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EAFP EUROPEAN ASSOCIATION OF
FACULTIES OF PHARMACY



Methodology Booklet

Annexe 2:
Teaching Methodologies



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Commission

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1st Edition

WELCOMING WORDS FROM EPSA

Dear readers,

We are all different types of people. We like different things, we perceive the same situations in a different way and we learn differently. Our diverse approaches towards learning were highlighted even more with the emergence of new digital tools that not only allow us to find any information we need within several clicks, but also have an impact on the rapidity and efficiency of our learning process. These changes call for a shift in the way students are taught for them to acquire all the knowledge they need before graduating, together with the skills necessary for a constantly changing job market. This is especially important for students enrolled in healthcare university programmes who need to learn a big amount of information during their studies, but also be able to face all the novelties that appear in their field once they graduate.

Therefore, it is my greatest pleasure to present to you the **Annex 2: Teaching Methodologies** of the 1st EPSA Methodology Booklet. This document is a collection of approaches and tools that pharmaceutical students believed to be the most effective in assuring a high-quality teaching process. It aims to help the universities and educators to consistently improve the learning experience of students, based on their real needs. While I agree that there is no such thing as a one-size-fits-all approach to teaching, considering the differences amongst students, I believe that combining multiple methodologies and tools targeting different types of learners would increase the involvement during their learning journey.

Without further ado, I invite you to read this document, hoping that you will find the outcomes presented interesting and useful. I count on your support in EPSA's quest of adapting the ways teaching is done across Europe to the available tools and the needs of the healthcare professionals of tomorrow.

Yours in EPSA,
Andreea Iordache
Educational Affairs Coordinator 2020/2021



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Executive Summary

The aim of the EPSA Methodology [Booklet](#)¹ is to gather and present the opinion of the European pharmaceutical students and recent graduates on the teaching methodologies currently utilised by the European faculties of pharmacy and to assist educators and policymakers to continue to evolve and improve the European pharmaceutical education. The Annexes present a more detailed follow up on the main outcomes of the 1st EPSA Methodology Booklet released in 2018.

The survey conducted for **Annexe 2: Teaching Methodologies** consisted of 30 questions that aimed to evaluate the opinion of the European pharmaceutical students and recent graduates regarding:

- **Integration of Divergent Teaching Methods** into the pharmaceutical curricula
- **Knowledge transfer structuring**
- **Tools** that educators can use to facilitate the learning process
- The **assessment of students' satisfaction** with the teaching process.

Annexe 2: Teaching Methodologies was developed with the aim of assessing in more detail the methods and tools students would like to see used by their educators during their studies to ensure a better knowledge transfer and a more effective teaching process. 1342 answers from 28 European countries were received, covering different levels of studies.

98.06% of the survey respondents believed that student representatives should be involved in the decision-making process of the pharmaceutical curricula, either to vote alongside educators or to offer opinions, suggestions and concerns. Moreover, students expressed their wish to have access to a **student-centred environment** during their studies, that would include **active learning** and **problem-based learning** concepts.

Respondents believed that lectures should include **dynamic and visually appealing** presentations and that the use of **video and other digital tools** and **group discussions** would increase the interactivity during lectures. They also suggested that seminars should be mostly practical (case-studies, group discussions, debates etc.) or a mixture of theory and practical work; **the use of case studies and quizzes could increase the interactivity of the seminars**. Respondents believed that the most helpful tools in gaining and retaining the information are the **links to open source videos, access to recordings of the**

¹ <https://www.epsa-online.org/methodology-booklet/#1596709229047-ac96fbd6-8eb5>

lectures, quizzes and lecture summaries.

The characteristics most appreciated for educators were: the **ability to adapt to the students' level of knowledge** and **provide clear explanations, approachability**, the **capacity to design interactive lectures or seminars and to prepare appealing and easy to follow presentations**.

Almost 60% of the survey respondents considered that **studying materials should be provided to students a few days before every session**.

Even though 70.83% of the respondents stated that their universities are developing surveys to evaluate the educators and/or the teaching process, **only 37.15% said that their feedback is actually implemented**. More than half of the respondents believed that feedback should be collected from students at the end of each semester.

Based on the previously mentioned outcomes, EPSA calls for:

- The Integration of Divergent Teaching Methods into the pharmaceutical studies by:
 - Including student representatives in the decision making process of the pharmaceutical curricula;
 - Implementing a student-centered, problem-based approach to learning;
 - Designing lectures, seminars and laboratory sessions that promote active learning.
- Improvement of the knowledge transfer between educators and students and use of a wide range of tools to ensure an effective learning process (including digital tools).
- Consistent assessment of students' satisfaction with the teaching process and implementation of the feedback received.

Introduction

Education plays an important role in the modern world, being considered as the basis for the prolongation of culture, instruction of individuals and evolution of society. Nowadays the digital transformation leads to significant changes in education. In the times of the pandemic, both teachers and students had to adjust to new teaching methodologies. But which methodologies are the best for students?

Student-centred learning is defined as an approach that replaces purely transmissive models of education with an outcome-based perspective implemented through new approaches to teaching and learning, effective support and a curriculum focused on the learner, leading to high-quality learning [paths](#)². It is said to improve student learning, critical thinking and active citizenship, which prepares students better for their future professional lives. Student-centred learning is often implemented with small working groups and a mixture of student- and teacher-centred approaches. The most important part of student-centred learning is students' participation in decision-making processes when students are treated as partners in the learning process and have an active role in developing learning paths.

Policymakers recently acknowledged the importance of taking a closer look at improvements that can be made in the education area. The Portuguese Presidency of the European Council (2021) put a special emphasis in their programme on lifelong learning, innovative teaching methods and digital [education](#)³. Education, training and transversal skills will play a key role in helping the EU recover from the COVID-19 crisis and creating a greener, digital and more resilient Europe. Focusing on lifelong learning is the cornerstone for improving pharmacy education across Europe, as consistent education in all Member states contributes to the resilience of healthcare systems.

² European University Association, 2019, Student-centred learning: approaches to quality assurance

https://eua.eu/downloads/publications/student-centred%20learning_approaches%20to%20quality%20assurance%20report.pdf

³ <https://www.2021portugal.eu/media/rohplsqf/portuguese-presidency-en.pdf>

Survey analysis

A. General information

The survey consisted of 30 questions divided into 4 sections:

- Integration of Divergent Teaching Methods into the pharmaceutical curricula
- Knowledge transfer structuring to ensure an effective learning process
- Tools that educators can use to facilitate the learning process
- Assessing students' satisfaction with the teaching process

The target audience for this survey were the European pharmaceutical students of different levels of studies, as well as recent graduates from 37 European countries.

The survey was open from the 4th of October 2020 until the 28th of February 2021 and 1342 responses were received from 28 European countries (Austria, Bosnia & Herzegovina, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, The Netherlands, North Macedonia, Portugal, Poland, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom).

The pharmaceutical students that responded are distributed across different levels of studies, with a higher percentage of students being in the advanced years of pharmaceutical studies (3rd, 4th and 5th), having more in-depth knowledge about the teaching methodologies used in their universities. Recent graduates and PhD students are also represented in the analysis for this report (*Fig. 1*)

What year of studies are you in?

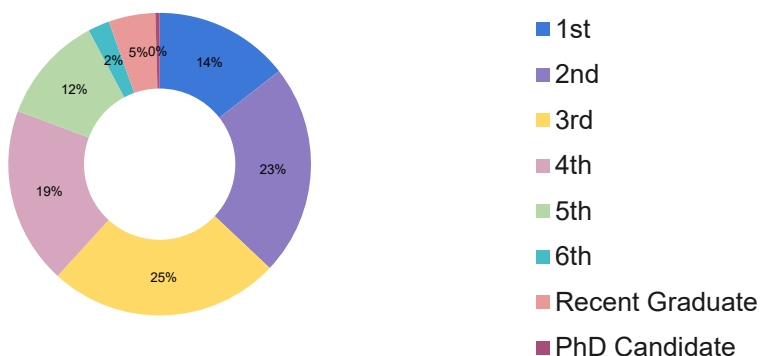


Fig. 1

Survey analysis

B. Integration of Divergent Teaching Methods into the pharmaceutical curricula

Key highlights:

- 98.06% of the respondents believed that student representatives should be involved in the decision-making process of the pharmaceutical curricula, either to vote alongside educators or to offer opinions, suggestions and concerns.
- More than half of the survey respondents answered that it would be beneficial for pharmaceutical students to have access to a student-centred learning process.
- Students believed that the most important aspect of a student-centred learning process is to have the opportunity to ask questions at any time, both live and online.
- 92.39% of the respondents said that the use of the active learning concept in pharmaceutical studies would be beneficial for students.
- Survey participants considered that an environment that promotes active learning should stimulate the critical thinking skills of students and should encourage problem-based/research-based learning and open discussions between students.
- 86.08% of the survey respondents believed that a problem-based learning approach should be implemented in pharmaceutical studies.
- Most of the survey respondents believed that the best teaching method for a problem-based learning process is the use of real-life pharmacy simulations.
- Listening to a presentation and taking down notes from the educator's teaching materials were considered as not creating a problem-based learning environment.

Divergent Teaching was defined in this survey as a way of thinking that facilitates the learning process in new, innovative directions for deeper understanding, which consists of challenging current ideas, looking for a variety of solutions and being willing to fail and grow.

Most of the survey respondents (98.06%) mentioned that student representatives should be involved in the decision-making process of the pharmaceutical curricula. Over half (52.75%) of the participants considered that student representatives should have the right to be involved in the decision-making for the design of the curricula alongside the educators, while still a significant number (45.31%) believed that the final decision should be made by educators based on the opinions, suggestions or concerns expressed by the student representatives (*Fig.2*).

Do you think that student representatives (e.g. student senate, student associations etc.) should be involved in the decision-making process when it comes to the design of the pharmaceutical curricula?

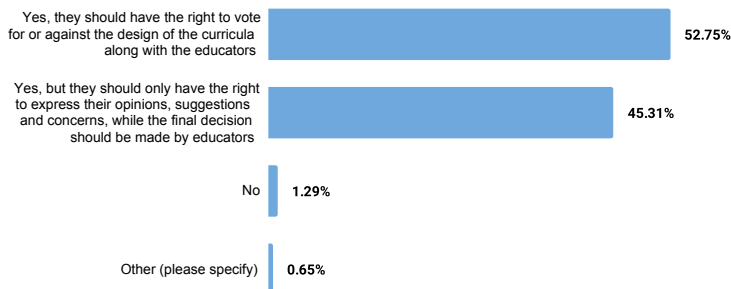


Fig. 2

Few respondents explained that student representatives should be involved in the process only if they are democratically elected by students and if they show true interest in how the studies are conducted, without using the representative role for personal gain only.

Respondents believed that the main reasons why student representatives should be involved in the decision-making process for the design of the pharmaceutical curricula were to:

- ***Advance a student-oriented curricula:***

It is important to accommodate students' needs, to deliver fit-for-purpose knowledge for their future careers in pharmacy. Student representatives have direct experience with the teaching process, noticing what the advantages and disadvantages of different aspects of the curricula are. They know which learning methods are effective and how much effort is necessary from students' side, being able to reflect on whether the mental health of students will be affected by stress and other factors. Moreover, they meet multiple educators that have different styles of teaching and they are able to see what works best for them.

- ***Improve knowledge-transfer***

Communication has two sides and if the receiving end (students) is having difficulty understanding the information, it is important to adjust the way information is presented. In addition, students can have an overall view of all the content of the subjects they are learning and they are able to spot overlaps in the information provided. This way, covering the same information multiple times could be avoided and the time left could be used to put the knowledge into practice.

- ***Facilitate the inclusion of innovative teaching methods and tools***

Younger generations are more accustomed to social media, digital tools and new technologies and they can offer valuable ideas on how to use innovative tools for the improvement of the knowledge-transfer process. They can bring fresh ideas while promoting diversity and inclusion.

- ***Design a curricula that will reflect the advancements of science and technology***

Considering the fast changing nature of the healthcare field and the advancements of science and technology, it is important to consistently assess and revise the curricula. Students might be able to bring new perspectives on the restructures needed in the curricula to feed the needs of modern life and job seeking. Moreover, student representatives are the best source for immediate feedback on the curriculum.

One respondent mentioned that in Switzerland, student representatives can have a say, which has proven to be very effective. Another respondent mentioned that in Ireland, there is a [National Student Engagement Programme \(NStep\)](https://studentengagement.ie)⁴ which trains students as quality assurance reviewers to be included in quality assurance panels for higher education.

Student-centred learning

The following definition for Student-centred learning was used in this survey:

Student-centred learning refers to a wide variety of learning experiences that are intended to address the distinct learning needs, interests, aspirations, or cultural backgrounds of individual [students](#)⁵.

A student-centred approach to learning is considered to improve teaching, by encouraging students to be actively involved in the creation of their learning experience and fostering critical thinking, transversal skills and active citizenship. This way, students will be better prepared for the labour market and [society](#)⁶.

Over 60% (64.40%) of the survey respondents answered that it would be beneficial for pharmaceutical students to have access to a student-centered learning process, while a considerable number (33.82%) expressed that they don't have enough information about the topic (*Fig.3*). The reduced familiarity of the students with the student-centered learning approach might be explained by the fact that the concept is not very widely used in universities at the moment.

⁴<https://studentengagement.ie>

⁵<https://www.edglossary.org/student-centered-learning/>

⁶<https://eua.eu/resources/publications/884:the-quality-assurance-of-student-centred-learning-approaches-to-quality-assurance.html>

Do you think that it would be beneficial for pharmaceutical students to have access to a student-centred learning process?

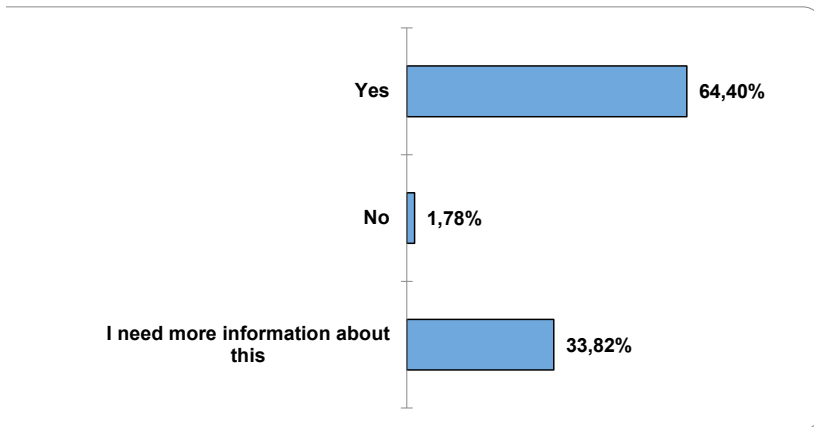


Fig. 3

Students responded positively that the most important aspect for a student-centred learning process is to have the opportunity to ask questions at any time, both live and online (90.13%). Moreover:

- the content of the sessions should be adapted to all learning styles (visual, auditory, kinesthetic) (80.90%)
- the educator should only be a facilitator in the learning process (80.75%)
- students should have the chance to get involved in different activities where they can work in small groups to solve different problems (79.93%)
- a needs assessment should be performed at the beginning of each semester (66.20%)
- the content of the session should be better tailored to students' level of knowledge and understanding (68.93%) (*Fig. 4*).

Evaluate the level in which the following teaching methods would promote a student-centred learning process

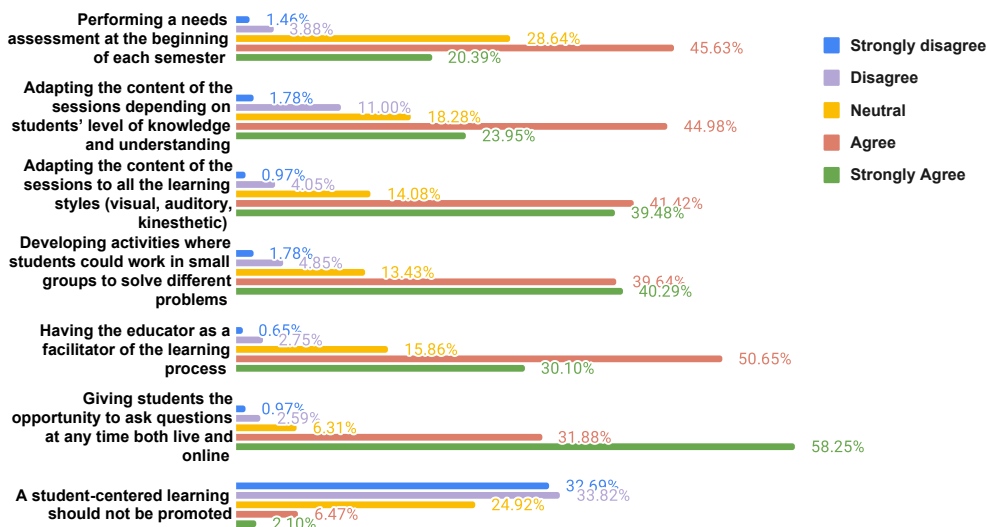


Fig. 4

Active learning

The following definition was used in this survey:

Active learning is any learning activity in which the student participates or interacts with the learning process, as opposed to passively taking in the information.⁷

Active learning is usually collaborative and refers to the application of knowledge in new situations, providing the possibility for students and educators to move beyond comfort zones and co-create knowledge. It supposes the design of a student-centred curriculum that draws on students' intelligences, prior knowledge and experience to determine how the understanding of course content should be demonstrated.⁸

Most of the students that answered to the survey (92.39%) said that the use of active learning concept in pharmaceutical studies would be beneficial for students, whereas few of them mentioned that they would need more information regarding this concept to be able to decide (*Fig.5*).

Do you think that using the active learning concept in pharmaceutical studies would be beneficial for students?

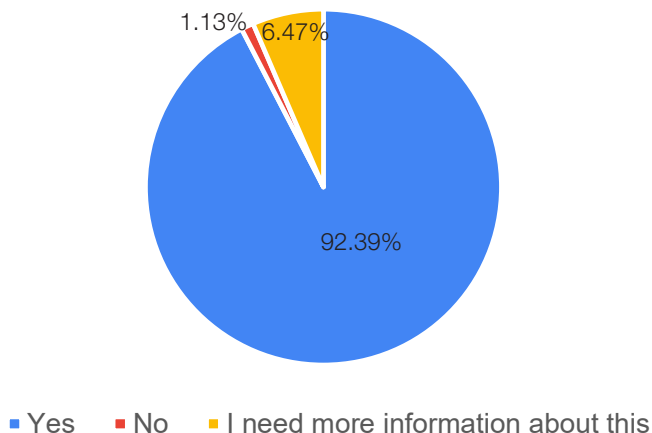


Fig. 5

More than half of the survey participants answered that an environment that promotes active learning should **stimulate the critical thinking skills of students (68.12%)** and should encourage **problem-based/research-based learning (64.56%)** and **open discussions between students (60.36%)** (Fig. 6).

How would you describe an environment that promotes active learning?

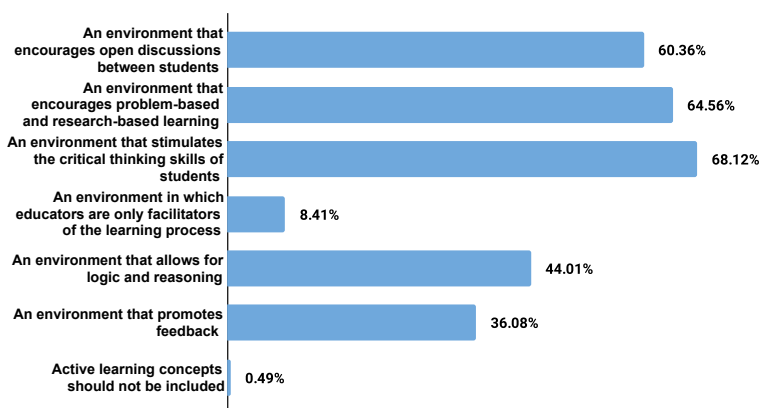


Fig. 6

Problem-based learning

The following definition was used in this survey:

Problem-based learning (PBL) is an approach in which students learn about a topic by solving open-ended questions.⁹

PBL starts with an authentic problem or challenge, encouraging students to determine what they know and do not know, formulate hypotheses, clarify understanding and use critical thinking to set goals and create action plans to solve the problem. The initial challenge represents a context for students to develop problem-solving and lifelong learning skills, as long as collaboration and how to identify knowledge gaps to guide their own study.¹⁰

86.08% of the survey respondents believed that a problem-based learning approach should be implemented in the pharmaceutical studies, whereas almost 10% stated that they would need more information about the concept before deciding (*Fig. 7*).

Do you think that a problem-based approach to learning should be implemented in pharmaceutical studies?

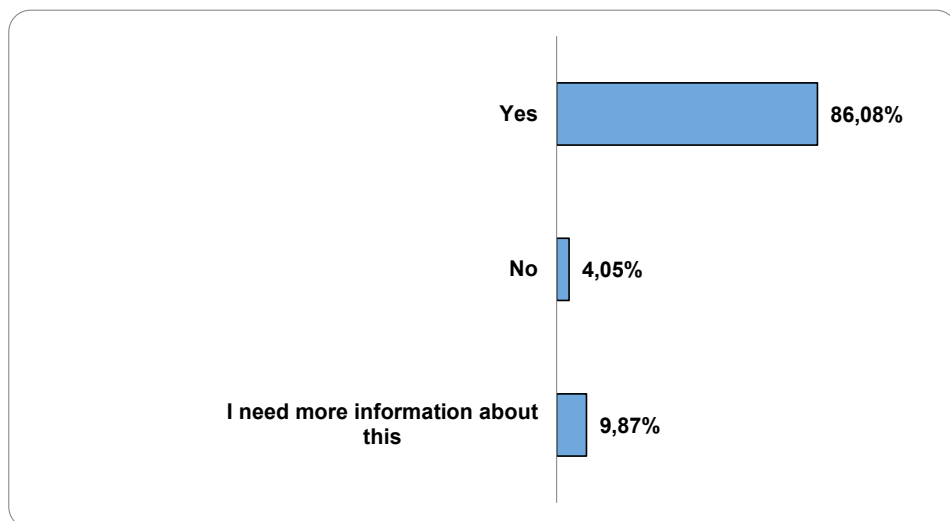


Fig. 7

⁹ <https://teaching.cornell.edu/teaching-resources/engaging-students/problem-based-learning>

¹⁰ Dunlap, J. C., & Grabinger, S. (2003). Preparing students for lifelong learning: A review of instructional features and teaching methodologies. *Performance Improvement Quarterly*, 16(2), 6-25

Most of the students responded positively that the best teaching method for a problem-based learning process is the use of real-life pharmacy simulations (94.99% from which 69.43% strongly agreed). Other useful teaching methods include:

- Case studies (88.02%)
- Group discussions (78.97%)
- Group projects (69.42%)
- Debates (66.66%)
- E-learning based scenarios (62.9%) (*Fig.8*)

Listening to a presentation and taking down notes from the educator's teaching materials were considered as not creating a problem-based learning environment (*Fig.8*).

Evaluate the level in which the following teaching methods would promote a problem-based learning process.

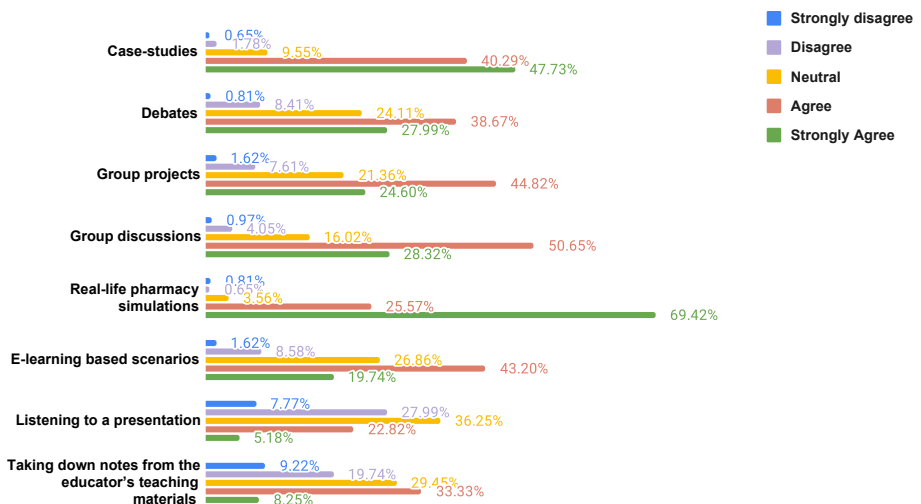


Fig. 8

Survey analysis

C. Knowledge transfer structuring to ensure an effective learning process

Key highlights:

- The average optimal length of a lecture is 1.5 hours, with the possibility of extension if breaks are included; the ideal number of students participating in a lecture is 30.¹¹
- The most appropriate way of delivering lectures is to have the educator dictating the content of the lecture and students taking notes or to have the educator presenting materials and students listening to them, while being encouraged to ask questions at any time.
- Lectures should include dynamic and visually appealing presentations; the use of videos, other digital tools and group discussions would increase the interactivity during lectures.
- A seminar should last for 1.5 hours, with 25 students present.¹²
- Seminars should be mostly practical (case-studies, group discussions, debates etc.) or a mixture of theory and practical work; the use of case studies and quizzes could increase the interactivity of the seminars.
- A laboratory session should last for an average of 2.5 hours, with 20 students present.¹³
- The preferred way of having laboratory sessions is to include both theory and practical work, with students working individually or in pairs, depending on the subject or experiment.
- The biggest advantage of online education is represented by its flexibility, which offers students the capacity to learn at their own pace, while its main disadvantages are the reduced face-to-face interaction and communication and inability to do practical work (e.g. lab work, other practical tasks).
- The most beneficial way to have lectures would be a mix of live and online, with a preference for the live environment.
- The characteristics that students appreciate the most for their educators included the ability to adapt to their students' level of knowledge and provide clear explanations, approachability and the ability to design interactive lectures or seminars and to prepare appealing and easy to follow presentations.

¹¹ <https://www.epsa-online.org/methodology-booklet/#1596709229047-ac96fbd6-8eb5>

¹² <https://www.epsa-online.org/methodology-booklet/#1596709229047-ac96fbd6-8eb5>

¹³ <https://www.epsa-online.org/methodology-booklet/#1596709229047-ac96fbd6-8eb5>

The following definitions have been used in the survey:

- **A lecture** is a class that consists of an oral presentation intended to present information or teach people about a particular subject.
- **A seminar** is a class that brings smaller groups of students together, focusing on a specialised subject area in which everyone present is requested to participate.
- **A laboratory** session is a class where students get hands-on experience of the subject being taught during the lecture.

Lectures

In a report previously released by EPSA in 2018¹⁴, the opinion of the pharmaceutical students regarding the optimal length of lectures was evaluated. Students believed that **a lecture should last between 45 minutes and 2 hours (with an average of 1.75 hours)**, with the possibility of having longer lectures if breaks are included. In the same report, it was mentioned that students believed that **the optimal number of students during lectures should be 30**, as having a smaller group of students would ensure a better transfer of knowledge. Some expressed that lectures can have an increased number of students per class, as long as interactivity is maintained.

The current survey aimed to complete the information previously obtained, focusing on how lectures should be designed for a better knowledge transfer.

Almost half of the respondents believed that the most appropriate way of delivering lectures is to have the educator dictating the content of the lecture and students taking notes (46.54%). Another option would be to have the educator presenting materials and students listening to them, while being encouraged to ask questions at any time (42.91%). (Fig.9)

A few respondents pointed out the importance of having the materials for individual study provided before the lectures (via books or online platforms) so students could come prepared and discuss the most difficult parts during the lectures, leaving with the important points. Another suggestion received from one respondent was to have after each topic presented by the educator a small task that students have to solve and then discuss the solution before moving on to the next topic. Another proposal was to start each lecture with a small quiz meant to test the knowledge of students from the previous lectures, which would stimulate students to study weekly and not wait for the exam period to start.

¹⁴ <https://www.epsa-online.org/methodology-booklet/#1596709229047-ac96fbd6-8eb5>

What is, in your opinion, the most appropriate way of delivering lectures?

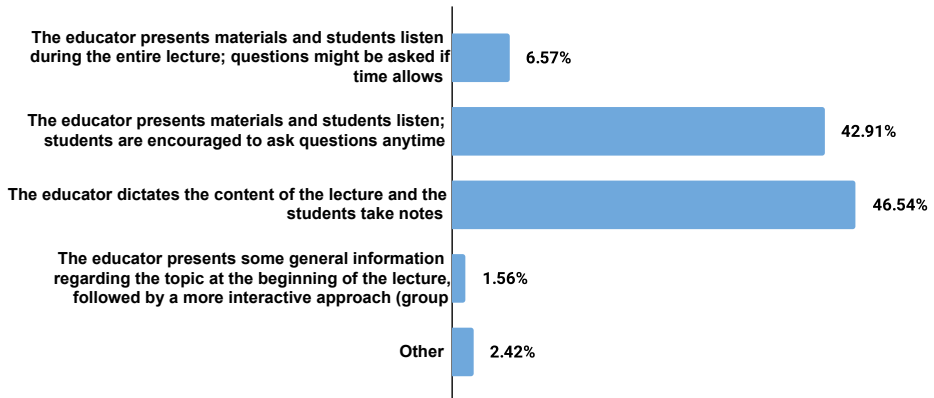


Fig. 9

The most appealing way in which the lectures could become more interactive would be to have dynamic and visually appealing presentations (65.92%), according to the survey respondents. Additionally, the use of video and other digital tools (54.50%) and group discussions (52.42%) would increase the interactivity during lectures (Fig. 10).

Other suggestions from the students included:

- Quizzes on the topic during the lecture, both in live and online environments (e.g. Kahoot)
- Case-studies covering real-life scenarios
- Group projects
- Having more time allocated for Q&A and using different apps/platforms which allows students to ask questions anonymously anytime, without interrupting the lecture (e.g. SpeakUp, Slido)
- Open debates

How do you think lectures could become more interactive?

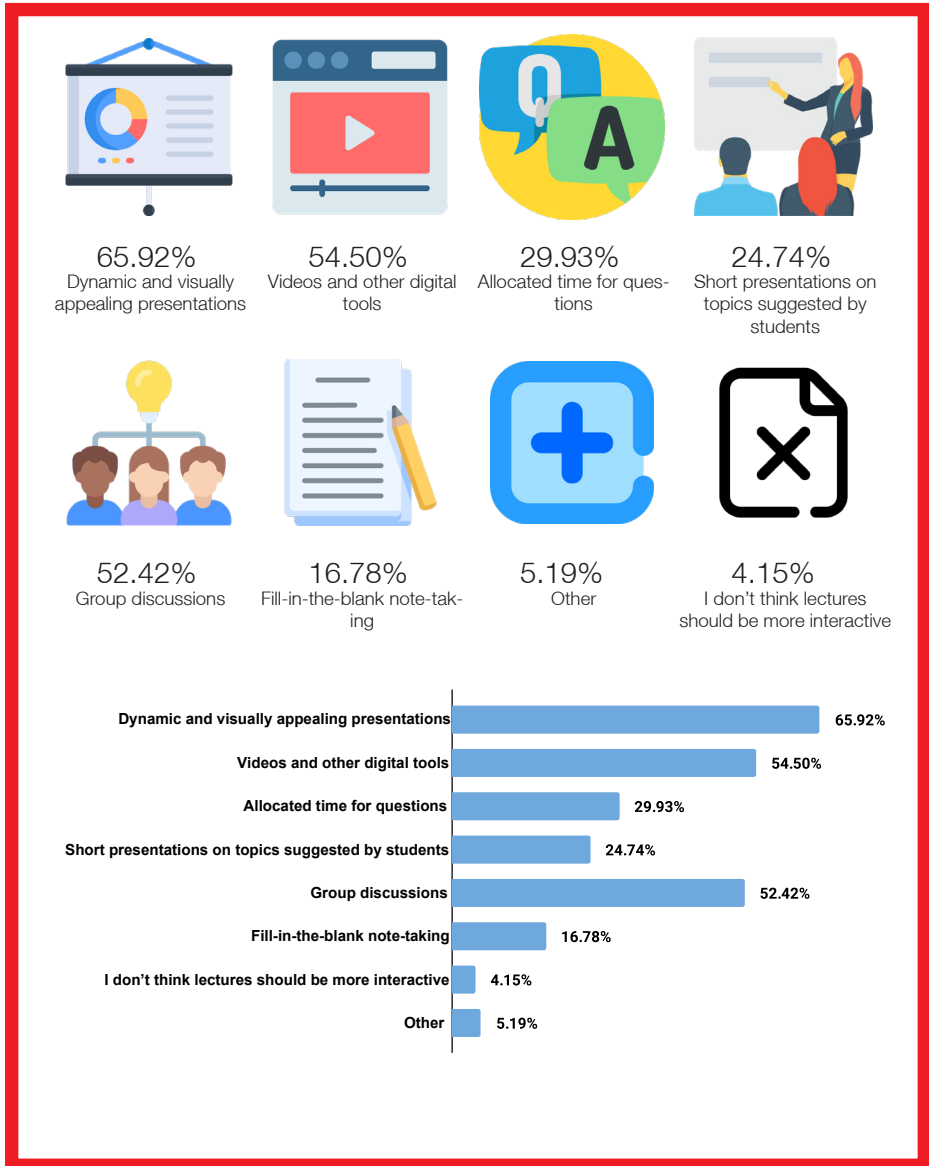


Fig. 10

Seminars

In the 1st Methodology Booklet released in 2018¹⁵, students believed that a **seminar should last between 45 minutes and 2 hours (with an average of 1.5 hours), with 25 students present.**

Almost half of the respondents of the current survey (42.04%) believed that seminars should be mostly practical (case-studies, group discussions, debates etc.) and over a third of respondents (39.62%) thought that seminars should be a mixture of theory and practical work. One respondent explained that in their university they started to use Kahoot lessons, which were beneficial and helped students focus on the acquired knowledge (*Fig. 11*)

How should seminars be designed?

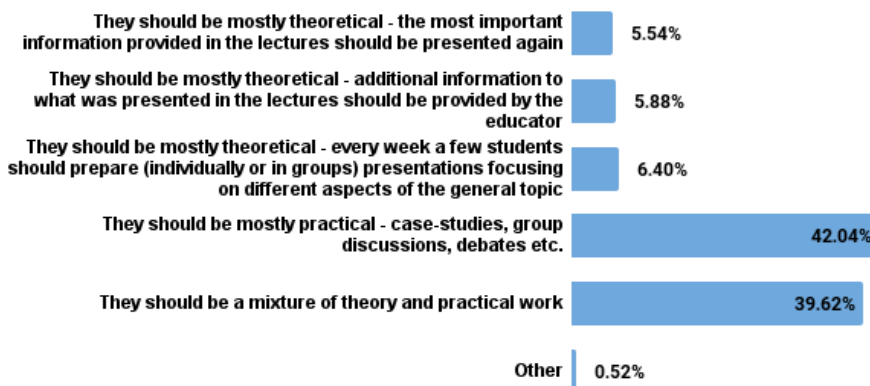


Fig. 11

The best ways of having more interactive seminars are by using case studies (70.07%) and quizzes (54.50%), according to the survey respondents (*Fig. 12*).

How do you think seminars could become more interactive?

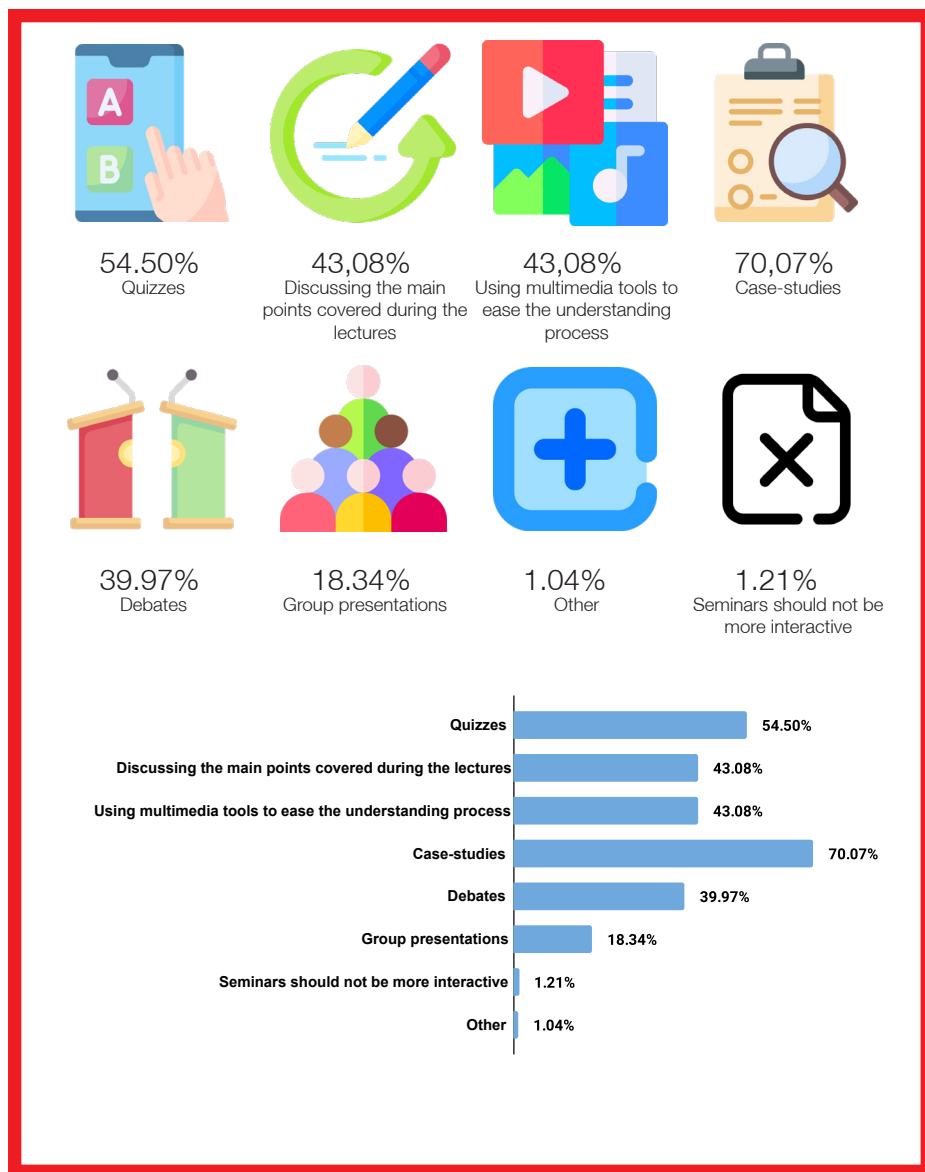


Fig. 12

Laboratory sessions

In the 1st Methodology Booklet released in 2018¹⁶ students believed that a **laboratory session should last between 2 and 3 hours (with an average of 2.5 hours)**, with 20 students present.

The current survey showcased that the preferred way of having laboratory sessions was to include both theory and practical work (65.05%) (Fig.13). Moreover, students should work individually and in pairs (37.20%), depending on the subject or experiment (Fig. 14).

How should laboratory sessions be designed?

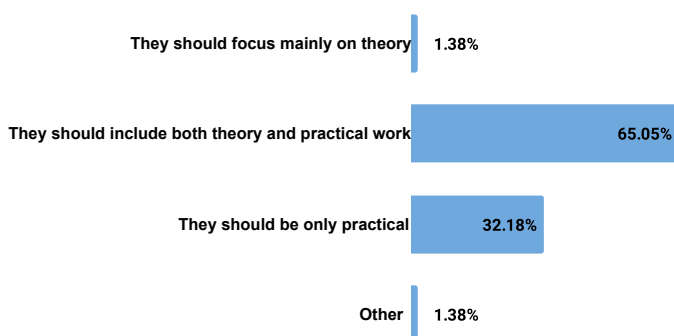


Fig. 13

How should students work during the laboratory sessions?

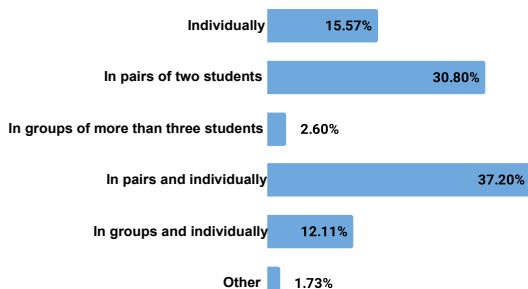


Fig. 14

¹⁶ <https://www.epsa-online.org/methodology-booklet/#1596709229047-ac96fbd6-8eb5>

Live versus online

The biggest advantage of online education is represented by its flexibility, which offers students the capacity to learn at their own pace (84.26%) (Fig. 15).

What are the main advantages of online education?

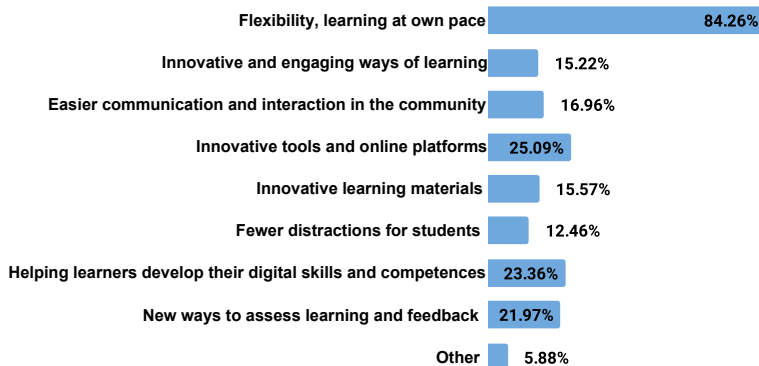


Fig. 15

Additional advantages mentioned by the respondents are the following:

- Less travel time for students and educators, which leaves more time for studying and hobbies;
- The possibility to listen multiple times to the recording for more clarity;
- Studying from the comfort of the home;
- Healthier lifestyles, as the students can take more pauses between activities and can schedule more efficiently their time;
- Avoiding issues encountered during live lectures (the students sitting in the back of the room cannot hear the lesson properly, the presentation is too far or too small and students cannot read it, the lectures are happening at late hours, only when the room is available etc.)

The main disadvantages of online education were considered to be:

- Less face-to-face interaction and communication (54.33%)
- Inability to do practical work (e.g. lab work, other practical tasks) (47.92%)
- Lack of motivation (e.g. to focus on the lectures, to study) (47.75%)
- The need for a stable internet connection and suitable equipment e.g. laptops, (41.87%) (Fig. 16)

What are the main disadvantages of online education?

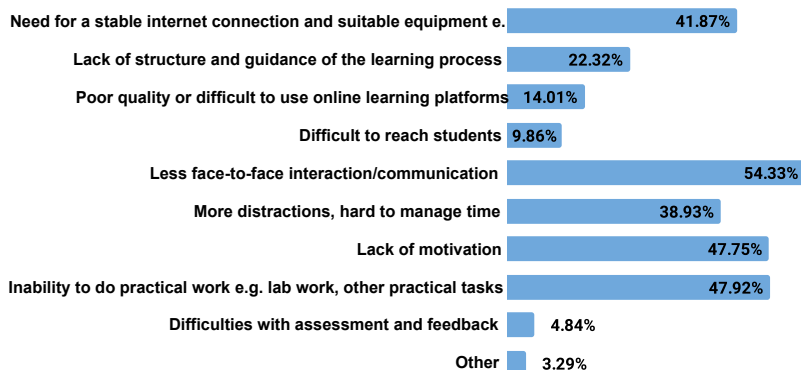


Fig. 16

Several survey respondents also mentioned the lack of e-learning skills among educators and the fact that it is easier to cheat during exams in an online environment.

Considering the advantages and disadvantages previously mentioned, **almost half of the respondents believed that the most beneficial way to have lectures would be a mix of live and online (46.89%), with a preference for the live environment (40.31%)** (Fig. 17).

What is the most beneficial way for students to have lectures?

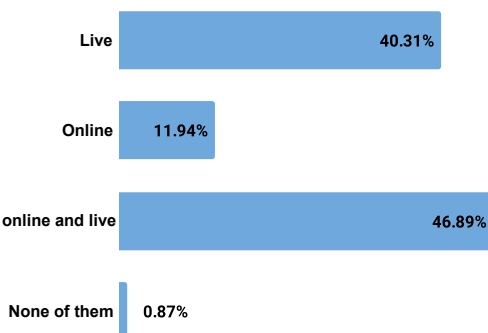


Fig. 17

The main advantage of mixing face-to-face and online learning is the possibility to ensure more flexibility so students could learn at their own pace (55.88%) while still having the possibility to do practical work (73.36%) (Fig. 18).

Several students added that mixing live and online education would increase the chances for students to receive the education in the most suitable way for their type of learning and would reduce the issues encountered with the lecture rooms (uncomfortable chairs, poor ventilation etc.)

What are the benefits of mixing face-to-face and online learning?

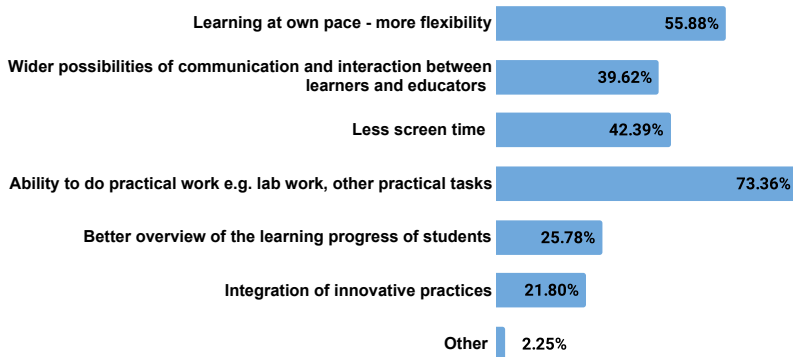


Fig. 18

However, mixing face-to-face and online education could bring some inconveniences such as the exclusion of the learners without access to suitable digital technologies (47.92%) and increasing educators' workload to adapt to the new teaching methods (40.83%) (Fig. 19).

Additionally, multiple survey respondents mentioned the higher time needed to travel between home and university, especially for students living outside the city where they are studying.

What are the disadvantages of mixing face-to-face and online learning?

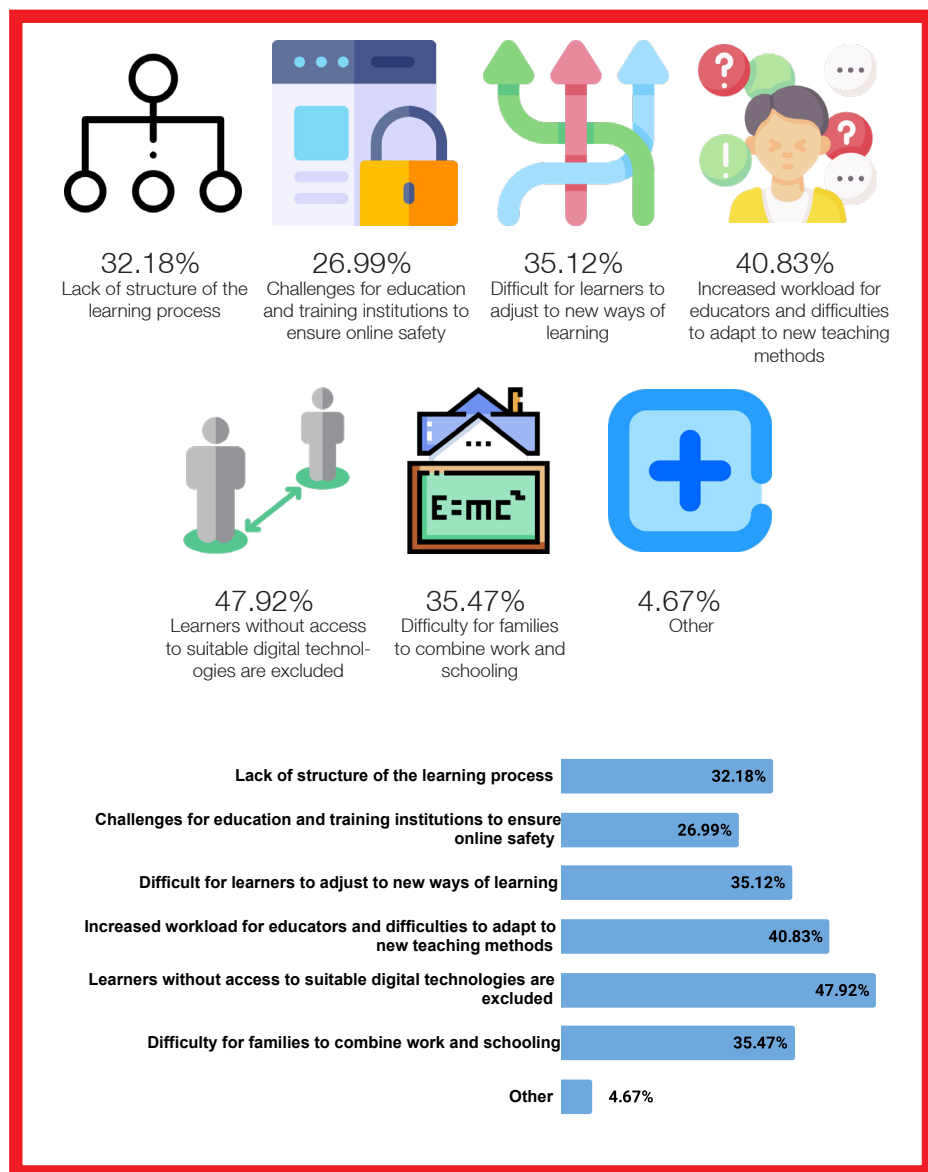


Fig. 19

What does a good educator look like?

When asked about the characteristics students appreciated the most in an educators, survey respondents mentioned **the ability to adapt to their students' level of knowledge and provide clear explanations (66.78%)**, **approachability (45.50%)** and **the ability to design interactive lectures or seminars (42.04%)** and to prepare appealing and easy to follow presentations (41.70%) (*Fig.20*).

What are the main advantages of online education?

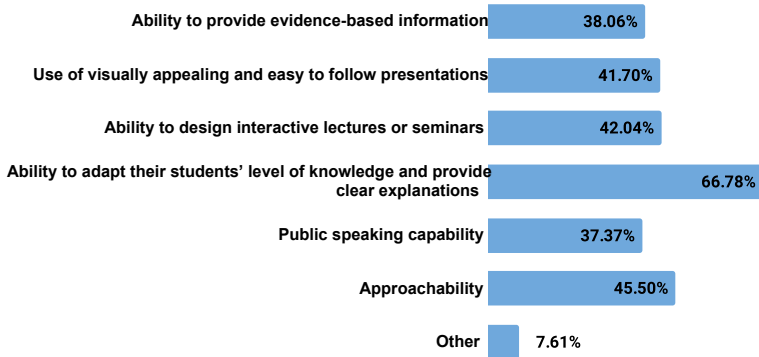


Fig. 20

Other characteristics important for educators mentioned by the survey respondents were:

- Technology knowledge
- Politeness, showing respect for students
- Empathy, kindness
- Showing motivation to teach and spread interest in the topic
- Openness to new ideas
- Ability to give and receive constructive feedback
- Capacity to show how the theory can be used in practice
- Willingness to encourage students to use their logical and critical thinking (instead of simply demanding to learn the material by heart) and to ask additional questions
- Strictness, but in a friendly and motivating way
- Capacity to encourage students to investigate more about a certain subject, even if it would not be evaluated

Survey analysis

D. Tools that educators can use to facilitate the learning process

Key highlights:

- Over 75% of the survey respondents believed that educators should encourage students to use their electronic/smart devices (e.g. smartphones, tablets, computers) for research and learning.
- Respondents believed that the most helpful tools in gaining and retaining the information are links to open source videos, access to recordings of the lectures, quizzes and lecture summaries.
- Almost 60% of the survey respondents considered it to be important that studying materials should be provided to students a few days before every session.

75% of the survey respondents believed that educators should encourage students to use their electronic/smart devices (e.g. smartphones, tablets, computers) for research and learning (Fig.21). This approach would give students access to a wide range of platforms and learning resources that would increase their interest and knowledge of the topic.

Students should be encouraged by educators to use their electronic/smart devices (e.g. smartphones, tablets, computers) for research and learning.

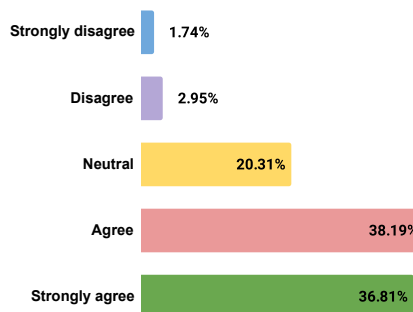


Fig. 21

Respondents believed that the most helpful tools in gaining and retaining the information are:

- **Links to open source videos** that use a visual approach to explain more clearly the concepts (53.99%)
- **Recording of the lecture** (53.13%), which allows students to clarify the information and write better notes by being able to listen to the explanations multiple times
- **Quizzes** (48.96%)
- **Lecture summary** (47.22%) (Fig.22)

The previously mentioned tools cover all the types of learners (visual, auditive, kinesthetic), allowing students to receive proper explanations of complicated concepts, constantly test their knowledge and identify their gaps and to be better prepared for exams and their future jobs.

What kind of studying materials would be more helpful in gaining and retaining the information?

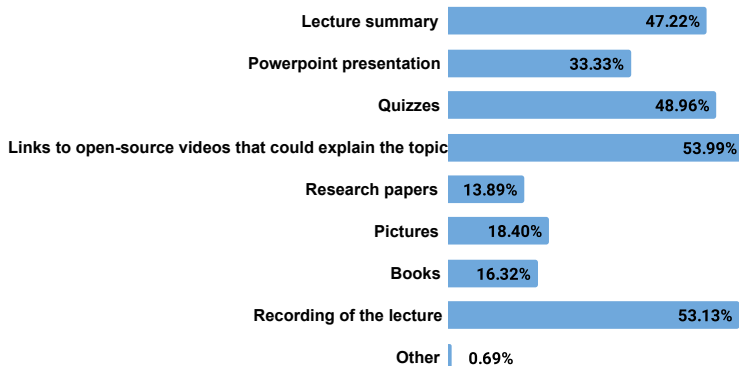


Fig. 22

Almost 60% of the survey respondents considered it to be important that studying materials should be provided to students a few days before every session (*session = lecture/seminar/laboratory session) (Fig.23). This approach would allow students to read the materials before and come prepared to ask questions about the concepts harder to understand, thus increasing the interaction between students and the educators.

Studying materials should be provided to students (*session = lecture/seminar/laboratory session)

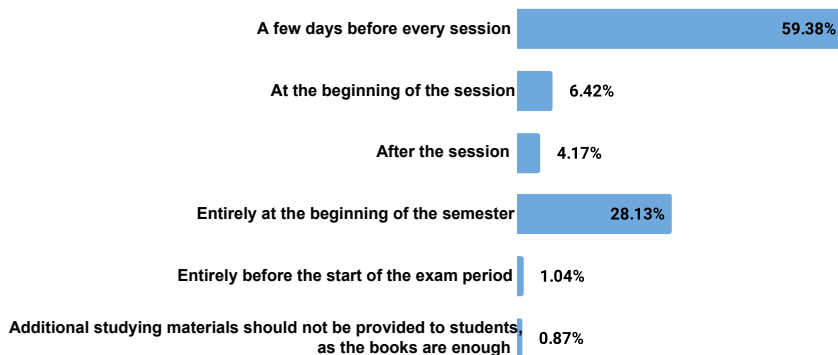


Fig. 23

Survey analysis

E. Assessing students' satisfaction with the teaching process

Key highlights:

- Students' satisfaction with the teaching process at their universities was rated an average of 3.09/5, with only 38.91% being satisfied overall.
- The average satisfaction of the respondents with their educators was 3.23/5, with 43.11% of the respondents being satisfied overall.
- Even though 70.83% of the respondents stated that their universities are developing surveys to evaluate the educators and/or the teaching process, only 37.15% said that their feedback is actually implemented
- More than half of the respondents believed that feedback should be collected from students at the end of each semester.

Survey respondents' satisfaction with the teaching process at their universities was rated an average of 3.09/5, with 38.91% being satisfied and 27.75% being unsatisfied overall (*Fig.24*). The outcome shows that even though there are more students satisfied than those unsatisfied, there is a lot of room for improvement, considering that for none of the sides (satisfied/unsatisfied) the 50% threshold was reached.

How satisfied are you/ were you with the teaching process at your university?

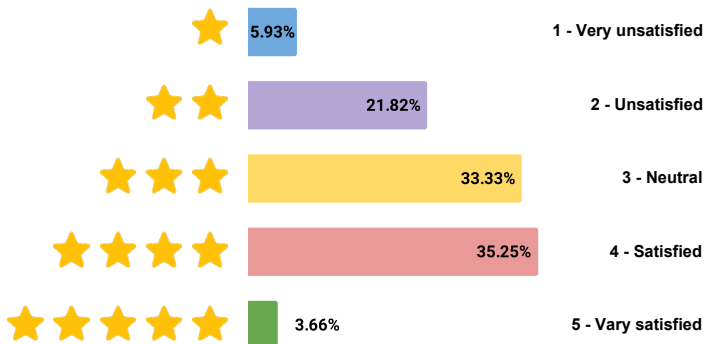


Fig. 24

The average satisfaction of the respondents with their educators (attitude towards teaching, used teaching tools and techniques, attitude towards students) was a bit higher compared to the teaching process (3.23/5). 43.11% of the respondents were satisfied overall, whilst only 20.94% were unsatisfied overall (Fig.25). However, the 50% threshold was not met in this situation either.

How satisfied are you/were you with your educators? E.g. their attitude towards teaching, used teaching tools and techniques, their attitude towards students

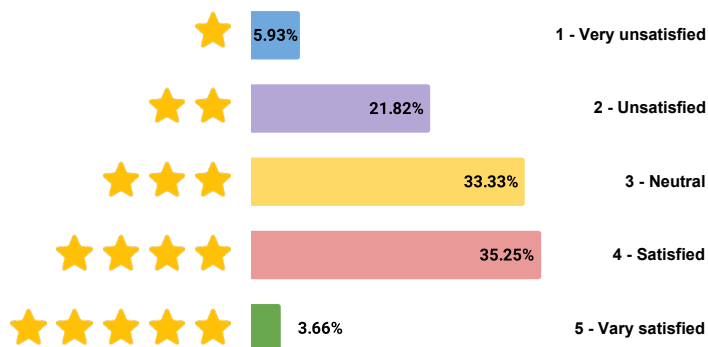


Fig. 25

Even though 70.83% of the respondents stated that their universities are developing surveys to evaluate the educators and/or the teaching process (Fig.26), only 37.15% said that their feedback is actually implemented (Fig.27). An important number (31.25%) noted that their feedback is not reflected in the teaching process or in educators' attitudes.

Is your university developing surveys to evaluate educators and/or the teaching processes?



70.83%



11.28%



17.88%

Is your university implementing the feedback received from students about educators/teaching processes?



37.15%



31.25%



31.60%

More than half of the respondents (52.60%) believed that the feedback should be collected from students at the end of each semester (Fig.28).

When do you think feedback should be collected from students?

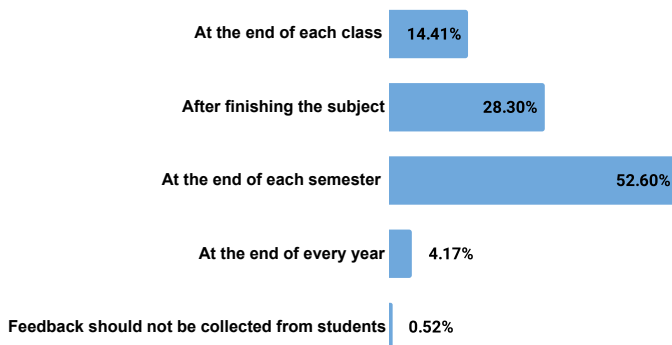


Fig. 28

Conclusions and recommendations

- **98.06% of the survey respondents believed that student representatives should be involved in the decision-making process of the pharmaceutical curricula**, either to vote alongside educators or to offer opinions, suggestions and concerns.
- More than half of the survey respondents believed that it would be beneficial for pharmaceutical students to have access to a **student-centred learning process** and 92.39% of them stated that the use of the **active learning** concept in pharmaceutical studies would be valuable. An environment that promotes active learning should stimulate the **critical thinking skills** of students and should encourage **problem-based/ research-based learning** and **open discussions** between students.
- 86.08% of the survey respondents believed that a **problem based learning** approach should be implemented in pharmaceutical studies, by using **real-life pharmacy simulations**.
- The most appropriate ways of delivering lectures is to have the educator dictating the content of the lecture and students taking notes, or to have the educator presenting materials and students listening to them, while being encouraged to ask questions at any time. Lectures should include **dynamic and visually appealing presentations**; the use of **videos, other digital tools** and **group discussions** would increase the interactivity during lectures.
- **Almost half of the respondents believed that the most beneficial way to have lectures would be a mix of live and online (46.89%), with a preference for the live environment (40.31%)**
- Seminars should be mostly practical (case-studies, group discussions, debates etc.) or a mixture of theory and practical work; **the use of case studies and quizzes could increase the interactivity of the seminars**.
- Laboratory sessions should include theory and practical work, with students working individually or in pairs, depending on the subject or experiment.
- The characteristics that students appreciate the most in their educators include the ability to **adapt to their students' level of knowledge** and **provide clear explanations, approachability** and the **ability to design interactive lectures or seminars** and to prepare **appealing and easy to follow presentations**.
- Respondents believed that the most helpful tools in gaining and retaining the information are the **links to open source videos**, access to **recordings of the lectures, quizzes** and **lecture summary**.

- Almost 60% of the survey respondents considered that **studying materials should be provided to students a few days before every session.**
- Even though 70.83% of the respondents stated that their universities are developing surveys to evaluate the educators and/or the teaching process, only 37.15% said that their feedback is actually implemented. More than half of the respondents believed that feedback should be collected from students at the end of each semester.

Based on the previously mentioned outcomes, EPSA calls for:

- The Integration of Divergent Teaching Methods into the pharmaceutical studies by:
 - Including student representatives in the decision making process of the pharmaceutical curricula;
 - Implementing a student-centered, problem-based approach to learning
 - Designing lectures, seminars and laboratory sessions that promote active learning
- Improvement of the knowledge transfer between educators and students and use of a wide range of tools to ensure an effective learning process (including digital tools).
- Consistent assessment of students' satisfaction with the teaching process and implementation of the feedback received.

CLOSING REMARKS

The Methodology Booklet is an EPSA project that has the objective of collecting pharmaceutical students' and recent graduates' opinions on teaching methodologies around Europe and sharing them with educators and policymakers. The outcomes will allow us to showcase what students and recent graduates think of the current situation of the methodologies applied to teaching and what they think should be implemented in the future for better outcomes. The vision behind the 1st Methodology Booklet is to propose to universities, Ministries for Education and National Governments, possible solutions on the improvement of the Teaching Methodologies used in pharmaceutical education across Europe.

Higher education should facilitate the gaining of knowledge we aspire to have. We believe that a continuous dialogue is important and endeavor to motivate students and recent graduates to seek knowledge and opportunities through many projects and activities within EPSA's scope.

Annexe 1: *Soft-Skills* was released in July 2020 as a necessity to further investigate the following outcome from the Methodology Booklet: 93% of students expressed their desire for more inclusion of soft skills in the European pharmaceutical curricula. Its aim was to evaluate how Soft-Skills should be taught from the pharmaceutical students' perspective and to envision how a Soft-Skills course should be conceptualised.

Annexe 2: *Teaching Methodologies* was developed with the aim of assessing in more detail the methods and tools that students would like to see used by their educators during their studies to ensure better knowledge transfer and a more effective teaching process.

Who are we partnered with?

On this journey, we were encouraged and supported by The European Association of Faculties of Pharmacy (EAFP).

EPSA

European Pharmaceutical Students' Association

44
Member
Associations

Over
100,000
European
Pharmaceutical
Students



36
European
Countries

Bringing
Pharmacy,
Knowledge
and Students
together

EPSA (European Pharmaceutical Students' Association) is a European independent, non-religious, non-profit, Non-Governmental Student Organisation committed to the interests of pharmaceutical students, and the ultimate benefit of society. EPSA is a student organisation that represents over 100 000 pharmaceutical students distributed over 42 Member Associations from 37 European countries as perceived by the Council of Europe.

EPSA stimulates scientific, educational and mobility projects, striving to gather students from its member associations in four annual events: Annual Congress, Summer University, Autumn Assembly and Annual Reception. Students in EPSA are motivated to actively promote the pharmaceutical profession and social awareness of the pharmacist as well as take vigorous participation in Professional Development concerns. EPSA strives to enhance the European consciousness among members as well as the intervention of students on public health and social services actions. EPSA also encourages pharmaceutical students to have an active voice in important advocacy initiatives that shape the future of the pharmacy profession and healthcare through the EPSA Advocacy Platform.

THANK YOU TO OUR TEAM

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