EUROPEAN PHARMACEUTICAL STUDENTS' ASSOCIATION

METHODOLOGY BOOKLET

• October 2018 •

1st Edition

Co-funded by the Erasmus+ Programme of the European Union

European Commission

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Welcoming Words By EPSA

Dear readers,

It is my greatest pleasure to welcome you to the 1st EPSA Methodology Booklet that revolves around the teaching methodologies in many Faculties of Pharmacy around Europe.

The booklet was conducted to evaluate and present the educational needs and inclination of pharmaceutical students, so they could come up with easy and simple suggestions on how to improve the knowledge delivery at the Faculties of Pharmacy throughout Europe. It offers perspectives and opinions of pharmaceutical students and recent graduates from different European countries, showing where the pharmaceutical curricula is right now and how we aspire to accomplish a unified way of teaching in the future.

Inside this prospective document, you will receive constructive feedback and favourable suggestions with the purpose to help the universities and educators continue to improve the learning experience of students. The educational system and prestigious institutions should seize the opportunities of the modern age by overcoming many challenges and preparing present and next generations for their forthcoming professional careers as best as it is possible. Furthermore, we are aiming to improve the activities related to personal development among students of all academic years in order to maximise their potential.

I invite you to carefully read this booklet, learn about current teaching methodologies in many faculties of pharmacy across Europe and acquaint yourself with the later mentioned proposals for advancements. Besides, you are more than welcome to interact with us via social media.

Hopefully, this Methodology Booklet will motivate you to embrace the need behind this project, and further ensure that you strive for lifelong learning and consistent development. Moreover, we hope to see you participating in many of our projects and activities.

Yours in EPSA,
Marko Ocokoljić
Educational Affairs Coordinator 2018/2019

Welcoming Words By EPSA

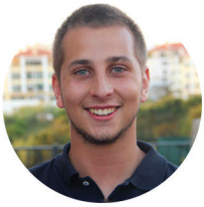
Dear EPSA Members and Stakeholders,

Last year we restarted to work on one of the most important educational projects that EPSA has developed over the past years: the Methodology Booklet. Following the 1st edition, we decided after 4 years to revamp it and analyse once more the teaching methodologies in Europe. With a new approach, we are capable of comparing results over the years.

Furthermore, our association has also evolved in other areas of education such as soft skills, scientific activities and also public health campaigns that all together, helps to reach our members in different ways with the aim of striving for personal development and growth.

Certainly, we would like to thank EPSA's Educational Department, EPSA's Public Relations Department and Subcommittee, EPSA President Eva Shannon Schiffrer, EPSA Vice President of Internal Affairs, Anja Šribar and EPSA Secretary General, Mariana Medeiros for having a great contribution by proofreading Methodology Booklet. Finally, we would also like to thank the EPSA Design Coordinator, Inês Grazina for designing the booklet.

Yours in EPSA,
Diogo Capítulo
Vice President of Education 2018/2019



EPSA - European Pharmaceutical Students' Association

Over **100.000** European pharmaceutical students

37 European countries

45 Member Associations

Bringing Pharmacy, Knowledge and Students together

www.epsa-online.org

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 45 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 also strives to enhance the European consciousness among members as well as the intervention of students on public health and social services actions.

Yours in EPSA,
Eva Shannon Schiffrer
President 2018/2019

Abstract

Dear readers,

The Methodology Booklet is an EPSA project aiming to collect the European pharmaceutical students' and recent graduates' opinion on teaching methodologies utilised by faculties of pharmacy in Europe.

The opinion was collected through a survey of 80 questions, divided into several topics. The survey was opened for three months, between March 2018 and May 2018. A similar survey had been conducted in 2014 and responses recorded then consulted as well. 1478 respondents from 31 countries answered the current survey.

The survey covered the areas of the curricula timetable, number of students per class, comparison of different teaching methodologies, the distribution of breaks, types of knowledge transfer, the teaching tools that are utilised, the evaluation strategies, the collection of outcomes and feedback as well as student-teacher communication, soft skills, mobility, the topic of mandatory internship and the possible unification of the European pharmacy curricula. In addition to this, the respondents provided their opinion on the benefit of different methodologies and future prospects were collected and recorded.

The aim of this booklet is to present the opinion of the European pharmaceutical students and recent graduates on the teaching methodologies currently utilised by the European faculties of pharmacy. With this, we hope to assist the educators and policy makers to continue to evolve and improve the European pharmaceutical education. In five years time, a survey, updated based on the feedback received to this booklet, will be released again to assess the development of the European pharmacy education and to strive to continuously improve it, taking into account the ever-evolving health care spectrum.

Content

General Information

Dear readers, here you will find the reasoning behind this EPSA project.

The Methodology Booklet is an EPSA project that has the objective of collecting pharmaceutical students' and recent graduates' opinion on teaching methodologies around Europe and sharing these with educators. Since education is developed continuously, this will allow us to showcase what students and recent graduates think of the current situation of the methodologies applied to teaching and what they want for the future regarding education. At the same time, we hope this booklet presents additional teaching techniques, used in other European countries, to the reader as a way of knowledge exchange between different educational systems in Europe.

We are aware that students, recent graduates and professionals should strive to continuously improve themselves and strive for knowledge. Higher education should facilitate the gaining of knowledge we aspire to. We believe that a continuous dialogue is important and endeavor to motivate students and recent graduates to seek knowledge and opportunities through our many projects and activities.

Why did we do this? Because we wish for better knowledge development, and because we are eager to become more competent health care professionals. Aiming for equality of our curricula in Europe would result in balanced education and identical competences among all European pharmacists. We believe it is important to strive to achieve this through a collaborative approach to the continuous development of education with the educators. We are aware of the fact that the educators' resources are limited so not all of our suggestions can be implemented at any given time. We hope that together, we can attempt to implement them in the future, taking into account the opinion and experience of students, recent graduates and educators as that is the optimal way to continue to improve the education. Thus, this booklet is designated for the policy makers and regulators within pharmaceutical education as well.

Why should you read this? To acquaint yourself with which methodologies work and do not work for pharmaceutical students and consequently be able to elevate our curricula and make sure that our and next generations are in touch with innovations and the world's pharmaceutical trends. Continuous evolvement and improvement of education are crucial to develop successful health care professionals. Improvements and changes are possible and this booklet is just a quick look at the impact the current methodologies are having through the future health care professionals' perspective.

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General Information

Who we are linked with? On this journey we were encouraged and supported by institutions such as The European Association of Faculties of Pharmacy (EAFP). Other institutions, such as The International Pharmaceutical Federation (FIP) already expressed interest in the project.

Benefit of European students and academia from both EU and non-EU countries? The opportunity to uniform the pharmaceutical curricula on the European level would ease the possibility for immediate enrichment of and participation in adjuvant education. Moreover, subsequent equal employment opportunities through whole Europe, where every student would have the same pillars and focus on equally vital matters of the healthcare sphere, could possibly arise.
One of such examples is the mobility project Erasmus+, which offers non-EU students opportunities to take part in its study exchanges for students at undergraduate and postgraduate levels. Therefore, focusing on this and other similar projects offers us the possibility to constantly improve and strive for equal employment and learning opportunities through new challenges, alongside the above-mentioned presence of mobility programmes all over the Europe.

Information on how to get in contact with EPSA with comments, suggestions or anything else is available in subsection Future on page 45.

Engage with EPSA over social media by using the hashtags:

#EduMethod
#EPSAMethodologyBooklet
#EPSALifelongLearning
#EPSAEducation

General Information

EAFP - European Association of Faculties of Pharmacy

The mission of the European Association of Faculties of Pharmacy (EAFP) is to spearhead the advancement of pharmacy education and research to reflect the developments in pharmacy and contribute to addressing the needs of society. A key aspect is to lead changes that contribute to relevance in teaching. Updating of education systems is what maintains relevance. By collaborating and communicating with stakeholders during the updating process, effective and sustainable capacity building in pharmacy manpower is ensured.

Students are the essential focus of academia. The processes of teaching and learning need to be fit for purpose and intended to bring about the expected knowledge and skills development in the students so as to contribute to the required capacity building. With this perspective, EAFP considers collaboration with the European Pharmaceutical Students' Association (EPSA) as pivotal to the advancement of pharmacy education.

In May 2018, EAFP launched a Position Paper highlighting the four pillars for a relevant pharmacy education. The position paper is a result of stakeholder discussions, where EPSA played a significant role. The pillars identified are I) a science-practice balance, II) teaching methods, III) promoting team playing within interdisciplinary groups and IV) preparedness for lifelong learning and innovation. The pillar dedicated to teaching methods specifically supports the adoption of techniques that engage students and allow for novel academic opportunities such as experiential and hands-on learning.

EAFP EUROPEAN ASSOCIATION OF FACULTIES OF PHARMACY

General Information

EAFP - European Association of Faculties of Pharmacy

It was very encouraging to witness the leadership by EPSA amongst the European pharmacy student body to tackle the aspect of teaching method, from a student perspective. During this project, EAFP has supported EPSA by providing a perspective and analysis of the tool used by EPSA to compile student feedback. Expanding the feedback of students from different European countries provides an external widespread view of the teaching methods employed in the different schools of pharmacy.

I congratulate EPSA on embarking on this teaching methodology survey which has two significant outcomes. Firstly, the empowerment of pharmacy students to reflect on teaching methods they experienced and take up their social responsibility to act as a contributor towards updating of education systems. Secondly, the results generated which could serve as a starting point for a reflective process by academics who are leading processes of updating an effective and sustainable pharmacy education process.

Lilian M. Azzopardi
EAFP President
Professor and Head, Department of Pharmacy, Faculty of Medicine and Surgery,
University of Malta

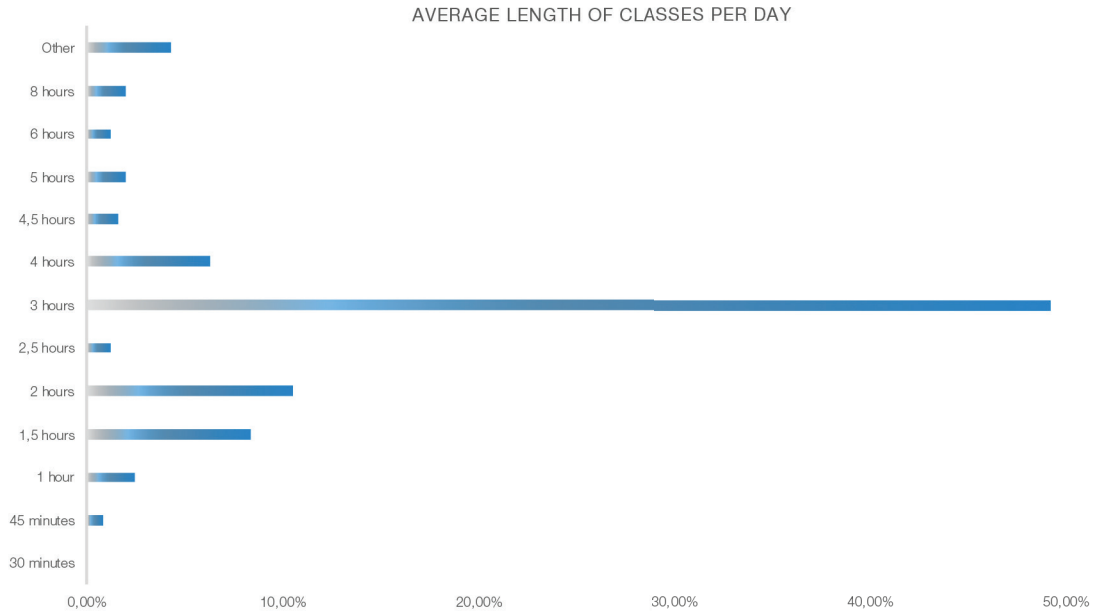
Survey Participation Outcomes

The Methodology Booklet survey consists of 80 questions in total, divided into 15 different parts. The target audience is a wide range of pharmaceutical students at different levels of study and recent graduates within 38 European countries. However, the survey was opened on 11th of March 2018 succeeding to collect 1478 responses in total from 31 different European countries.

Year of Studies	Percentage
1st	8.32%
2nd	17.24%
3rd	26.98%
4th	21.50%
5th	14.20%
6th	0.81%
Intern	3.65%
Postgraduate	5.07%
Graduate	0.81%
Other	1.42%

Pharmaceutical Curricula Timetable

Average length of classes per day

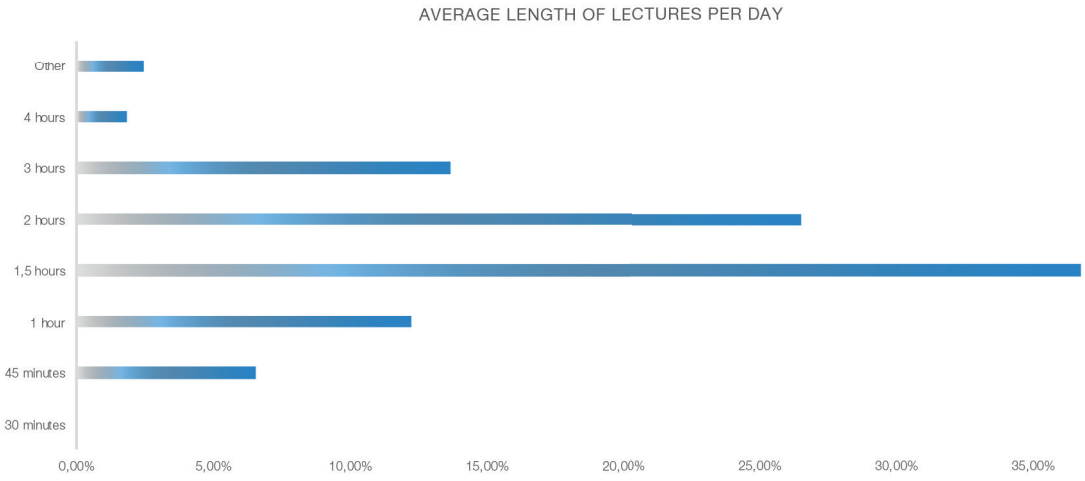


Length	Percentage
30 minutes	0,00%
45 minutes	0,81%
1 hour	2,44%
1,5 hours	8,33%
2 hours	10,53%
2,5 hours	1,22%
3 hours	49,19%
4 hours	6,30%
4,5 hours	1,63%
5 hours	2,03%
6 hours	1,22%
8 hours	2,03%
Other	4,27%

Some respondents report that the average length of time spent in a laboratory can reach up to 9 hours per day. Moreover, a certain extent of respondents declared that they have not had any practical classes so far, with one of the reasons for this being a lack of places in the laboratories.

Pharmaceutical Curricula Timetable

Average length of lectures per day

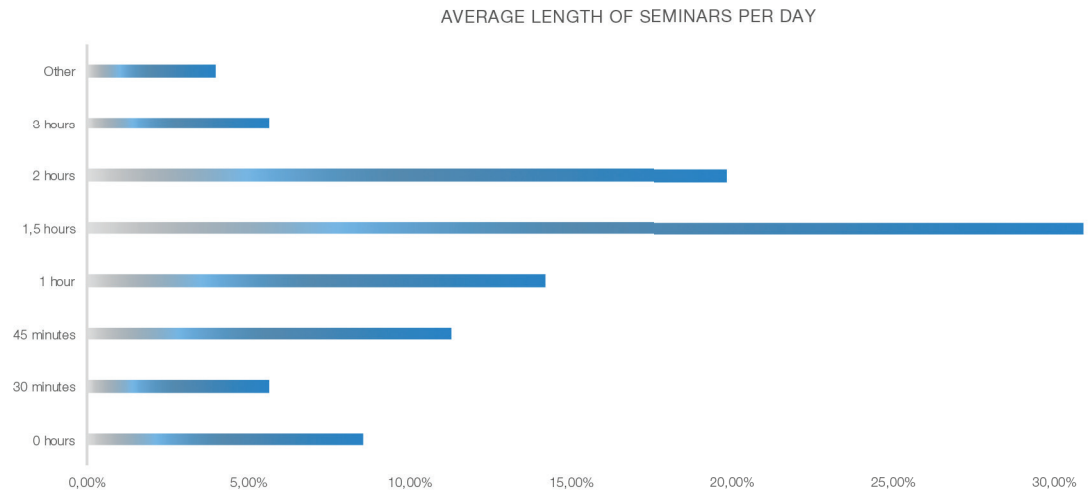


Length	Percentage
30 minutes	0,00%
45 minutes	6,53%
1 hour	12,24%
1,5 hour	36,73%
2 hours	26,53%
3 hours	13,67%
4 hours	1,84%
Other	2,45%

The average length of lectures varies between forty-five minutes and three hours. A few answers specified that the length may come up to five or six hours a day as well.

Pharmaceutical Curricula Timetable

Average length of seminars per day



Length	Percentage
0 hours	8,56%
30 minutes	5,64%
45 minutes	11,27%
1 hour	14,20%
1,5 hour	30,90%
2 hours	19,83%
3 hours	5,64%
Other	3,97%

A minority of respondents declared that the average length of the seminars differed from forty-five minutes to four hours, while one answer pointed out that seminars can last for up to six hours.

Pharmaceutical Curricula Timetable

Average number of hours of classes per week

Laboratory

The average hours of laboratory classes per week are 9 hours, although they vary from 1 hour to 25 hours per week. The most frequent length of laboratory classes is 5-9 hours per week.

Students' satisfaction with the length: 3,56 out of 5.

Lectures

The average hours of lectures per week are 12 hours, although they vary from 3 hours to 25 hours per week. The most frequent length of lectures is 8-15 hours per week.

Students' satisfaction with the length: 3,29 out of 5.

Seminars

The average hours of seminars per week are 4 hours. Although they vary from not being present at faculties to 25 hours per week. The most frequent length of seminars is 2-6 hours per week.

Students' satisfaction with the length: 3,16 out of 5.

Grading system
1- Not satisfactory 2- Fine 3- Good 4- Very good 5- Excellent

Pharmaceutical Curricula Timetable

Optimal length of classes

Following the information gathered on the length of laboratory classes, lectures and seminars, respondents had a chance to provide suggestions and express what the optimal length of these classes is in their opinion so future generations could benefit from this. The suggestions are listed below for each type of classes in duration of hours.

	Laboratory	Lectures	Seminars
Average answer	2,5 hours	1,75 hours	1,5 hours
General	Majority of answers suggested the length of laboratory classes between: **2 hours, 2,5 hours, and 3 hours**. Moreover, **16%** of respondents stated that the optimal length between **3,5 hours and 6 hours** would be considered productive as well.	Majority of answers suggested the length of lectures between: **45 minutes, 1 hour, 1,5 hours and 2 hours**. Furthermore, **11%** of responses expressed that the optimal length between **2,5 hours and 4 hours** would not be an obstacle if short breaks in between would be provided.	Majority of answers suggested the length of seminars between: **45 minutes, 1 hour, 1,5 hours and 2 hours**. Additionally, **9%**, said that the optimal length between **2,5 hours and 4 hours** would be good as well.
Conclusions	Students are perceiving the laboratory time as crucial and inevitable, and therefore consider that pursuing real practice should be a constant focus in the pharmaceutical education.	Students consider theoretical classes as very important, but in reasonable duration that would not exceed 2 hours without a break. Surpassing the optimal length results in decreased concentration due to too much information to process at once. However, longer classes with regular breaks are deemed optimal as well.	Around **9%** of students do not have the possibility to participate in seminars, which leads us to question why. Moreover they expressed a wish to implement them under the curricula in the future.

According to the answers, the average length of classes before students lose their focus is 1 hour so the distribution of breaks during longer lectures should reflect this.

Number of Students Coherence

Number of students per class

The current average number of students per class throughout Europe, and their mutual impact on each other is listed in the tables below.

Laboratory classes	Lectures and seminars
71% of respondents stated that the number of students per one laboratory class is up to 25. The rest stated that the number of students may vary from 25 up to 100.	50% of respondents stated that the number of students per class can differ from 25 to 75, while 38% stated that the number of present students can reach over 100.

Students have different personalities and preferences so their answers differ. However, most respondents expressed that a higher number of students per class influences their concentration and ability to learn either negatively or not at all.

Suggestions

The optimal number of students present in different classes as expressed by the respondents:

Class	Laboratory	Lectures	Seminars
Optimal number of students	20	30	25
Conclusions	Majority expressed the importance of smaller groups of students in laboratory classes, in order to avoid overcrowding, lack of equipment and tasks, reduced concentration and focus, as well as mistakes and accidents.	A significant number of respondents stated that smaller groups of students may result in a better transfer of knowledge. Moreover, some expressed that lectures can have an increased number of students per class, as long as interactivity is implemented in the lecture.	Seminars are unfortunately not implemented in many faculties. The respondents' opinion is that smaller groups of students in such classes could be beneficial to transfer knowledge in an efficient and beneficial way.

Divergent Teaching Methodologies

Other types of classes

Students have the chance to attend other types of classes during their studies as well. A great number of students has the opportunity to participate in site visits, while less than half say that tutorials are the most common type of class from this category. Students and recent graduates also have the possibility to take part in small group sessions, soft skills trainings, workshops, and congresses thanks to **Local** and **National Pharmaceutical Students' Associations** that organise extracurricular activities.

Influence of other types of classes

The influence of these types of classes on the students' ability to learn and retain information is undoubtedly positive. You may read some of the respondents' comments below.

1. "We have one site visit in the industry field and it is very interesting to have a real view of this sector. I think it is a pity that other fields do not have the opportunity to organise similar visits. Moreover, I think we are not offered enough placements during our studies."

2. "Positive, different environments provide different types of education, which is beneficial. We should experience and learn as much as possible. I like small group sessions, because they allow me to focus the most. It almost feels like I am alone with the educator. It does not feel awkward to ask questions."

3. "Those kind of classes are extra-curricular and we are able to hear lectures that are important and will improve our skills as pharmacists one day. Unfortunately they are not present in the curricula."

4. "Tutorials by students to other students, site visits, congresses, Twinnets exchanges. My Local Students' Association organises a lot of these activities and events that greatly benefit my learning."

5. "Tutorials are good because they refer to our lectures and we can easily ask questions to tutors (who are usually our lecturers) on things we did not understand during the lecture. These definitely help me to learn and retain information better than during a lecture."

6. "The problem is that our faculty does not organise any other types of classes, the only way to learn like this is through projects organised by our Associations or Student Councils."

Divergent Teaching Methodologies

7. "Definitely good. I can see how certain things look in practice and decide on which subjects I want to focus on during my studies. Further, they can show me that I am not really into fields I thought I am interested in. There is nothing better than experiencing work in a real-world setting."

8. "Independent or guided research projects are important to gain experience with reading and writing scientific articles. Site visits are good to put what we learned in perspective and compare it with real-world experience. Some useful facts like pharmaceutical products and their uses are helpful in the study process. It is easier to remember such information after a visualised field trip."

9. "We are able to take part in problem-based learning where we get cases to "solve". This is a great way to apply knowledge we acquire in lectures."

Pursuit of other types of classes

Vast majority of respondents support an increase of these types of classes under the general curricula in Europe. The responses are summarised in the table below.

Why?	What?
These type of classes are	
· More lively · More dynamic · More entertaining · More visual and illustrated · More measurable · More effective · More efficient · More perceptive · More diverse · More practical · More motivating	· Good learning tools · Triggering the mind to think about the subject through different perspectives · Helping to memorise information more easily · Better learning experience · Better comprehension · Quicker way to learn · Increasing the quality of learning · Allowing students to pursue specific interest · Allowing students to see pharmacy from a different perspective · A healthy alternative · An opportunity to learn thinking outside of the box
How?	
By implementing them and increasing their presence in the European pharmaceutical curricula.	

Breaks

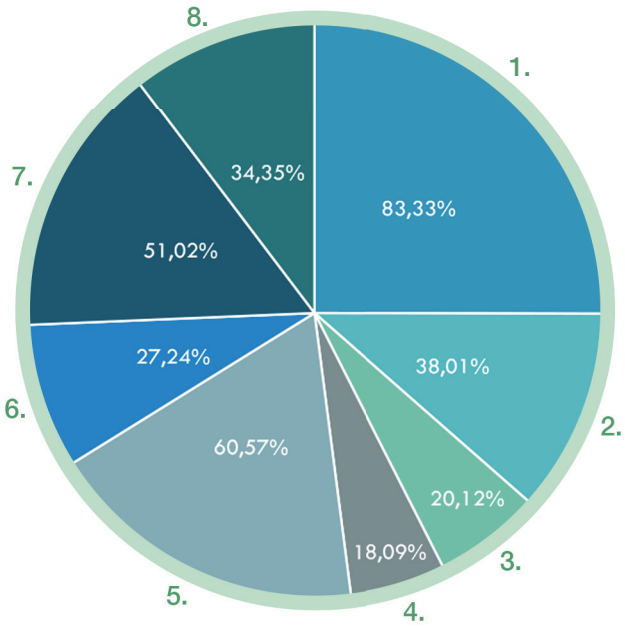
Classes	Laboratory	Lectures	Seminars
Do you have breaks during different types of classes?	Almost 60% of the respondents did not indicate the existence of breaks during laboratory classes.	Around 75% of respondents have breaks during lectures and seminars.	
Number of brakes	Faculties that include breaks during laboratory classes, usually include only one. It is meant for lunch, snacks or fresh air. Moreover, a significant number of respondents stresses that there is no existence of breaks during laboratory classes.	Around 64% of answers indicates the presence of one break per class, while the rest state that sometimes two breaks during lectures and seminars are applied. More than two breaks per class are rare. It is important to note that the number of breaks depends on the length of the class. A break is usually implemented after 45 minutes of class.	
Duration of breaks	37% of respondents stated that the average length of a break is 10 minutes, while 25% estimated that the length of a break can be up to 15 minutes. Breaks rarely last for 5 minutes. Moreover, some respondents stated that a break may last up to 1 hour.		
Conclusions	Considering the positive impact that breaks have on the ability to retain information and follow the lecture, the respondents perceive them as an inevitable part of classes. Therefore, the ideal ratio of class to break in the respondents' opinion would be 45 minutes of class followed with 1 short break.		
Students' satisfaction with the breaks	3.46 out of 5		

Grading system:
1- Not satisfactory; 2- Fine; 3- Good; 4- Very Good; 5- Excellent

Awareness

Hereby, the current ratio of different teacher-student interactions is presented. The most familiar interaction to the respondents is that teachers talk, while students listen. Further, students' presentations on certain topics are a common way to interact as well. Interaction through teachers having discussion with students while giving lectures is rare.

AWARENESS OF TEACHER-STUDENT INTERACTIONS

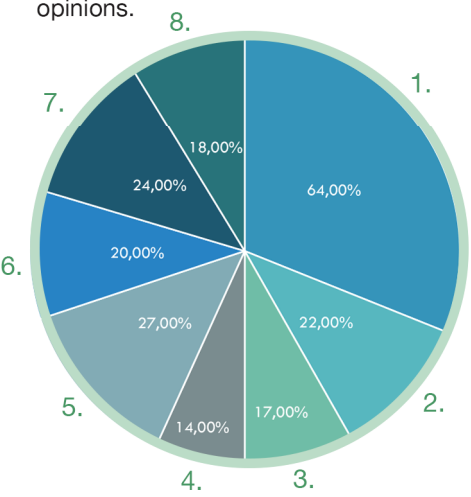


1. Teacher talks, students only listen
2. There are group discussions among students
3. There are discussions in pairs
4. There are debates between the students
5. Students have to deliver presentations on certain topic(s) that you/they have to explain to other students
6. Students have to solve case-studies individually
7. Students have to solve case-studies in groups
8. Teacher uses interactive software which allows direct student responses and engagement

Knowledge Transfer

Presence

Teacher-student interactions at the moment mostly focus on one-sided input, where the teacher talks and students listen, while other types of provided interactions are much less prevalent. In reality, the other types constitute more interactive ways to communicate, through which both sides are involved equally while forming synergistic thoughts, transferring knowledge and sharing opinions.



EXTENT OF TEACHER-STUDENT INTERACTIONS

1. Teacher talks, students only listen
2. There are group discussions among students
3. There are discussions in pairs
4. There are debates between the students
5. Students have to deliver presentations on certain topic(s) that you/they have to explain to other students
6. Students have to solve case-studies individually
7. Students have to solve case-studies in groups
8. Teacher uses interactive software which allows direct student responses and engagement

Practiced Strategies

Teachers mostly explain the lecture by connecting it to the knowledge that students have gained previously, and they use analogies when explaining concepts or ideas during classes. Moreover, it is not rare that teachers state the competences that students should gain through their subject when presenting their subject to the students. Further, they explain new concepts using animations, videos, graphs and examples from time to time. Teachers also share information about further reading materials students can use to understand a topic better.

However, some respondents expressed that some educators do not use any of these strategies while explaining concepts and ideas. This leads to the paraphrasing of presentations, without any interaction and discussion. Respondents also believe that a focus on the educator's ability to speak in public, to lecture, to be empathic and to respond to student queries, in terms of making lectures more interactive and lively, is very important.

Teaching Tools

The table below presents the prevalence of different learning materials used in classes.

Chalk and green board	40.82%
Whiteboard and board markers when needed	70.61%
Slide projector	65.92%
Overhead projectors	43.67%
Interactive board	5.92%
PPT presentations	83.47%
PREZI presentations	5.51%

In the respondents' opinion, the best strategy to transfer knowledge would be the usage of white and green boards, because it results in better and more comprehensive explanations through explaining the schemes and ideas while drawing them. This helps the students follow them more closely. It is important for students to get involved and be able to interact during lectures. On the other hand, PowerPoint presentations allow students to print them and follow the lecture visually, which also enables students to take notes and gain the knowledge faster.

Conclusions

Respondents believe that a combination of PowerPoint presentations and white/green boards is very important. Both can raise the students' concentration and interest. Moreover, the use of a board will result in a more detailed explanation, helping students to understand the core of the topic. On the other hand, PowerPoint presentations save time, because they can be shared among students easily and at the same time avoid issues associated with boards, such as unclear handwriting, while implementing colors and animations.

Respondents also provided their view on what kind of technology works best for specific types of subjects. The input provided is summarised below with additional explanations added by the writer based on what the respondents wrote.

For subjects heavy on mathematical equations and calculations, a board is more suitable as it allows the teacher to explain the problem solving step by step. PowerPoint presentations and slide projectors are generally useful for almost all kinds of subjects. A PowerPoint presentation with animations and videos is beneficial for subjects such as pharmaceutical chemistry and biotechnology due to the complexity of chemical structures and reactions, which are memorised better when presented more vividly. Additionally it is a less time consuming method of teaching.

Teaching Tools

Further, biotechnology has expanded to include new and diverse sciences such as genomics, recombinant gene techniques, applied immunology, and development of pharmaceutical therapies and diagnostic tests, where PowerPoint presentations could help through the above-mentioned visual approach. Boards are good for explaining laboratory calculations, because of their practicality and the possibility to explain equations and mathematical steps in details. Anatomy, physiology and pathological physiology could be presented through PowerPoint presentations containing 3D models, videos and images. Botany, pharmacognosy and phytotherapy can be best presented with images of the plants in question, graphs explaining the mechanisms of action of the plants' chemicals and graphs that help discern between the differences and similarities between vegetal sources.

Respondents stated that they are able to do quizzes (such as Mentimeter and Kahoot! for example) to test their knowledge on the subjects. This approach makes them pay attention in classes in more detail, while memorising the keywords more quickly. Educators usually inform students about websites and mobile applications that can help them understand lectures better. In certain cases, online platforms where educators can post videos, materials and tasks, in order to facilitate the students' work, exist and they are highly appreciated by the students.

Future technology usage

According to a wide variety of respondents' opinions, students should have access to modern technology in order to acquire good knowledge on pharmaceutical topics. Some examples of the mentioned technologies are listed below.

To use in classes	To use outside of classes
· Lectures available online (streaming) · Feedback technologies (collecting students' opinion during lectures) · Quick quizzes (tests help absorb knowledge gained during the lecture) · Animated (3D) and coloured PowerPoint presentations (interactive content) · Software simulation (broadens the understanding of complex relationships and the core concepts of mechanisms)	· Platforms and mobile applications (with recommendations, case studies and videos that allow the students to visualise medical or clinical problems or mechanisms for example) · Quizzes, online self-tests (analysing knowledge) · e-Libraries (study materials and lab results accessible, explanatory videos) · Recap systems (replaying recorded lectures) · Technology as a tool for lifelong learning

Learning Materials Distribution

The table below displays the presence of learning materials during and after classes.

Materials are **accessible online before the lectures.**	48.88%
Materials are **accessible online after the lectures.**	58.01%
Materials are **not accessible online**, you have to be present at the class and write down what the teacher is saying.	31.85%
Materials are **accessible online**, but they are not complete and you have to attend the lecture in order to gather all the information required to pass an exam with a high grade.	48.88%

Respondents find that having the materials accessible in advance is extremely beneficial because they can acquaint themselves with the topics and prepare questions for the lecturers. Moreover, they can prepare for the class, think about the topic in depth and take additional notes during lectures, which makes them easier to follow and makes it easier to retain the shared knowledge. This way, students are able to actively listen to lectures and focus on the key aspects of different topics. Furthermore, this approach makes students aware of the content of upcoming lectures while giving them the opportunity to arrange the materials in advance and create a structure for future documents.

On the other side, an issue that occurs when sharing materials in advance is class skipping by the students, which could be resolved with clear restrictions and rules set by each university.

Some students find it difficult to listen, take notes and comprehend all at once as new information needs time to be "digested" by the brain. Therefore, presenting unknown content can be confusing and overwhelming, resulting in difficulties with following the lectures. Consequently, such students explain that learning materials available in advance make them feel more positive and optimistic about further studying.

Evaluation

The following tables present the evaluation methods currently employed in pharmaceutical education. The percentages present the amount of respondents stating a method is employed in their education.

Written examination	Divided into partial exams during the module.	46.64%
	Taken as a whole at the end of the module.	75.76%
	Divided into partial exams, followed by an oral examination at the end of the module.	25.25%
	Taken as a whole and followed by an oral exam at the end of the module.	26.68%
	Graded assignments.	25.87%
Oral examination	There are only oral examinations at the end of the module.	9.98%
	Presentations.	50.92%
	Case/scenario analyses.	13.85%
	Projects.	25.87%

Evaluation

The following table presents how written examinations are being evaluated.

Questions	Open questions.		46.64%
	Multiple choice questions.	1 correct answer per question.	49.59%
		Variable number of correct answers per question.	49.18%
		Variable number of correct answers per question with negative points for wrong answers.	30.12%
	Gap fills.		26.84%
	A combination of all the methods mentioned above.		46.72%
Writings	Answering in form of short written paragraphs.		45.29%
	Writing an essay.		26.64%
	Assignments.		12.91%
Orals	There is no written, only oral examinations.		3.48%
	Presentations.		24.18%
	Case/scenario analysis.		11.07%
	Project.		11.68%

Evaluation

Knowledge assessment strategies

Students and recent graduates were asked to share their opinion on different knowledge assessment strategies and the outcomes are presented in the table below.

Knowledge assessment strategy	PROS	CONS
Multiple questions	· Focus on specific matters · Lower chance to misinterpret the questions · Test knowledge in detail	· Test passive knowledge · Stress related with negative points · Pure luck can result in positive results
Written examinations and essays	· Less stressful · No fear of giving the wrong answer · More freedom to express opinions and knowledge	· Demanding and more difficult for teachers to correct · Time consuming
Oral examinations	· Reflect actual knowledge · Soft skills development · More relevant compared to written examinations as the CONS of written examinations are avoided · Require frequent studying · Boost confidence · Eliminate cheating	· Fear of speaking or stage fright · Loss of thoughts

Evaluation

Knowledge assessment strategy	PROS	CONS
Presentation/Case study	· Practical · Soft skills development · Understanding and using theoretical knowledge actively · Search for additional information · Very objective · Teamwork practice	· Fear of speaking or stage fright · Content may be misinterpreted
Combinations	· Combine many perspectives · Evaluation of knowledge acquired in different ways · Sum up	· More difficult for students to adapt to

CONCLUSIONS

Respondents considered the above-mentioned types of knowledge assessment. Through open questions and oral examinations students are able to showcase the comprehension of acquired knowledge. Multiple-choice questions showcase their attention to details. Moreover, respondents stress the importance of exams during the semesters, because it facilitates and encourages continuous learning. A minority of respondents is strongly in favour of open-book examinations with permission to use books during written examinations. They consider that as long as students are aware of the subject and its content, looking up the correct and trustworthy information would show ability to use the knowledge efficiently by testing whether students understand the matter, instead of whether they are able to reproduce facts.

Evaluation

Students' influence on evaluation

Students are an important part of universities, therefore considering their opinions and advice could lead to a higher quality of education. This matter should be discussed with both, educators and students, while taking into account different types of personalities, possible health issues (such as dyslexia, dysarthria and logorrhea for example), and difficulties to express knowledge through different types of assessments.

Consultations are vital and offer the educators the final say. Educators should be aware of different types of assessments and the importance of testing out all forms of examinations in order to find the most suitable type for a specific subject. They should choose the type of evaluation that represents the students' knowledge of the subject most accurately. Moreover, the use of different types of evaluation is beneficial because each student has his own preference and because practicing different ways of evaluation could prepare students for the professional world. Therefore, every student should be trained and evaluated in different ways, while being able to respond to the assessment formats that are considered to be the best. Further, students should understand how they can study and understand the topic if they have a voice in this matter.

The reason why students should not have the final word in the decision making process in education is because their own preferences may result in lack of objectivity. The rising issue of students being able to choose the easiest way to assess their knowledge may lead to demotivation and lack of commitment. However, educators deciding on the exact evaluation type should challenge students to learn more and strive to meet their expectations on examinations. Knowing that, the educators having the final say on the knowledge assessment type would avoid the possibility of the students' preferences to result in lower knowledge criteria of subjects.

Outcomes & Feedback

Educators usually make sure that students are able to ask questions at the end of each class. However, objectives, summaries or bullet points are usually not presented at the end of a class. Moreover, it occurs that educators deliver lectures with no time for any feedback or discussion at the end. On some occasions, a short summary of the lecture is presented and certain bullet points are provided, but not always.

Students appreciate feedback and consider it a major part of lectures which offers room for improvement regarding the content, lecture and educators themselves. Absence of any kind of outcomes and feedback results in a long-term issue that reflects in the students' dissatisfaction and lack of motivation.

Problem solving

Student-teacher dialogue should improve with students becoming more active and teachers becoming more willing to listen to the other side, with both sides being genuinely interested in each other's opinions. A focus on interactive approaches could reduce the lack of feedback. Teachers should also give feedback to students, while helping them find their path in the future professional world. Students require motivation in order to provide feedback. Students wish for more creative approaches that exclude less important facts, which will lead to fewer details to memorise. Further, using clarifications and keywords while stressing out the most important parts of the class is beneficial. The respondents believe that feedback can be anonymous, but only if it includes genuine suggestions that will result in an improvement. Open feedback could result in mutual ideas that would overcome the barriers. Afterwards, teachers should investigate whether they met their objectives in accordance with the given feedback, so they can set clear goals before every lecture. Students should be empowered, while teachers should be open minded, and in order to reach that, communication is an essential tool that will lead to mutual growth.

Surveys

Students participate in regular surveys to evaluate the subjects and teaching methodologies throughout their studies. They find such surveys very useful. The only issue is that majority of respondents feel that the opinion provided through the surveys is not taken into account. This leads to the question of whether these surveys are considered competent enough by the policy makers and regulators.

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Student-teacher communication

Teachers usually reserve a weekly time slot for student consultations, where students can meet them if they require any help or have additional questions about the lectures. Moreover, teachers are always reachable by e-mail and phone.

Overall, students are satisfied with the mutual communication, but would like to see improvement in responsiveness regarding e-mails. Further, it seems that one appointment time slot per week is not enough for the majority of the students. Students wish for more time slots but they should take into consideration the fact that they should approach professors only when they have a clear idea of what they need from them. When it comes to fruitful student-teacher communication, the teachers' attitude, approach and behaviour are of great importance as well. A proposal for improvement could be to decrease the number of students per class, which could result in better communication.

Soft Skills

The vast majority of respondents expressed that soft skills are not implemented in their curricula. However, universities that did implement soft skills in the curricula, mostly introduce these topics during the 1st and 2nd years of studies, with their presence not being excluded during later years of studies as well.

Frequency and length

How frequent were your soft skills sessions? Responses:

- "Only a couple of trainings before the mandatory internship. Occasionally, we had some during the first semester of the first year."
- "There were only two sessions per year with the length of 3 hours each."
- "Throughout all years, but mostly during the 3rd and 4th years of study, we had trainings once every few weeks for 1-2 hours."
- "We have a communication module in the 2nd, 3rd and 4th years of study. It consists of around 5-6 sessions lasting 2 hours each in a semester, and at the end we have to make a presentation for other students."
- "Twice a month for 4 hours."
- "We have soft skills as optional subjects in the 4th and 5th years of study. Also, we have Trainers at the faculty, so we can participate in soft-skills seminars."
- "Throughout all study years, fairly regularly. Sessions on a weekly basis."
- "We had them a few times, but they were not organised by our faculty, but by our Local Students' Association."
- "Every week, with 1.5 hour of lectures, and 45 minutes of practice."

Impactful soft skills topics

Respondents were asked to list the soft skills topics they find impactful for their future as health care professionals and these are the most frequent responses:

NETWORKING

LEADERSHIP

PUBLIC SPEAKING

TIME MANAGEMENT

EMOTIONAL INTELLIGENCE

COMMUNICATION SKILLS

PROJECT MANAGEMENT

GROUP DYNAMICS

Soft Skills

Importance of Soft Skills

Students have opportunities to educate themselves in soft skills through other ventures that are mostly organised by Students' Associations. Without any further question, students consider soft skills of huge importance for their functional interaction in business, academic and everyday environments. Implementation of soft skills under the pharmaceutical curricula in Europe would undoubtedly bring huge benefit not only for students, but educators as well.

Respondents expressed that soft skills are of equal importance as the theoretical knowledge because patients do not need pharmacists to recite them the retained information. Every patient requires a different approach, and learning how to approach different people is crucial during studies. Through soft skills, students have the chance to develop practical competences and different kinds of skills that would ease communication with patients, raise self-awareness and boost self-confidence. Students do not learn how to get motivated, or talk to a large number of people, or deal with certain situations. In short, they do not learn how to use their knowledge and potential optimally. Overcoming a lack of knowledge is easier than overcoming a lack of soft skills. That is the reason why the respondents believe that soft skills should be incorporated in the pharmaceutical curricula all over Europe.

Moreover, miscommunication in the pharmaceutical profession could potentially result in life threatening situations for patients, therefore learning the ways to improve communication, to assert oneself when needed and to think critically, is essential. Time-management is also an integral part of the pharmaceutical profession. Soft skills are vital in every field of life. Communication as the first example of a soft skill is often ineffective because people are not even aware of misunderstandings. High grades reflect a high level of knowledge but do not reflect the level of the soft skills students gained during their studies. However, it is important to keep in mind that all students should be educated in soft skills as well.

Therefore, Student's Associations, such as EPSA, provide additional possibilities to educate students on soft skills by training them to become professional Soft Skills Trainers and deliver Soft Skills Trainings through a wide variety of events. Through these opportunities, students experience a more relaxed way of gaining soft skills through Trainings, which makes them more eager to attend and participate in them. Further, they see a potential for this type of educational content to be tailored to more specific topics such as „How to talk to patients" and „How to work in a pharmacy" for example.

93% of students wish for soft skills inclusion in the European pharmaceutical curricula.

Motivation

Through this open question, the respondents were able to explain what moves them to learn new things and improve their set of soft skills. The writers of this booklet created the table below based on these responses and the feedback shared through them.

Reflection	IMPLEMENT (Do I use it)	ONESELF (Do I evolve)	EXPERT (Am I efficient)	EVERYWHERE (Do I see it)
Motivation	Everyday life	Personal growth	Professionalism	Curiosity
	New knowledge	Self development	Networking	Widening viewpoints
	Shared information	Social competence	Job qualification	Outside the world
	Lifelong learning	Fear of failure	Opportunities	A life of ease
	Entertaining approach	Problem solving	Employment	Practicality

The above-mentioned motives encourage students to learn and improve their set of soft skills which are mirrored in reflections of different profiles. The focus of one of these profiles, the implementation, is being aware of the soft skills usage and the elevation of knowledge. The second profile, the oneself reflection, helps a person observe their inner flourish and maturity. The acquired skills reflect excellence and proficiency through being an expert of a profession. We conclude that the importance of soft skills as well as their impact on the world are clear.

Mobility

Mobility projects offered by faculties:

Other

Local exchange programmes - Moreover Local Exchange Programme is referred to local mobility programmes between faculties under one country.

Erasmus+

Usually, faculties offer the Erasmus+ study exchange programme, both for studies and for placements and internships. Students have a great impact on the promotion of mobility projects, while some external associations promote them as well. Faculties provide information on mobility projects and opportunities as well but some do it only occasionally or not at all.

A great number of respondents ask for more opportunities in terms of the Erasmus+ programme. They would also like more possibilities to perform thesis research abroad, more summer school programmes, research projects and more exchange programmes with countries outside of Europe. It is important to note that many such opportunities exist but the students are not aware of them, so promotion of them should increase, especially from the faculties' side. Some students consider mobility projects to be expensive, therefore scholarships regarding this matter would be beneficial as well.

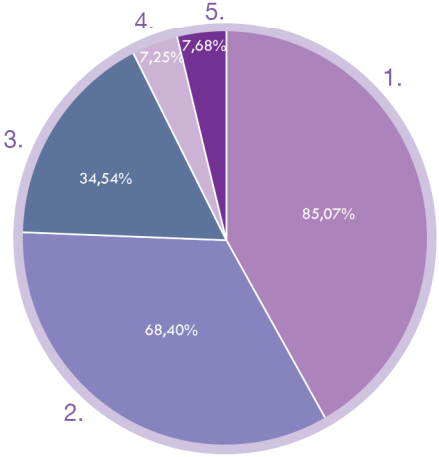
Mobility projects are perceived as beneficial for the professional and personal development. New experiences, knowledge and ideas inspire students to embrace different learning methods and discover new interests. Exchange programmes are helping students to become aware of the development of pharmacy in other countries and the actual trends in health care. Establishing new connections with students and educators from other countries, experiencing cultural diversity, experiencing new languages and the improvement of social skills are considered as vital parts and benefits of these projects. Students step out of their comfort zone and develop open-mindedness, while learning how to adapt personally and professionally. Mobility projects offer new opportunities to experience pharmacy from different perspectives, while expanding soft skills and being able to implement the gained knowledge into their lives. The overall knowledge students obtain and the experience itself results in better professionals, that are more employable and open to new visions and people.

Mandatory Internships

Accessible areas to perform the mandatory internships

The majority of European students must complete a mandatory internship at the end of their course, while on a few occasions, internships are organised throughout the course. Summer internships and internships during the beginning of the studies exist as well. However, some respondents stated that they are not able to take part in any type of internship.

The average length of the mandatory internship is around eight months, but they differ from one month to six months and up to one year. Majority of students is very satisfied with the current length of the internships. They express that internships should last for at least six months, while one year could be a more optimal length.



ACCESSIBLE INTERNSHIPS

1. Community pharmacy
2. Hospital pharmacy
3. Pharmaceutical companies
4. Insurance agencies
5. Other

Other accessible areas include:

LABORATORY INTERNSHIPS

RESEARCH INTERNSHIPS

PHARMACISTS WITHOUT BORDERS

A significant number of respondents wish for more versatile internships that include the options mentioned above. Further, raising the presence of internships in areas other than community pharmacies, such as industries, hospitals, pharmaceutical companies, laboratories and insurance agencies, as well as opportunities for students interested in clinical pharmacy and health care organisations, would be beneficial. Moreover, respondents mention that they would be interested in internships that would be connected to clinical trials, regulatory affairs, quality analysis, psychiatry, sports and marketing. Students seek for the opportunity to choose in which professional sector they would like to educate themselves through the mandatory internship as pharmaceutical education enables the graduates to seek a profession in a wide variety of different fields.

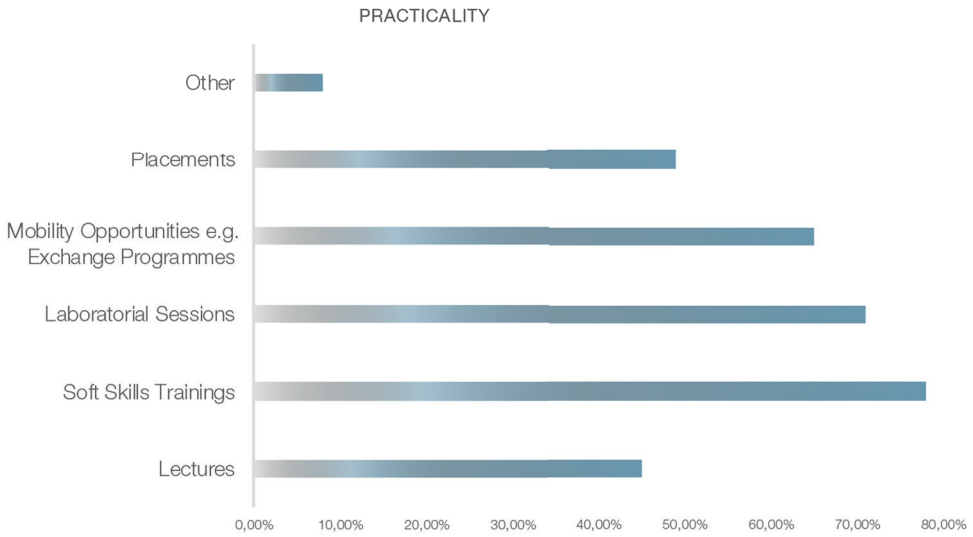
Mandatory Internships

Preparedness

A high percentage of students do not have the possibility to attend lectures to prepare for upcoming internships. When such lectures are organised, they usually encompass soft skills, specific simulations, introductory and clinical courses, propedeutics*, law and regulations, and real internship expectations. Some lectures include detailed information on different topics from specific subjects such as cosmetology, pharmaceutical technology and pharmacology. However, some faculties offer elective lectures to additionally prepare students for the internships.

*In medicine, the terms "propedeutics" specifically refers to preliminary collection of data about patient by observation, palpation, temperature measurement, etc., without specialized diagnostic procedures.

The respondents were able to choose which methodologies have a greater impact and usefulness on their student and professional lives from the options mentioned below.



Hard skills are considered of greatest importance to a health care professional, while soft skills and mobility projects are deemed important as well. Internships and volunteering boost students' competences and prepare them for the health care world that awaits. Overall, students consider all of the listed options as very important for their path to become highly skilled professionals. It is important to keep in mind that pharmaceutical education opens the possibility to pursue a profession in a variety of different fields. For all of the fields, the aforementioned approaches are important but their relative importance can vary from field to field so students and educators should keep that in mind and strive for a balanced approach.

Unification

Students seek for equal opportunities in education, therefore a unification of pharmaceutical curricula in Europe would set consistent standards in health care and would facilitate the mobility of professionals. All students would have the same standards and educational pillars. There would be no differences in working conditions, respect and status in society. Pharmacists would be able to protect and present the profession better, and the pharmaceutical degree would be recognised all over Europe without the need of nostrification. Studying abroad would be easier and would not require prolonging the studies for a year due to the educational credits not being accepted in their home country.

Unified curricula would facilitate the overall mobility of pharmacists all over Europe. An increase in the number of exchanges between universities would reduce the fear of participating in mobility projects, such as Erasmus, since the educational pillars would be similar. Unification can improve the education in less developed countries with a lower budget, as at the moment, some faculties offer better quality programmes than others. Therefore, the unification should proceed carefully to ensure high-quality education in order to standardise the quality of pharmaceutical care across Europe.

On the other side, different countries have different needs for the pharmacists. Furthermore, the regulatory framework is slightly different in each country. These and other differences between countries and cultures need to be taken into account when unifying the curricula. Moreover, countries have different laws on pharmacy, medicines, provision of healthcare, costs etc. Pharmaceutical students should learn about the healthcare system in the country they study in, which makes the unification of curricula difficult. Respondents believe the foundations of curricula can be similar to other countries (e.g. almost same medicines), however certain specifics, such as the difference in laws, should be taken into consideration and implemented. If a pharmacist wants to work in another country, the pharmaceutical degree and the skills they gained through it should be transferable, while additional education in terms of country specific matters, such as laws and regulations, should be available. This would be a requirement to enter the workforce in another country while the core competences would be taught all over Europe in a similar manner. Further, cultural differences could perhaps be added as an elective learning course if someone would like to work in another country.

Different faculties need to offer other courses specific to their country or region, for example the use of different types of herbal medications in different parts of Europe. Those approaches would be difficult to unify, since they are not equally important to the pharmaceutical education in all countries. Therefore, the unification should not affect specific focuses, but result in a consistent knowledge of pharmaceutical practice that is built on the same main pillars all over Europe. Further, the duration of the pharmaceutical education differs in countries because education is not based on becoming a community pharmacist, but on a more general education to be able to work in other areas of pharmacy as well. Therefore, different educational backgrounds should be established, where possible, under unified curricula with equal principles. This would lead to students being educated in different areas of pharmacy and receiving distinct certificates based on the area they were educated in.

Unification

Healthcare is important all over Europe. For that reason, the development of unified curricula could strive towards more precise goals in order to serve patients in the best possible way. Equality of education would allow professionals to follow the pharmaceutical development more easily. The evaluation of a potential employee's skill set would be less of an obstacle when searching for a job abroad. Finally, the unification could result in a positive impact on healthcare, because each country would not lose their individuality. Students will have more opportunities and easier access to them, and would still be able to obtain additional information that might not be provided by their home country.

In terms of the possibility to unify the pharmaceutical curricula in Europe, respondents wish for:

- Overall mobility of pharmaceutical students and pharmacists throughout Europe;
- Easier possibility to work throughout Europe, and unified evaluation of qualification;
- Comparative quality of educational programmes;
- Soft Skills educational programme;
- e-Health educational programme;
- Comparable competences between pharmacists;
- Comparable standards of education and health care;
- No need of nostrification;
- Comparative health care systems and quality throughout Europe.

Future

What is coming up?

*Fūtūrus**, what is to be? Time that is to live or come hereafter depends on our deeds and commitments. Apropos of how we perceive current teaching methodologies in the pharmaceutical curricula and what we aim for. For that reason, we must choose the right way to provide suggestions and strive to foster intercommunication between students and educators that will consequently result in better health care professionals.

What are we doing?

For above-mentioned reasons EPSA is:

· Advocating in the area of education by focusing on creating a better educational environment and experience for all pharmaceutical students and recent graduates, with the aim of training better prepared and more competent European pharmacists.

· Developing a project to stimulate lifelong learning among students and recent graduates, the Lifelong Learning Platform (LLeaP).

· Advocating for the inclusion of soft skills in the pharmaceutical curricula through a position paper. Furthermore, EPSA strives to be a leader in the field of soft skills trainings.

· Focusing on public health campaigns while providing the students with skills and knowledge on how to contribute effectively to public health ambitions and tackle major challenges to health in Europe. Identifying and working proactively on public health needs that remain unaddressed in Europe are of great importance to EPSA.

· Striving to get involved in social services, especially the ones related to healthcare issues as we have a responsibility as future healthcare professionals to strive to improve public health.

· Educating students on the scientific aspects of the pharmaceutical professions (e.g. how to write articles and abstracts, how to present research, how to submit/present a scientific poster, etc.) through different educational activities.

· Representing members from all over Europe to external entities with the aim of presenting the students' agenda and advocating for students' opinions.

· Promoting mobility through projects and activities such as Twinnet, by bringing pharmacy, knowledge, and students together.

· Increasing individual mobility and preparing students for the professional world by providing them with a high quality, international work experience in as many different fields of the pharmaceutical profession as possible.

. Facilitating the pharmaceutical students' interaction with the professional world through professional affairs related projects, such as the Mentoring Project and the Career Page.

. Giving the European pharmaceutical students the possibility to interact with each other through the EPSA events organised throughout the year.

*latin, about to be, future.

More detailed information on the EPSA projects and activities related to the aforementioned topics is available on the EPSA website (epsa-online.org). If you have any questions or would like to collaborate with EPSA in any way, you can contact us on info@epsa-online.org.

What are others doing?

Research in the area of education is constant. More and more research and review articles on related topics are being published. Due to their large and ever increasing number, we will not list them separately here but acknowledge their existence and encourage all readers to consult them.

Professional associations also organise activities aimed at evaluating the education and later improving it.

Websites aimed at collecting the students' opinion and feedback on different faculties also exist and everyone can join them and share their feedback through them.

Annual surveys regarding teaching methodologies are spread throughout pharmacy faculties in Europe with the aim of improving education.

An example of further reading material mentioned above are the Nanjing Statements. They were released by FIP and pharmaceutical students were able to provide their feedback on them through the International Pharmaceutical Students' Federation.

Outcomes from the Global Conference

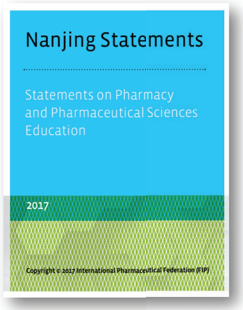
3. Statements of Pharmaceutical Education

67 statements adopted by consensus representing international expectations of how effective pharmaceutical education will meet local needs.

Grouped into 8 clusters: Global vision; Skills mix; The right learners; Foundation training and leadership; Experiential training; Resources and faculty; Quality assurance; and Continuing Professional Development.

Designed primarily for education providers [Schools of Pharmacy/CPD providers]

- Self-assessment and monitoring (at country or education provider level)
- Identification of gaps and strategic planning
- Improving the process of education



Outcomes of the Global Conference: 'Nanjing Report'

A full report of FIP's Global Conference

Released: May 2017

Available in: English, Chinese, French, Portuguese, Spanish

http://fip.org/publications

How you can get involved?

By visiting our http://www.epsa-online.org/ website you have a chance to get involved in EPSA projects and invest in your education.

If you have any comments or suggestions on the content of this booklet or if you would like to collaborate with EPSA, do not hesitate to contact us.

We also kindly ask every reader to help us raise awareness of this booklet by sharing it with students, educators, policy makers and regulators.

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Annex

Current Methodology Booklet survey

By visiting our Methodology Booklet survey you can acquaint yourself with the preview of questions with reference to released content. For more details, please follow the link below.

https://bit.ly/2zyVYHM

Through this shared poster of previously collected responses you will be able to acquaint yourself with the past outcomes of the survey.

Previous Methodology Booklet survey outcomes

Methodology Booklet student survey about teaching methods around faculties of pharmacy in Europe

Marina Knezović[1]
[1]European Pharmaceutical Students' Association

Objectives

The Methodology Booklet Student Survey was developed in order to gather data from European Pharmacy students about the teaching methods currently used in Faculties of Pharmacy in Europe.

The aim of the survey is to present students' assessment on their faculty learning experience which encompasses: 1. communication with teaching staff; 2. structure of lectures; 3. accessibility of lecture materials; 4. presentation tools used during lectures; 5. importance of soft-skills.

Methods

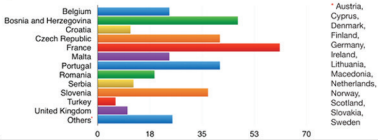
The survey was created in collaboration with EAFP. It has **49 questions** in total and consists out of 11 different parts. Each part has 2-5 questions that were formatted in two ways: open questions and questions with multiple answers.

The target audience of the survey encompasses a wide range of pharmacy students from all years of studies. The survey takes 15 minutes to answer and results have been gathered for four weeks.

Distribution is being managed through the EPSA network, which covers 35 European Countries and 41 member associations. So far we received answers from 25 European countries.

Limitations of the survey

- The survey received 359 responses in total (EPSA represents over 160 000 students)
- The results do not have equitative distribution throughout our member countries
- The methods in the survey included open and multiple choice questions so the variability of the results is intrinsic.



Results

The survey remains open and the process of gathering examples of successful teaching methods from pharmacy students in Europe is still ongoing. Therefore, the results presented here are preliminary results.

Communication with teaching staff

Interaction between students and teaching staff during lectures

- According to 77% of the respondents, the teacher talks and the students only listen in 80-100% of the lectures.
- Students stated that group discussion (87%), pair discussion (89%) or debates between students (70%) happen in 0-20% of the lectures.
- 45% of students are unsatisfied or very unsatisfied with the possibility of getting involved in discussions during the lectures at their faculties.

Teaching methods students believe would help them retain information better (fig. 2)

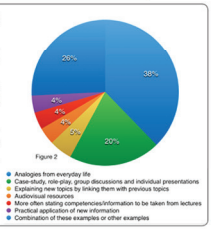


Figure 2

Availability of teaching staff outside lectures

65% of the students stated that teachers were available via e-mail or had visiting hours. When asked how to improve communication with teaching staff outside of lectures, 36% of students expressed interest in having a weekly time slot as part of the obligatory curricula, where they could come and ask questions, while 24% said that the teachers should approach students through others means as well (e.g. create online platforms, share videos).

Ability to give feedback and feeling of it being taken into account

70% of the students stated that they have surveys at the end of each module where they evaluate/assign grades to the professors, the quality of the courses and the infrastructures (e.g. laboratories, library, resources).
63% of the students believe that their remarks are taken into account.

Structure of the lectures

60% of students stated that lectures should ideally be 1.5 hours long, with a pause every 45 minutes.
60% of students stated that they lose concentration after the first 45-60 minutes of a lecture.
61% of students stated the optimal number of students present per lecture room is between 25-75 students.
79% stated that they find/would find helpful having either a short summary of a lecture or bullet points of what could be asked in the exam provided at the end of each lecture.

Accessibility and presentation tools

61% of students stated that materials at their faculties are accessible online only after the lecture, either complete or incomplete (to be completed with annotations from the lecture).
92% of the students see the benefit of having the materials accessible online before the lectures (fig. 3).

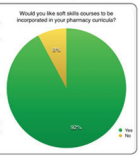
Regarding how learning materials are presented, 93% of the students stated that Power Point presentation is used in 80%-100% of the lectures.

Figure 3

Importance of soft skills

50% of the respondents do not have soft skills indicated in their curricula, but 88% of the students would like to have them incorporated/increase their frequency.

Student feedback regarding importance of soft skills:
"Probably one of the most important segments of the modern pharmaceutical profession."
"(soft skills) are of major importance in all the aspects of our lives as they allow us to be understood, understand others, and solve problems"



Conclusions

According to the preliminary results gathered, most of the students found having materials accessible before the lecture, incorporation of the soft skills, active engagement of student in classrooms and generally increased communication between student and professors would help improve the guality, level of appeal and clarity of information presented to students during their faculty life.

The final results of the survey will be used for the creation of the Methodology Booklet, a booklet presenting concrete suggestions on methods that can be easily incorporated into pharmacy teaching to improve the students' understanding of their formal academic education and prepare them better for their professional life.

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