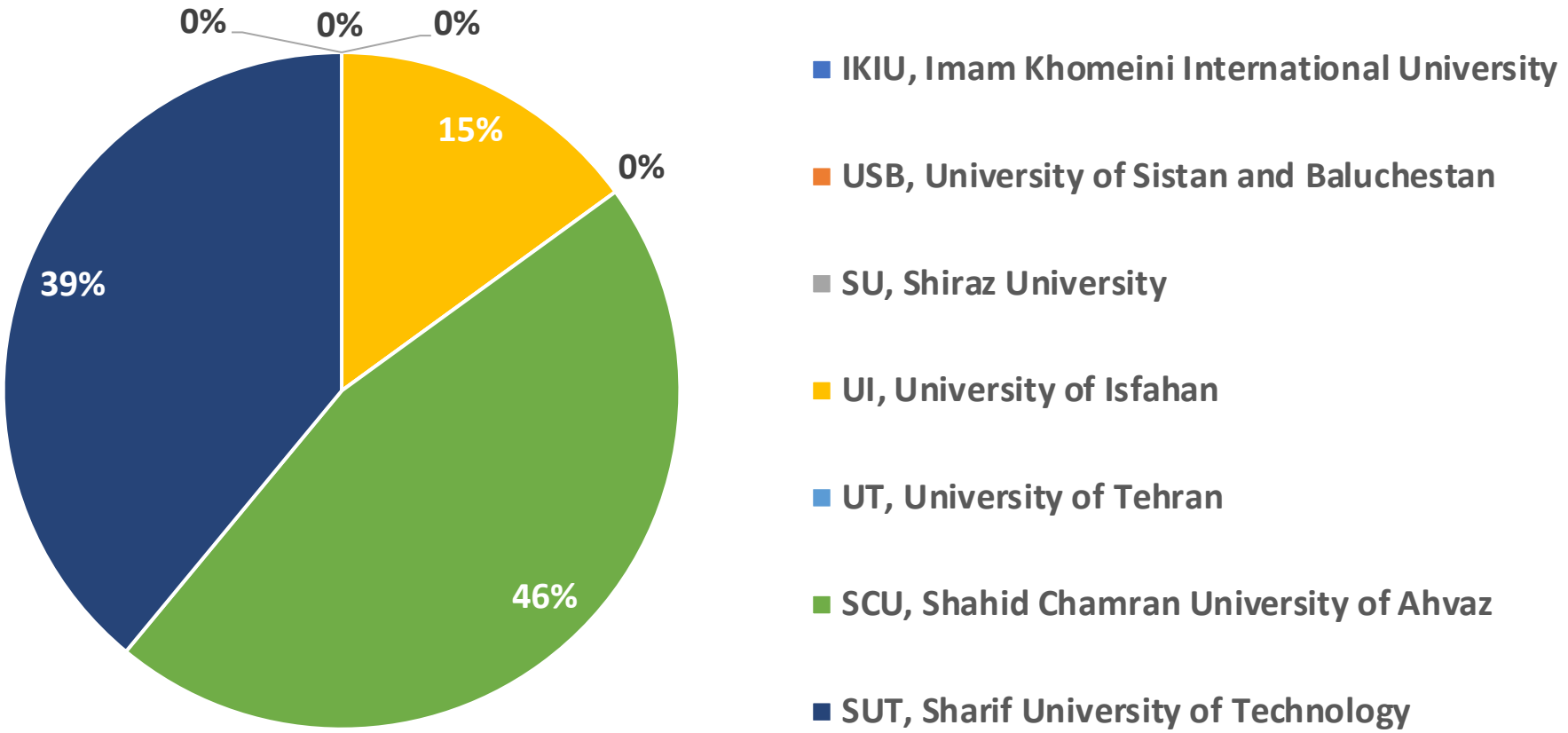
Total respondents: 20 business actors



Multiple Choice Questions

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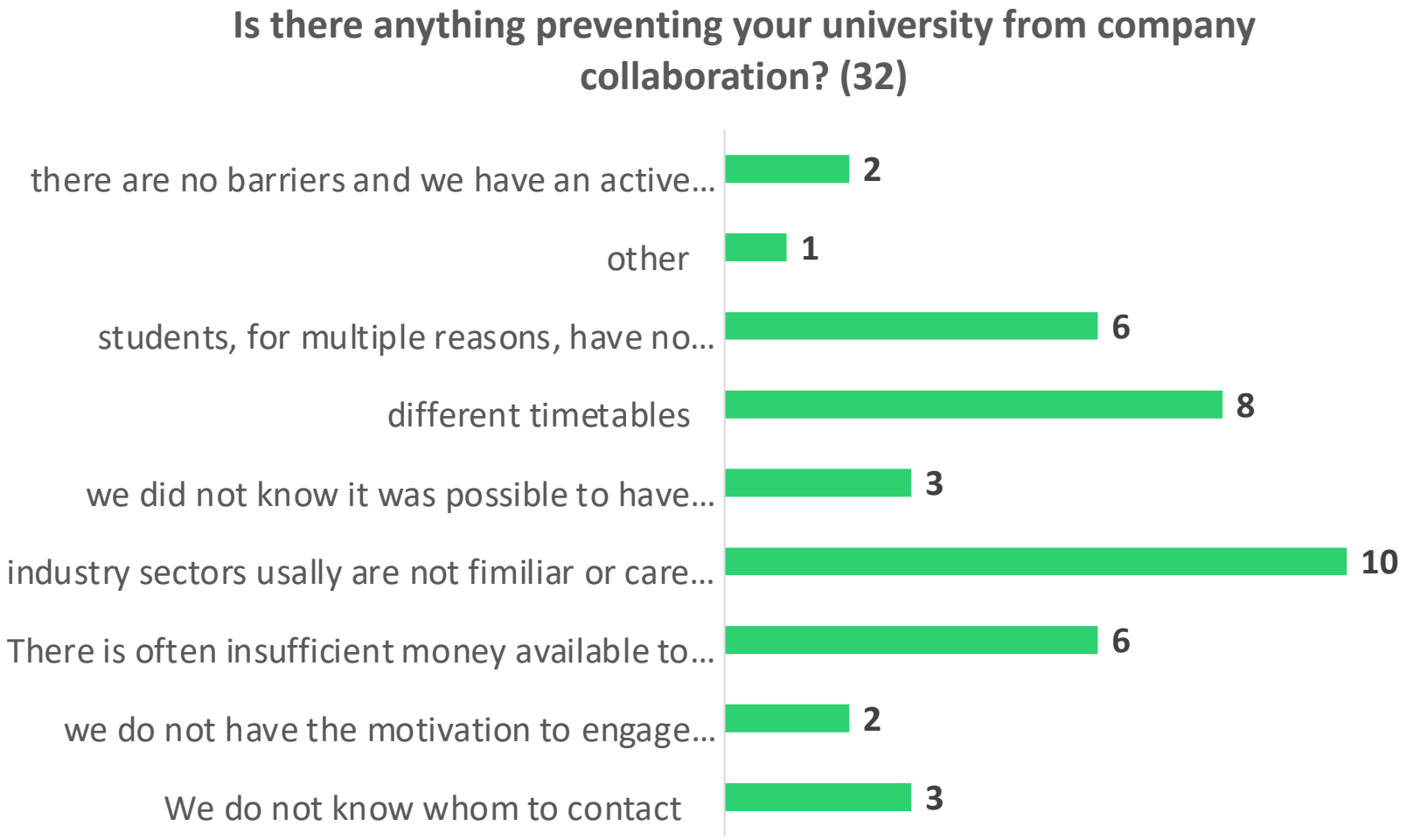

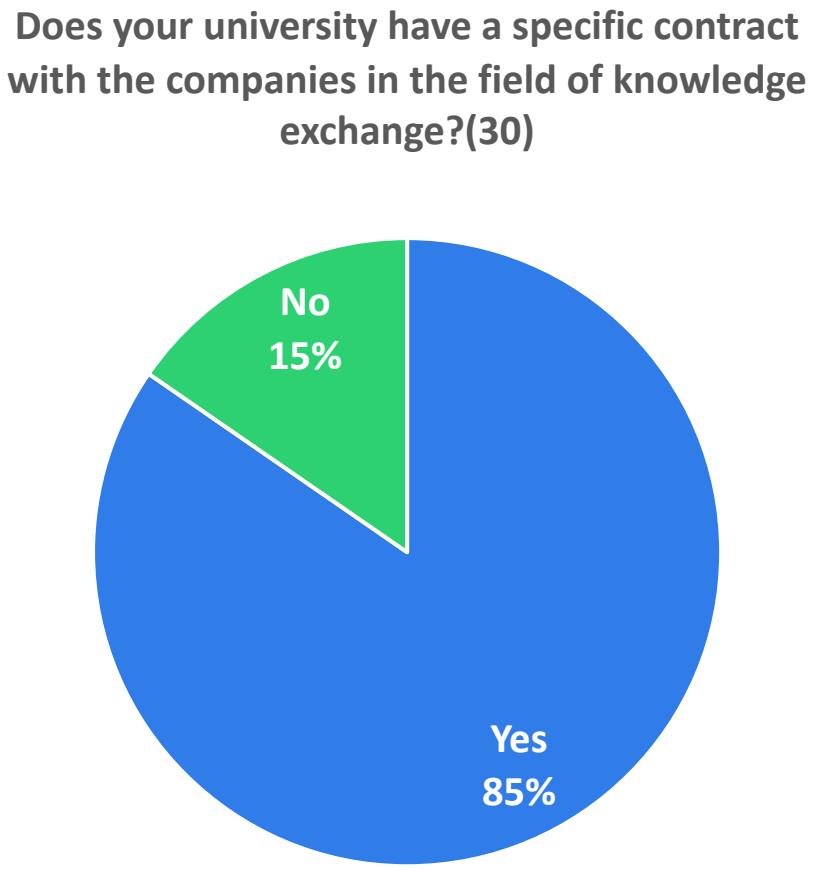

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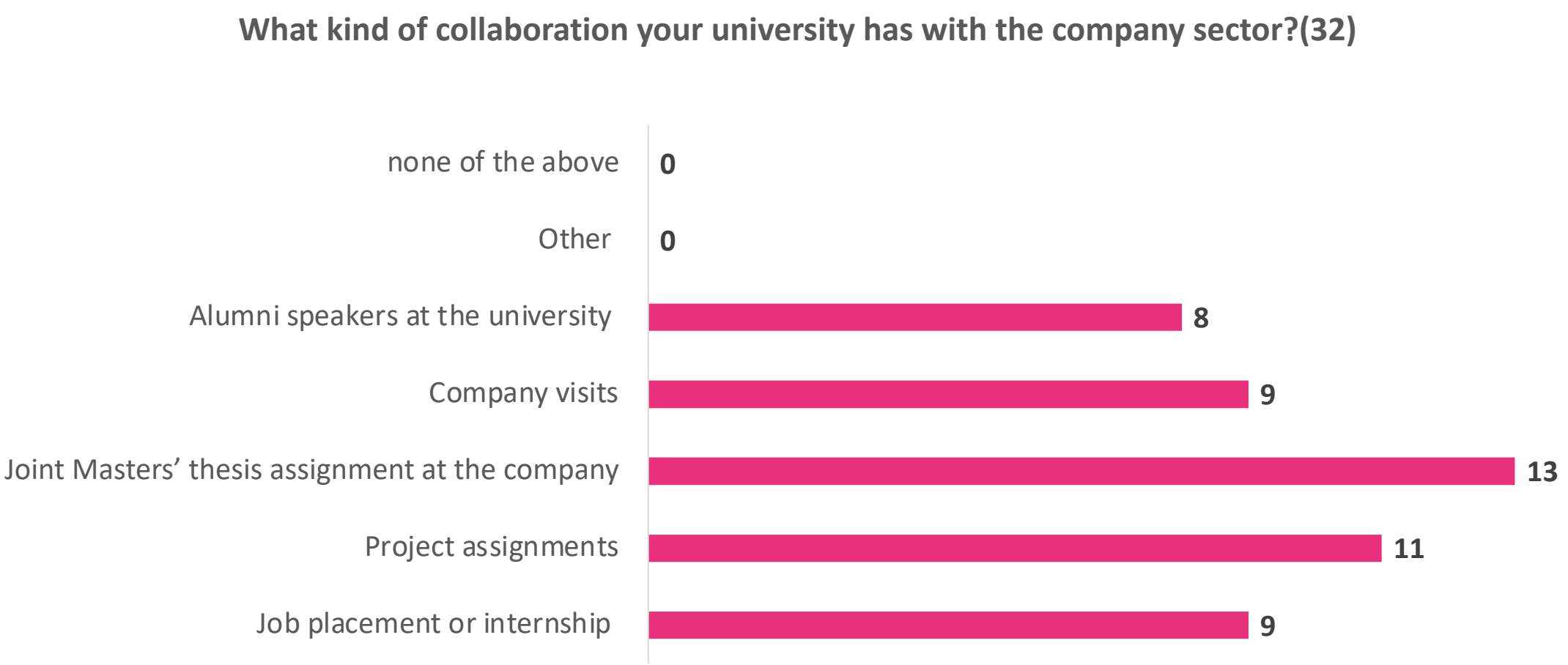

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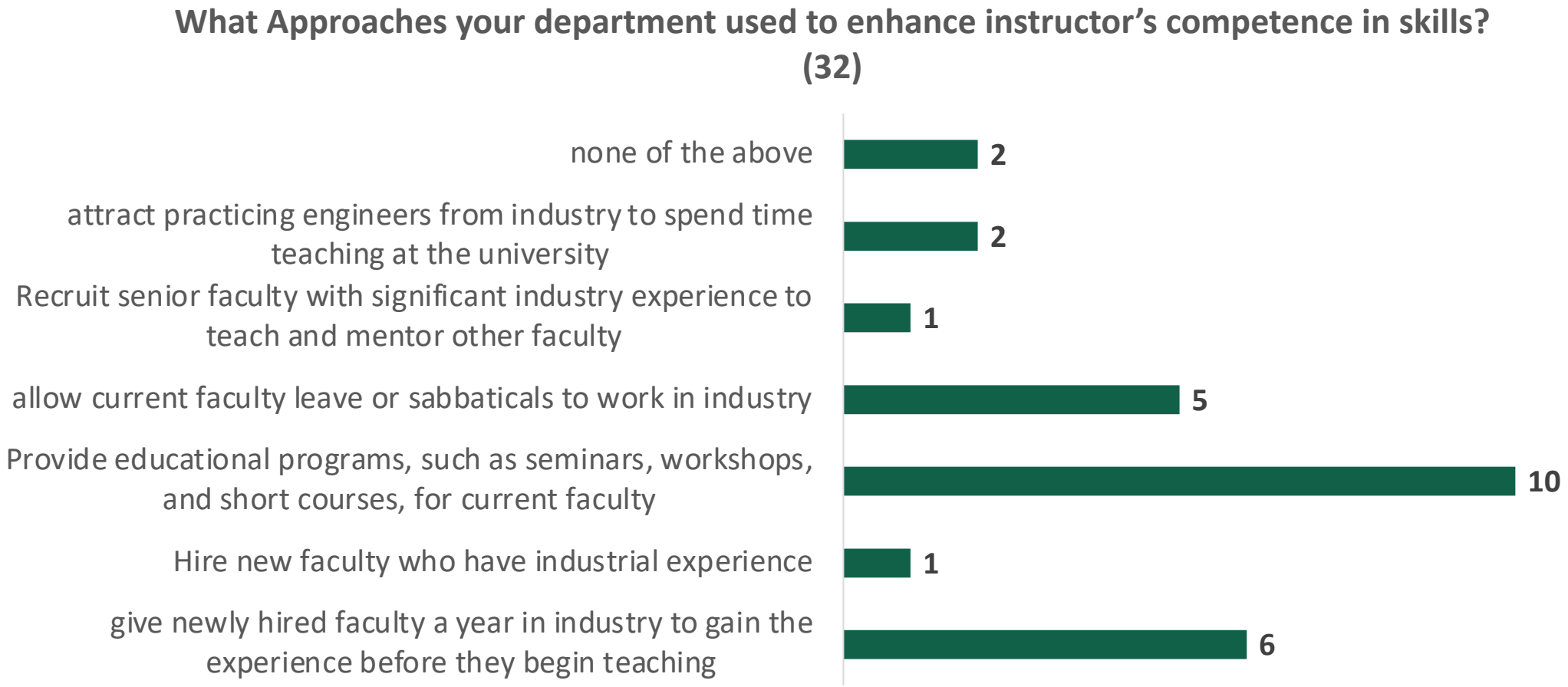

Likert Questions: Theory and Practice

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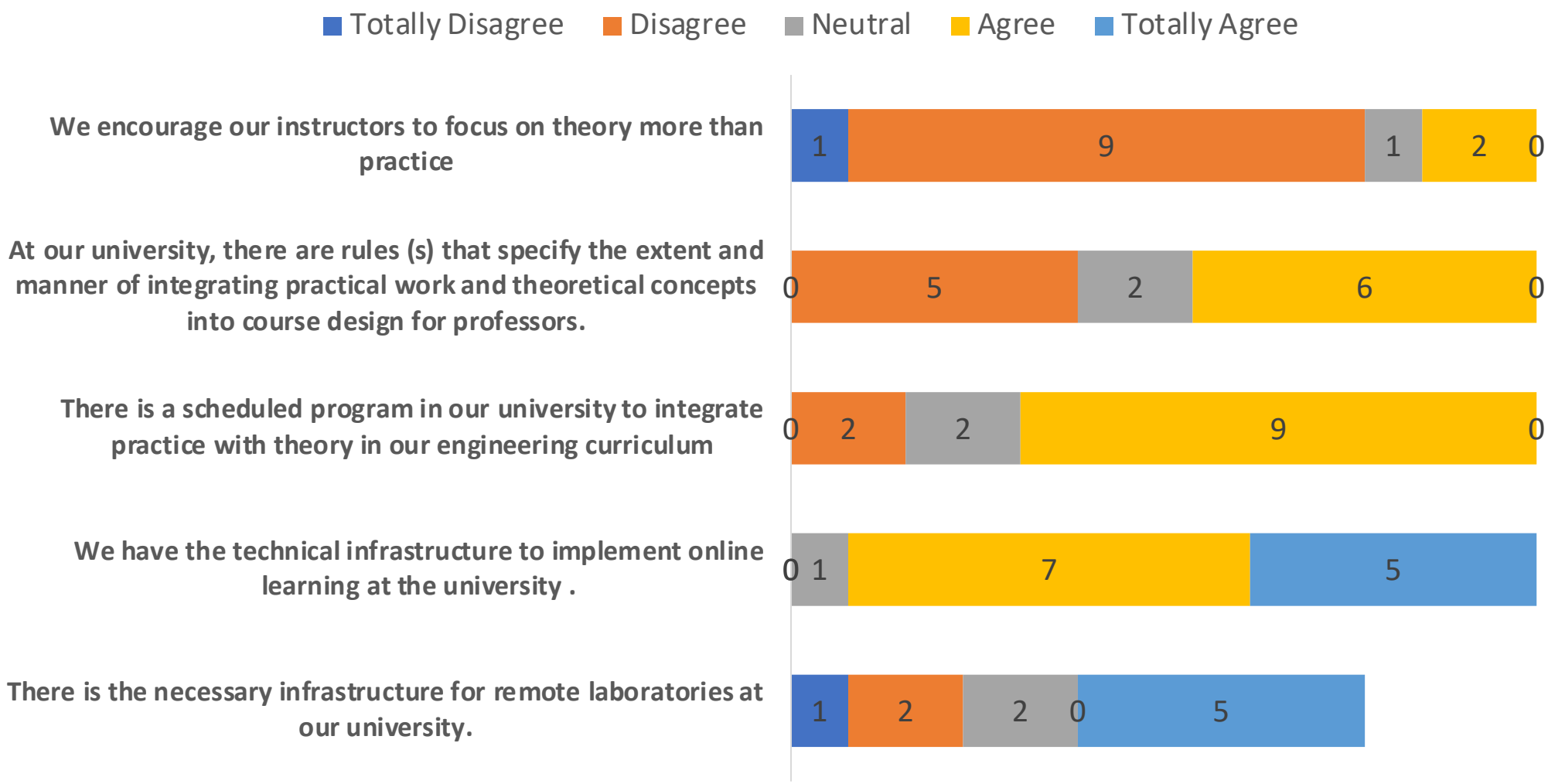

Likert Questions: motivation and self-regulation

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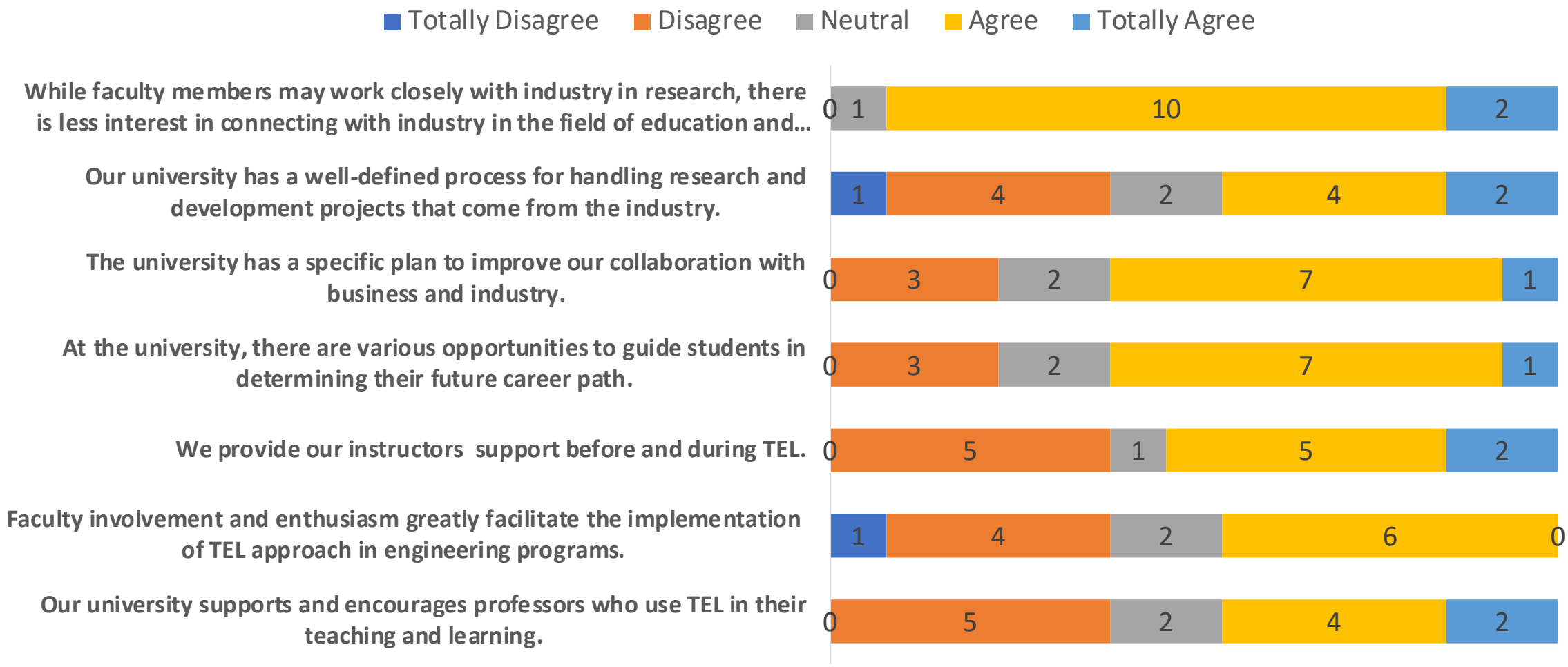

Likert Questions: pedagogy for technology-enhanced learning

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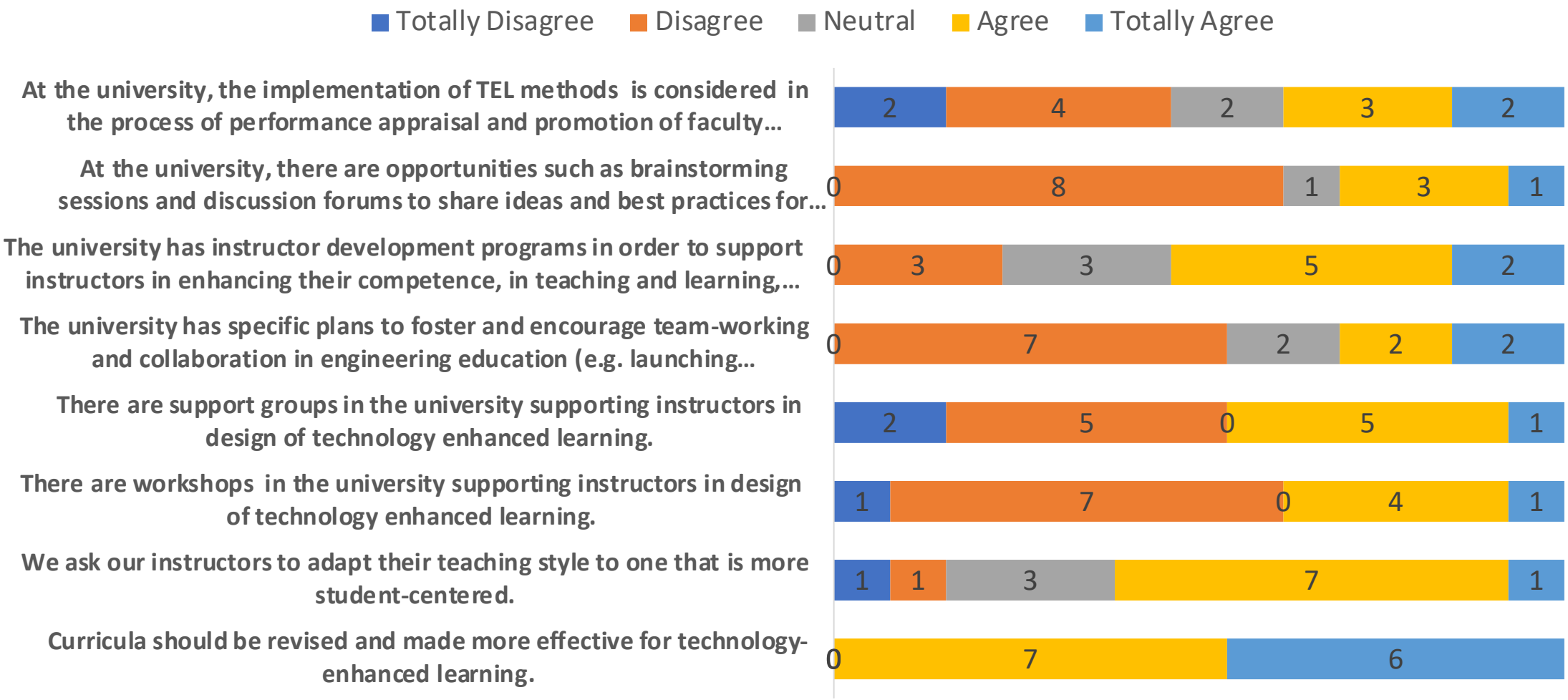

Conclusion and important remarks

- **Business actors in university believe that they have the necessary infrastructure for OL**
- **Majority of them stated that they ask instructors to focus on teaching theory rather than application.**
- **There is little to no collaboration between academic staff and industry sector on education area.**
- **They all think that curricula should be revised and be more fit for TEL.**

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Thank you for your attention!

2nd UNITEL kick off Meeting
28-29 September 2021