Supplementary Material

Engaging large classes of Higher Education students: a combination of Spaced Learning and Team-based Learning

|  |
| --- |
| **Team Based Learning: Peer assessment (5% of the final evaluation of the curricular unit)**  Part of the evaluation was determined by the quality of the group work. If some elements work more or less than others, the evaluations should reflect these differences. The peers assessment allows the professor to take into consideration these differences and assign individual evaluation to the group work. Once the professor was not present in the group work, only the group members can evaluate their peers. It is important to have a formal, objective, and professional way of evaluating the performance of the group members. Please do not discuss your evaluation with the group members. It should be an individual reflection. |

|  |  |
| --- | --- |
| **Name:** | **Group:** |

|  |
| --- |
| For each element of your group, indicate how much you agree with the sentence in the left, using a scale 1-5 (1 – completely disagree; 5 – totally agree).  Do also your self-assessment, which will not be used for the final calculation of your evaluation. |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Name of group members** |  | **1.** | **2.** | **3.** | **4.** | **5.** | **6.** |
| **Evaluation criteria** | **Me** Points | Points | Points | Points | Points | Points | Points |
| Is punctual (arrives on time; is present in group activities) |  |  |  |  |  |  |  |
| Prepares the group work with quality |  |  |  |  |  |  |  |
| Completes the group tasks on time |  |  |  |  |  |  |  |
| Contributes for the group discussions (with relevant information, share ideas, participate, help) |  |  |  |  |  |  |  |
| Demonstrates communication skills (keep the group informed about the progresses and problems) |  |  |  |  |  |  |  |
| Promotes the group work above the personal interests |  |  |  |  |  |  |  |
| Respects the group members (listen, answer, and consider the ideas of the group members) |  |  |  |  |  |  |  |
| You would like to work with this colleague again |  |  |  |  |  |  |  |
| **TOTAL** |  |  |  |  |  |  |  |

|  |
| --- |
| **Qualitative:** Feedback about the dynamic of the group:   1. How efficient was your group work and why? 2. What did you learn about working in group from this module that you can carry over for the next experience group working? |

**Pilot Study Questionnaire**

|  |
| --- |
| **Context**  Initially, 14 classes were supposed to be attended by the students. Meanwhile, the COVID-19 pandemic forced all of us to go to distance learning and the original planning for the course had to be altered. Only 4 out of the 14 classes were based on Team-based and Spaced learning. Thus, I ask all the students to try to answer this questionnaire taking into consideration the experience of those first classes. |

Perceptions and attitudes of students towards **Team‑based learning and Spaced learning** strategy in the Integrative Biochemistry course (take into consideration the first 4 classes)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Objectives for the course** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 I understand the course content |  |  |  |  |  |  |  |
| 2 I am able to apply the course content |  |  |  |  |  |  |  |
| 3 I have developed interpersonal and group interaction skills |  |  |  |  |  |  |  |
| 4 I have developed skills for life‑long learning |  |  |  |  |  |  |  |
| 5 I enjoyed the course |  |  |  |  |  |  |  |
| **Impact of Team Based Learning (TBL)** |  |  |  |  |  |  |  |
| 6 The TBL approach was an appropriate way to structure this course |  |  |  |  |  |  |  |
| 7 The TBL approach enhanced my learning experience in this class |  |  |  |  |  |  |  |
| 8 With TBL, I have gained profound insights into my strengths and weaknesses as a learner |  |  |  |  |  |  |  |
| 9 TBL sessions have enabled me to develop healthy personally rewarding relationships with the teacher |  |  |  |  |  |  |  |
| 10 TBL sessions have enabled me to develop healthy personally rewarding relationships with my colleagues |  |  |  |  |  |  |  |
| 11 I recommend using the TBL approach in future courses |  |  |  |  |  |  |  |
| 12 Individual questionnaires at the beginning of the class allowed me to test my study at home |  |  |  |  |  |  |  |
| 13 Group questionnaires were important to increase my knowledge and clear up doubts with peers |  |  |  |  |  |  |  |
| 14 Teacher feedback in the class after home studying |  |  |  |  |  |  |  |
| **Impact of Spaced Learning (SL)** |  |  |  |  |  |  |  |
| 15 Name writing activity |  |  |  |  |  |  |  |
| 16 Physical activity - Pilates |  |  |  |  |  |  |  |
| 17 Physical activity – gymnasium like |  |  |  |  |  |  |  |
| 18 balancing on one leg |  |  |  |  |  |  |  |
| 19 How important were for you the physical/manual activities in the middle of the classes |  |  |  |  |  |  |  |
| **Global** |  |  |  |  |  |  |  |
| 20 I learn better with TBL and SL than with traditional theoretical classes |  |  |  |  |  |  |  |

|  |
| --- |
| **Highlight a positive aspect of the course** |

|  |
| --- |
| **Highlight a negative aspect of the course** |

**Final Questionnaire**

Perceptions and attitudes of students towards **Team‑based learning and Spaced learning** strategy in the Integrative Biochemistry course.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Objectives for the course** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 I understand the course content |  |  |  |  |  |  |  |
| 2 I am able to apply the course content |  |  |  |  |  |  |  |
| 3 I have developed interpersonal and group interaction skills |  |  |  |  |  |  |  |
| 4 I have developed skills for lifelong learning |  |  |  |  |  |  |  |
| 5 I enjoyed the course |  |  |  |  |  |  |  |
| **Impact of Team Based Learning (TBL)** |  |  |  |  |  |  |  |
| 6 The TBL approach was an appropriate way to structure this course |  |  |  |  |  |  |  |
| 7 The TBL approach enhanced my learning experience in this class |  |  |  |  |  |  |  |
| 8 With TBL, I have gained profound insights into my strengths and weaknesses as a learner |  |  |  |  |  |  |  |
| 9 TBL enabled me to develop healthy personally rewarding relationships with the teacher |  |  |  |  |  |  |  |
| 10 TBL enabled me to develop healthy personally rewarding relationships with my colleagues |  |  |  |  |  |  |  |
| 11 I recommend using the TBL approach in future courses |  |  |  |  |  |  |  |
| 12 Individual questionnaires at the beginning of the class allowed me to test my study at home |  |  |  |  |  |  |  |
| 13 Group questionnaires were important to increase my knowledge and clear up doubts with peers |  |  |  |  |  |  |  |
| 14 Teacher feedback in the class after home studying was crucial |  |  |  |  |  |  |  |
| **Impact of Spaced Learning (SL)** |  |  |  |  |  |  |  |
| 15 The physical activity in the middle of the classes was important |  |  |  |  |  |  |  |
| 16 I enjoyed physical activity that included Yoga/Pilates |  |  |  |  |  |  |  |
| 17 I enjoyed physical activity that included gymnasium workouts |  |  |  |  |  |  |  |
| 18 I enjoyed physical activity that included some dancing |  |  |  |  |  |  |  |
| **Online vs face to face learning** |  |  |  |  |  |  |  |
| 19 The online TBL had more benefits for my learning process |  |  |  |  |  |  |  |
| 20 The online TBL was more efficient for the group work |  |  |  |  |  |  |  |
| 21 The face to face Spaced learning was more engaging |  |  |  |  |  |  |  |
| **Project** |  |  |  |  |  |  |  |
| 22 The project development was important for the development of soft skills |  |  |  |  |  |  |  |
| 23 The project was relevant for my learning achievements within the course |  |  |  |  |  |  |  |
| **Assessment** |  |  |  |  |  |  |  |
| 24 I prefer to have several assessment components |  |  |  |  |  |  |  |
| 25 Peer evaluation was important for group dynamic |  |  |  |  |  |  |  |
| 26 TBL random evaluation throughout the semester made me have my study up to date |  |  |  |  |  |  |  |
| 27 I believe that my assessment corresponded to my workload |  |  |  |  |  |  |  |
| **Global** |  |  |  |  |  |  |  |
| 28 I learn better with TBL and SL than with traditional theoretical classes |  |  |  |  |  |  |  |

|  |
| --- |
| **29 - Highlight a positive aspect of the Integrative Biochemistry course** |

|  |
| --- |
| **30 - Highlight a negative aspect of the Integrative Biochemistry course** |

**Quality Management System (SGQ) questionnaire**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Question** | **n1** | **n2** | **n3** | **n4** | **n5** | **n6** | **n7** | **n8** | **n9** |
| **Characterization of the course** |  |  |  |  |  |  |  |  |  |
| Coordination of the various components of the course |  |  |  |  |  |  |  |  |  |
| Adequacy of recommended study elements and bibliography |  |  |  |  |  |  |  |  |  |
| Adequacy of assessment methods |  |  |  |  |  |  |  |  |  |
| Overall functioning of the course |  |  |  |  |  |  |  |  |  |
| Volume of work/time required to obtain final approval |  |  |  |  |  |  |  |  |  |
| **Teacher performance** |  |  |  |  |  |  |  |  |  |
| Ability to stimulate and motivate students for the course |  |  |  |  |  |  |  |  |  |
| Creation of a favorable climate for learning and the active participation of students |  |  |  |  |  |  |  |  |  |
| Encouraging student autonomy |  |  |  |  |  |  |  |  |  |
| Monitoring student work |  |  |  |  |  |  |  |  |  |
| Teachers’ relationship with the student |  |  |  |  |  |  |  |  |  |
| Global assessment of teacher performance |  |  |  |  |  |  |  |  |  |

**Positive commentaries from students – Pilot study**

Qualitative data from the pilot project, including the students’ positive feedback about the face-to-face and distance classes of **Team‑based learning and Spaced learning** strategy in the Integrative Biochemistry Curriculum

|  |
| --- |
| **Face-to-face classes** |
| 1. The questions about each part of the subject are a great help as they allow us to see if our study is efficient or not. In addition, this helps us to understand how the test structure would be |
| 2. The contents are very interesting and useful for what we are going to do in the future |
| 3. The audios were very useful, considering that we could watch and review them whenever we needed to |
| 4. The power-points are very clear and make studying easier, being a class different from all the others |
| 5. The fact that we studied previously meant that, when we had theoretical classes, I already understood the contents much better. As a rule, we go to theoretical classes without knowing anything about the subject and, at least for me, it is difficult to maintain attention. This method helped me to make better use of these theoretical moments. The space learning is also very important to renew attention |
| 6. I loved the breaks in classes and the teacher's accessibility to answering our questions |
| 7. The curricular unit addresses interesting and central content for our future. It should also be mentioned that the professor also provided us with different moments during classes, which resulted in good learning. |
| 8. Relevant and very informative topics |
| 9. The use of spaced learning was what I found most interesting in the face-to-face classes. It was really possible to rest and settle down ideas, in order to listen to the subject. I also found the chronological order of the content organized |
| 10. I think that stopping in the middle of the class to relax a little (mainly pilates which helps to relax and relax the muscles, mainly the cervical muscles) was very important to then return to the class with more attention |
| 11. About first 3/4 classes: I liked the fact that we had some breaks during classes, when we could do some physical exercise or manual activities. I think it was a very interesting and amazing way to help students maintaining focus |
| 12. The teacher's availability to answer our questions |
| 13. The questions provided in class help to understand what we really need to focus on in each subject |
| 14. The teacher's attention to the students, that is, the teacher explained everything to us about the course, about how we should study and not to be “afraid” of the subject itself! Also in the classes, she provided us with very funny moments and allowed the students to relax! |
| 15. It was one of the few curricular units that managed to integrate the matter within the scope of the course, that is, the teacher managed to teach biochemistry but in the context of the course without question (Biomedical Sciences), putting aside, for example, the mechanisms chemicals. In this way, in my opinion, it has become a very pleasant curricular unit that motivates me to study. Another relevant positive aspect is the moment of the 1st evaluation, as the questions were appropriate as well as their difficulty. If the same happens the second time, without a doubt this UC was one of the best I've had |
| 16. The way in which the teacher streamlined the classes (face-to-face) making them more interesting and facilitating learning |
| 17. Development of teamwork capacity |
| 18. Regarding face-to-face classes, I consider that the playful moment is very pleasant and valuable for the functioning of the class. The existence of this moment of pause allows you to rest for a few minutes, "forget" the subject of the discipline and greatly increases the desire to attend the class. In addition, it allows establishing a greater relationship with colleagues and with the teacher |
| 19. I think that the interactive method of teaching such a specific subject, in which it is difficult for some people to visualize the mechanisms taking place |
| 20. Something very important for my understanding of the subject as a whole, very valid for learning |
| 21. Pilates activity |
| 22. The applied subject is really interesting. The teacher is very consistent and competent, I really like the face-to-face classes |
| 23. I like the way how the teacher leading and guiding the students throughout the distance learning process. Making an audio class is super helpful, because we can access it and listen to the explanation whenever we need to. And the speed of taking the act upon the regarding matter for the best of her students. |
| 24. Recorded classes, as they facilitate study and can be accessed whenever doubts arise |
| 25. The group discussion, helped me to clarify some doubts |
| 26. A curricular unit designed differently. It allows us to maintain interest in the subject and in the classes with quizzes in groups, as well as activities during classes. Regardless of this new methodology, the curricular unit's objectives continue to be achieved. |
| 27. The audios were very well developed and explicit |
| 28. Dynamic classes |
| 29. The positive aspects that stand out from the BI classes are the clarity in the transmission of the contents covered by the teacher and the innovation in the introduction of moments of relaxation |
| 30. The entire learning method adopted in face-to-face mode, as it allows student-student interaction to discuss questions about the contents taught and to allow a period of carrying out recreational activities, contributed to arouse my liking for the subject ( despite the fact that, at the beginning of the semester, I was apprehensive about the subject and somewhat unmotivated to learn the contents) and it also made me learn much more and better in 3 hours than I would probably learn if the class was taught using the traditional teaching method |
| 31. Videos with teacher audio |
| 32. Alternative way of giving classes that, in my opinion, works better than just theoretical classes where the teacher only debit the material |
| 33. Teaching was not heavy or tiring |
| 34. It's a dynamic and fun way to learn. Usually, I can't stand being in a 3h class, I get tired, unfocused. With this method I feel like I took my time. I really like the activities we did in between |
| 35. The exercise break was something new and different that had positive consequences in increasing our motivation to be attentive and focused in class |
| 36. Different classes, which surprised |
| 37. I liked the teacher's new TBL + space learning method. I thought it was an innovative and unusual approach |
| 38. Dynamic, fun and enriching classes |
| 39. BI classes were the longest classes of my schedule (3 hours non-stop), the earliest (9 am) and on a Friday. However, it was the class I looked forward to most. It was fun, innovative and kept me eager to learn |
| 40. The BI class mode facilitates individual study and allows for constant and much more dynamic monitoring of the contents explored |
| 41. The constant presence of the teacher in the doubts forum, clarifying them quickly |
| 42. It is a very dynamic class, in which the teacher makes us feel more comfortable both to clarify doubts and to be able to discuss them in a healthy way. The teaching method, despite being completely different from that of the other subjects, I feel is the most effective because the short periods of relaxation during the classes allow the remaining class time to be used with greater concentration. In addition, I feel that the audio classes that the teacher published were an asset to help with the study, and even if there are face-to-face classes, I think it would be good for the teacher to continue to publish these audios |
| 43. The teacher explains very well and as often as necessary, she is clear and explicit in her words and allows us to learn even the most complicated things more easily |
| 44. Learning on a larger scale, with more opinions |
| 45. The fact that classes with the TBL method were not heavy in terms of the content covered allowed us to become mentally tired, contrary to what happens in other subjects where new material is introduced in a very extensive way and we end up losing concentration |
| 46. The video slides provided were very useful |
| 47. Essentially, the constant availability of the teacher to clarify doubts |
| 48. Breaks during class were extremely productive and made me concentrate more when I got back |
| 49. Relaxed classes and very approachable teacher |
| 50. The video lessons helped a lot and were very enlightening |
| 51. The activity done in the class was useful to increase concentration during the rest of the class, allowing for a better understanding of the information |
| 52. The teaching method based on TBL is very interesting and I think it works quite well |
| **Distance classes** |
| 53. The video lessons always helped a lot in directing the study and even clearing up doubts, they always brought a more "normal" character to distance learning |
| 54. In relation to distance learning, the PowerPoints with the additional audios in the study were very helpful, which allowed us to understand which aspects are most important to take into account and which also functioned as a clear way of explaining / summarizing the subject. In addition, the teacher was always ready to help and clarify doubts, and her "absence" was not felt during this form of teaching |
| 55. In relation to the non-face-to-face classes, it was even the video classes in terms of attendance and the dynamics of the classes. |
| 56. I really liked the audios made available by the teacher, at this time of the pandemic! |
| 57. Excellent support and follow-up from the teacher during this period of distance learning. The pdf's with audio were an excellent solution for understanding the classes |
| 58. The asynchronous method with recorded videos available at any time allows the class to be reviewed as many times as necessary, which does not happen with other courses that opt for the video call method that cannot be recorded. |
| 59. Although I really enjoyed the face-to-face TBL and Spaced Learning format, I must admit that, personally, the online classes were much more fruitful for me! The fact that we can rewind the teacher's audio and pause the video whenever we want, allows us to better consolidate what we are learning! The questionnaires about each class were always very useful too! |
| 60. As the classes took place asynchronously, it allowed watching the video classes provided by the teacher several times, which helped in understanding the subject when there were problems with the Internet |
| 61. Availability of material and answers to questions during the distance learning period |
| 62. The structuring of the material taught facilitated the understanding of all the topics covered. Questionnaires and video lessons are the best form of distance learning, especially due to the existence of the doubt forum |
| 63. A positive aspect was the audio that the teacher made available during distance learning and her availability to answer questions |

**Negative commentaries from students**

Qualitative data from the pilot project, including the students’ negative feedback about the face-to-face and distance classes of **Team‑based learning and Spaced learning** strategy in the Integrative Biochemistry Curriculum

|  |
| --- |
| **Face-to-face classes** |
| 1. The amount of material that was necessary to study from one class to the next |
| 2. BI classes could be divided in 2 classes per week. 1,5h each. Maybe one class for theoretical knowledge and one class for group/individual assessment |
| 3. The explanation of the subject during the TBL and Space Learning approach by the teacher was often insufficient |
| 4. Dealing with people who are not so close |
| 5. I felt that the TBL method was not formatted well. I really think that breaks are very important to relax a little and, therefore, I thought it was a good idea to introduce small activities in class. However, the class itself was not very productive and we ended up not learning any new content. In my opinion, an approach should be taken that mixes the traditional teaching method and TBL, that is, presenting the subject in the traditional way and continuing with such activities. Regarding the mini-tests, I think that carrying out both of them at the beginning of the class ends up wasting a lot of time that could be better used if we had the class in the traditional way. In addition, I think it would be sufficient to carry out just one mini-test |
| 6. Personally, I prefer lectures over the TBL and Spaced Learning method, I find that I learn better by listening and I feel more oriented in studying that way |
| 7. Some activities took longer than expected |
| 8. Quite complex matter that sometimes would require a better explanation in class, compared to face-to-face classes |
| 9. Not all classes have associated videos. This made the concepts not so easy to learn, understand and even study |
| 10. The activities took a lot of time of the class, as well as the beginning that consisted of the multiple-choice questions |
| 11. Despite the TBL providing us with a better learning capacity, the curricular unit turned out to be more work |
| **Distance classes** |
| 12. Distance study in general, often not knowing how far it was necessary to deepen the subject |
| 13. I would say that if you are going to continue taking online classes, it would be good if all the power-points were accompanied by a video lesson because even if some cover a subject that is not very extensive, it becomes a study complement and is good for consolidating knowledge |

**Clusters of Strengths**

Qualitative data from the full project used to perform the content analysis. These data include the students, teacher and peers feedback towards **Team‑based learning and Spaced learning** strategy in the Integrative Biochemistry Curriculum

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Descriptor** | **Frequency** | **Clusters** | **Frequency** | **Examples** | **stage** | **instrument** |
| **1.1 Teacher in charge** | 54 | Initiative by students to ask questions and expose problems | 4 | "A student asked in the private chat to talk to me, he was very anxious about his studies. I was talking to him for more than 10 min trying to calm him down... I was glad he had enough confidence to open up to me with his problems” | 2,2 | Development of the curricular unit |
| “All students stayed until the end, many questions were raised. I asked if they wanted me to make 1 hour available for questions in the extra-class zoom. They were happy and said yes” | 2,2 | Programming of the curricular unit |
| "Several students shared their screen with their questions" | 2,2 | Development of the curricular unit |
| positive perception about the motivational results of spaced learning | 17 | “Everyone seemed to like it, they were smiling" | 2,2 | Programming of the curricular unit |
| “Lurdes, the gym teacher, was responsible for this break, we had a lot of adherence to the exercises performed. I was pleasantly surprised" | 2,2 | Programming of the curricular unit |
| “The class went very well. The spaced-learning part was really good. The students loved it." | 2,2 | Programming of the curricular unit |
| "The spaced learning part is preferred" | 2,2 | Programming of the curricular unit |
| satisfaction and perception of success by the implemented strategies, in view of student feedback | 18 | "In the meantime, I took a break divided into 2 rooms (funk and pop). I went through the rooms, and they were talking. Very interesting. These students barely know each other, and this is a good strategy." | 2,2 | Programming of the curricular unit |
| "At 12:15, I said that I would really finish the class because it was already taking too long. I was satisfied because the students are very involved in the class" | 2,2 | Programming of the curricular unit |
| "First face-to-face class. Everything went well. Very enthusiastic students" | 2,2 | Programming of the curricular unit |
| "First session of COIL with colleagues from Brazil. There were 3 people missing who warned and delivered a video for the presentation to the group. The session went very well, and the groups presented themselves and started working" | 2,2 | Programming of the curricular unit |
| "I asked for feedback from the 2 students who followed the curricular unit planning, and the feedback was very good. I am happy" | 2,2 | Programming of the curricular unit |
| good time management | 6 | "The class went as planned; the schedule managed to be fulfilled" | 2,2 | Programming of the curricular unit |
| "In this class I have already controlled the time so that there are no delays" | 2,2 | Programming of the curricular unit |
| "The spaced learning break was on time" | 2,2 | Programming of the curricular unit |
| involvement and receptivity of students to the proposed challenges | 2 | "Students who helped me in class sent me the list of answers to the question posted at the entrance to the class, I analyzed the questions and put them on the padlet" | 2,2 | Programming of the curricular unit |
| "At the end of the class I talked about COIL's schedule, and they were flexible" | 2,2 | Programming of the curricular unit |
| content teaching | 3 | "The content review part went smoothly" | 2,2 | Programming of the curricular unit |
| "This time they found that the content to study was less intense" | 2,2 | Programming of the curricular unit |
| "Then I finished the class with another theoretical part that I finished this time" | 2,2 | Programming of the curricular unit |
| success in strategies, but with differences between 1st and 3rd year | 2 | "I think the yoga went well, they liked it, but I think the 1st year students liked it more" | 2,2 | Programming of the curricular unit |
| "It seems that the class is already at cruising speed. It seemed to me that the application exercise was easier than the one in the 1st year" | 2,2 | Programming of the curricular unit |
| importance of collaborative work | 2 | "In groups, students work very well" | 2,2 | Programming of the curricular unit |
| "They are working well on the project" | 2,2 | Programming of the curricular unit |
| **1.2 Students** | 156 | Prior contact with active methodologies such as TBL and flipped classroom | 7 | "We have a lot of contact especially with PBL (Problem based learning), but also with Team based learning and the other term I didn't recognize, but I think that the flipped classroom has been an active learning mode with which we have been in contact" | 2,1 | FG1 |
| "We are forgetting that we had Team based learning and Problem based learning in basically all subjects. Even in TSMR there were also some classes where we were given problems to solve in random groups and then solve with the whole class as a team" | 2,1 | FG1 |
| General positive feedback on class dynamics and teacher's attitude | 27 | "Some colleagues were positively surprised by the amount of work that went into the curricular unit, and with its organization and complexity, and I even had a colleague tell me that she enjoyed being involved in the project" | 2,1 | FG1 |
| "The feedback we received, as Maria said, was very positive people were very impressed with you and really enjoyed the class" | 2,2 | Programming of the curricular unit |
| "It was the curricular unit that couldn't hurt to have." | 2,3 | Final questionnaire |
| "TBL and spaced learning made classes more dynamic and provided more autonomy." | 2,3 | Final questionnaire |
| "The dynamics of the classes, the fact that they are not monotonous" | 2,3 | Final questionnaire |
| "Very good source materials and a professor deeply focused on our education, skills and even our lives" | 2,3 | Final questionnaire |
| "The dynamics of the classes were quite appealing. Personally, I was more interested in Biochemistry classes than in any other discipline, thanks to the involvement between colleagues and professor" | 2,3 | Final questionnaire |
| "The classes were always dynamic and creative and with several objectives for 3 hours, and therefore, more attractive and it was easier to learn the contents." | 2,3 | Final questionnaire |
| "The classes allowed us to participate which helped a lot in solidifying concepts and kept us interested" | 2,3 | Final questionnaire |
| "Constant feedback from the teacher" | 2,3 | Final questionnaire |
| "Innovative methodologies" | 2,3 | Final questionnaire |
| "It was one of the first classes I've seen in a long time where no one (or almost no one) dropped out halfway through." | 2,2 | Programming of the curricular unit |
| "Oh teacher, but your class is the class where the most people turn on the camera. Without a doubt. In the other classes…" | 2,3 | FG2 |
| positive reactions to TBL and its resources, including evaluation | 51 | "No, I think the questionnaires are pretty good" | 2,3 | FG2 |
| "Integrative Biochemistry was a curricular unit like I had never had before. The dynamics of all the work had a huge impact on the learning process: mainly the fact of keeping the study perfectly up to date. We had everything in hand, all the pages to study were fully organized, our task was just to study according to the instructions. For me it was a perfect method and I got excellent results because I always had the material up to date" | 2,3 | Final questionnaire |
| "The personal questionnaires were important in that they allowed us to assess whether we had acquired the knowledge" (...) "On the other hand, the group questionnaires allowed us to confirm our answers in a more independent way and understand the subject of the correct form" | 2,2 | Programming of the curricular unit |
| "I enjoyed the TBL questionnaires, because they helped me clear up any doubts I had, while studying alone" | 2,3 | Final questionnaire |
| "The individual and group questionnaires encourage us to always have the matter in order and studied, and keep our attention active while we are interacting with each other" | 2,2 | Programming of the curricular unit |
| "The application exercises and the questionnaire were great to take note of what I need to review later in the study. It was great to be able to discuss the material taught with my colleagues and realize what I had misunderstood" | 2,2 | Programming of the curricular unit |
| "The seminar clarified the important points of the class" | 2,2 | Programming of the curricular unit |
| "The existence of questionnaires, both individual and in groups, stimulated autonomous study and provided a moment of weekly feedback that contributed to the perception of the matter that needed to be better studied. Also the fact that there are several dynamic moments of learning and application of the matter during the class, instead of a 3h seminar, it helped in the engagement and interest in the contents taught." | 2,3 | Final questionnaire |
| "This curricular unit was the only one, in my academic path so far, with such a diverse and interactive assessment component, which I think is an added value, evident in the final grades, not only in terms of achievement, but also in terms of motivation. Overall, it was a curricular unit that I really liked." | 2,3 | Final questionnaire |
| "A positive point not completely related to the course of the class is the availability of explanatory videos related to the subject. I think that everyone felt quite enlightened in relation to the subject that was explained on video" | 2,3 | FG2 |
| positive reactions to COIL | 11 | "So, if I understood correctly, it was, for example, us contacting different people even from different places. I think that in terms of advantages it would allow us to know other approaches, other ways of working. If they are from different universities, I think it would be beneficial at that point " | 2,1 | FG1 |
| "I think it is relevant, even professors from another area because generally, even outside the scientific area, for us to explore other working methods or even for them to help us with imagine that we are given a problem and we are not managing to manage it the problem or managing the solution to the problem, sometimes there are other areas that manage to teach more efficient methods in this regard. And so, I think that was quite relevant" | 2,1 | FG1 |
| "I liked it, I think we... a bit like the students, we are a small department, we know a lot of the same professors, the same points of view. For me, foreign students, foreign professors, if it goes well, everything is fine received. And if it doesn't go so well, at least it's a learning experience that we wouldn't have otherwise." | 2,1 | FG1 |
| "Regarding the feedback from Coil, I think the first class went quite well. I really liked the way both teacher Eric and the teacher explained the evaluation parameters and the most important dates of the project, and I also liked the space we were given to familiarize ourselves with our colleagues" | 2,2 | Programming of the curricular unit |
| positive feedback to spaced learning | 41 | "But I even, you know, I found the adherence we had shocking because people are really doing Spaced Learning from what I have seen at least" | 2,3 | FG2 |
| "I see the teacher doing it, I'm always watching the teacher doing it" | 2,3 | FG2 |
| "It allows the students to be able to have several moments of concentration. The guest left us very comfortable and in a good mood" | 2,2 | Programming of the curricular unit |
| "Spaced learning was very useful and necessary for people's enjoyment and relaxation and I must confess that it was sorely missed on the test day" | 2,2 | Programming of the curricular unit |
| "The breaks help to clear our heads a little so that we can get back to focusing on the class, which is why it's a positive point. Despite the class lasting 3 hours, we didn't get to the end of it with our heads exhausted" | 2,2 | Programming of the curricular unit |
| "I thought yoga was an amazing idea, it's a sport that I personally like a lot, so I was pleased to find out that we were going to do it during the break. It was very relaxing (so relaxing that I fell asleep a bit, I confess), and left me an empty head so that we can later hear the teacher's explanation about glycolysis. I think it worked very well, not least because the focus was kept practically in its entirety until the end of the teacher's presentation" | 2,2 | Programming of the curricular unit |
| "In the first break, I think the creation of two rooms was beneficial, in which it was pleasant to have music since it created a relaxed atmosphere to the point of talking a little between us (there were even those who showed their cats)" | 2,2 | Programming of the curricular unit |
| "The desk yoga and music were things I think everyone enjoyed, and the timing of the breaks was perfect" | 2,3 | FG2 |
| positive reactions to group work and respective autonomy | 6 | "As for the working groups, the randomness is never perfect. I am very happy with my group, I know of more unfortunate combinations, but nothing serious, the groups seem to me to be very balanced and all functional" | 2,3 | FG2 |
| "Everything positive in this regard, I think it's working quite well! And I think that teamwork is also very good, and it pays off more than spending 3 hours listening to the teacher describing contents" | 2,2 | Programming of the curricular unit |
| "I like the fact that we have a lot of group activities, as we have to expose our knowledge to the group and, as two (or more) heads are better than one, we learn from each other" | 2,2 | Programming of the curricular unit |
| importance of the environment created to encourage the clarification of doubts | 6 | "In short, the operation worked very well, and everyone was very grateful with all the doubt classes that the teacher taught" | 2,2 | Programming of the curricular unit |
| "Another aspect worth noting is the way in which the teacher clarifies our doubts. It helps us to think for ourselves but does not fail to give us a tip or ask more questions to be sure that the subject is well known, and we are confident of our knowledge. Coming to the university at 9 am on a Friday when we could already be home, at the outset it could be a waste of time. But as soon as we enter the amphitheatre, what I feel is that more than a class it is a space for to learn, almost like a study room." | 2,3 | Final questionnaire |
| "The good atmosphere between colleagues and between students and teacher, which allows for the creation of the necessary environment for learning and the willingness to clarify doubts. In addition, it allows the class not to be heavy and there are moments to relax and socialize but also for us to learn." | 2,3 | Final questionnaire |
| "The class time set aside for the project was important and enlightening" | 2,2 | Programming of the curricular unit |
| perception of the development of skills such as autonomy and time management | 5 | "It allowed me to develop more individual learning skills (and to understand what was wrong/right with my study methods). I also developed group work and organization skills" | 2,3 | Final questionnaire |
| "It was an interesting course. I loved the project and the groups. It helps us learn how to work as a team" | 2,3 | Final questionnaire |
| "It allowed me to have weekly study goals to keep my study up to date and the TBL teaching method allowed me to fix certain more complicated concepts more clearly while trying to create simpler ways to convey them" | 2,3 | Final questionnaire |
| "The development of group work capabilities and soft skills" | 2,3 | Final questionnaire |
| "Online classes helped me managing time." | 2,3 | Final questionnaire |
| positive feedback to the logo and website | 2 | "Yes, of course, but from what it looks like now, at least I like it" | 2,3 | FG2 |
| "I think the image fits what the project is about. It's about studying and learning" | 2,3 | FG2 |
| **1.3 Peers (teaching colleagues)** | 16 | well-structured classes | 2 | "The well thought out and firm (yet flexible) structure of the class, which ends up giving structure to the students (it becomes simple to know where we are and where we are going, let's put it that way)" | 2,2 | Programming of the curricular unit |
| "Organization of the class in clearly defined moments (phases), of which the students already had prior knowledge, in order to vary work rhythms and different types of participation. It can be deduced that there is a work scheme that is repeated in the various classes/sessions, which has already been completely internalized by the students and to which they have adapted" | 2,2 | Programming of the curricular unit |
| use of the flipped classroom strategy as appropriate for student engagement | 1 | "Not only the fact that you start the class with the questioning strategy, but the fact that this presupposes that your students have been prepared. This is phenomenal! It is already clear to them that the class is "given" by all of you, not just for you, and that implies that they prepare themselves to be able to participate in "giving" the class" | 2,2 | Programming of the curricular unit |
| close environment provided by the commitment of the teacher and quick and frequent clarification of doubts and feedback to students | 5 | "The fact that you give feedback so close to the students' "performance". In addition, your feedback in 24 hours on the Padlet and your 2nd grade doubt class must be highly valued by your students... and not only that: you can see that you are "involved/committed", there is such a close, light and healthy interrelationship... What a good environment..." | 2,2 | Programming of the curricular unit |
| "Constant feedback from the teacher regarding student contributions, close monitoring of students' work and the teacher's visible concern with their learning" |  | Programming of the curricular unit |
| "End the class with a content review, with time for questions and clarification of doubts" | 2,2 | Programming of the curricular unit |
| "Your analysis of responses to the questionnaire individually and in groups, giving space and encouragement for students to "step forward" and explain why they got it wrong. (And there were students stepping forward! Another indicator of the classroom environment built.)" | 2,2 | Programming of the curricular unit |
| "In general, I really liked it. You must have a lot of work to prepare and follow/monitor everything, but it shows to all of us (more importantly, to your students) that you are there with immense pleasure and that you are involved in their learning, and that they are all learning together, they and you." | 2,2 | Programming of the curricular unit |
| good implementation of the TBL strategy | 3 | "TEAM-BASED LEARNING: I hadn't seen TBL in action yet and I had my doubts about so much assessment in a single module/class. But, in fact, I don't think you feel that assessment pressure; you feel that it's for assessment, but as everything is done in teams and as you manage the dynamics without giving it too much importance, I felt that it works well and that it creates a bit of a game/playful/gamification atmosphere there, in a positive and proactive logic." | 2,2 | Programming of the curricular unit |
| "The added value of opting for the Team Based Learning or Flipped classroom strategy, stimulating students' autonomous work and transforming classes into spaces for discussion and the construction of knowledge in a collaborative way" | 2,2 | Programming of the curricular unit |
| "A remarkable variety of activities and didactic strategies used during the session, which included a mini-test, group work, oral presentation by the teacher, clarification of doubts, moments of informal dialogue and even physical exercise, creating a stimulating and productive pace of work " | 2,2 | Programming of the curricular unit |
| student involvement | 2 | "Students' involvement in the assessment decision-making process. (As we know, this favors students' motivation and involvement.)" | 2,2 | Programming of the curricular unit |
| "Students' punctuality and the large number of cameras connected throughout the session, informality and proximity in the teacher/student relationship" | 2,2 | Programming of the curricular unit |
| appreciation of the teacher's reflective attitude | 1 | "The fact that you can collect information in the focus groups should also be very useful" | 2,2 | Programming of the curricular unit |
| importance of spaced learning moments and the various activities implemented | 2 | "The idea of breaks just for them, with 4 different break possibilities, proposed by the students themselves. (Spectacularly simple and effective to try to feed the sense of class and group.)" | 2,2 | Programming of the curricular unit |
| "SPACED LEARNING: I loved it! And it does what is needed (pause that has nothing to do with the topic, involved physical exercise, it was fun!)" | 2,2 | Programming of the curricular unit |

**Clusters of Weaknesses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Descriptor** | **Frequency** | **Clusters** | **Frequency** | **Examples** | **stage** | **instrument** |
| **1.1 Teacher in charge** | 25 | level of effort and commitment by the teacher needed to implement | 5 | "The class was very hard for me. I was always connected to the class for 3 hours, I never lost focus. Despite being a repeated class, the students were new and therefore, I didn't know how they were going to react, and I was still anxious because I wanted everything to go as close as possible to the plan" | 2,2 | Programming of the curricular unit |
| "I went through the groups; many groups called me to clear up questions. This time the idea was for them to understand how the class should go. There were delays in this 30-minute part of the class, which delayed the rest of the class." | 2,2 | Programming of the curricular unit |
| "It takes a lot of work to prepare for class and even more work to correct all the work after class and support students" | 2,2 | Programming of the curricular unit |
| “Prior preparation was very poor. Leaving them 3 weeks alone was not a good idea” | 2,2 | Programming of the curricular unit |
| too much time and dedication of the teacher during the week | 3 | "Students who helped me in class sent me the list of answers to the question posted at the entrance to the class and as I didn't have time to give feedback in class, I analyzed the questions and put them on the padlet" | 2,2 | Programming of the curricular unit |
|  | 2,2 | Programming of the curricular unit |
|  | 2,2 | Programming of the curricular unit |
| different preparation between students either prior to or during the semester | 11 | “They had studied little, they had exams that week” | 2,2 | Programming of the curricular unit |
| “I notice that they are not so prepared for the IQ because they make more mistakes. It seems that they are tired and randomly answer to the questions” | 2,2 | Programming of the curricular unit |
| “Class went well; again, preparation before class is not the best” | 2,2 | Programming of the curricular unit |
| “I asked the students who had a negative evaluation to stay at the end to talk to me to understand the reason for the grade, some admitted not having studied others, grades above 8 said they had studied but had difficulty” | 2,2 | Programming of the curricular unit |
| "Then I finished the class with one more theoretical part that I couldn't finish. These students have no background in this subject, and I had to explain more slowly" | 2,2 | Programming of the curricular unit |
| “After correcting I saw that some groups found the resolution of the exercise others did not” | 2,2 | Programming of the curricular unit |
| the motivation that leads students to participate needs to be acquired | 2 | "The spaced learning part with Lurdes went well, but some students don't seem to participate" | 2,2 | Programming of the curricular unit |
| physical space conditions | 2 | “The room is too small” | 2,2 | Programming of the curricular unit |
| “First face-to-face class. The management of the small room is difficult. All groups worked in the room” | 2,2 | Programming of the curricular unit |
| the teacher's effort to maintain the expected times in each activity is great and requires experience | 2 | "There were some delays the spaced learning interval was a little later" | 2,2 | Programming of the curricular unit |
| “The application exercise took longer” | 2,2 | Programming of the curricular unit |
| "The content review part was the part that suffered from the delays" | 2,2 | Programming of the curricular unit |
| **1.2 Students** | 97/88 | high workload and laborious content and other reflections on content, little study at home | 51 | “It just happens that there is overlap in several subjects sometimes, which has happened to us in past semesters and with this type of learning the workload tends to be greater so sometimes it can cause some difficulties for the student” | 2,1 | FG1 |
| “One of the points that many people pointed out and that was already mentioned in the last class was the fact that the subject was very dense, also due to the fact that we didn't have much time to study” | 2,1 | FG1 |
| “Amount of work per week” | 2,3 | Final questionnaire |
| “The questionnaire was accessible; however, a very large difference was noted between the individual questionnaire and the group questionnaire, which demonstrates the lack of study regarding the topic being addressed” | 2,1 | FG1 |
| “It's just like that, you're a person who is comfortable with these things. For example, I have a bad memory and I get confused a lot with syllables and these enzymes and things, I’m really have difficulties. For me to distinguish 3 of the words from the power point of glycolysis it takes me almost 1 week to repeat them. So, thinking from the perspective of someone from the 1st year who maybe never heard of this, and I don't know what, but they already talk about it. It costs a little, it's costing me a little, but I think it's working. In the group questionnaires and so I have noticed everything that is said and so on. But I don't know if it's that easy for those who don't have it easy | 2,1 | FG1 |
| Group work problems | 8 | “I think that, on the other hand, it was a bit disadvantageous in terms of group formation. When they are students, there is always the disadvantage of staying with whom, how well the group will work, there is always this problem of management and combining people. There are people who adapt easily, others who are shocked” | 2,1 | FG1 |
| “O que estou a dizer é dificuldades em trabalhar” | 2,1 | FG1 |
| “Then there is always that disadvantage of: I don't really know this person from anywhere, I don't know how he works or how he stops working, nor if I can, for example, squeeze with the person to have a certain goal? or etc.” | 2,1 | FG1 |
| “During the work on the project that took place during the classes there was not much organization which resulted in some loss of time” | 2,3 | Final questionnaire |
|  |  |  |
| “I think it's more, for example in terms of personality, there are people who can't work in a group. I think that's it” | 2,1 | FG1 |
| Students recognize that they complain about everything | 2 | “Yeah, we already know a little bit what to expect. Sometimes we are already complaining” | 2,1 | FG1 |
| "The negative aspects, although nothing serious, I think were the fact that there was some repetition of material (but I want to make it clear that, for many, it was forgotten material, and I think it is more a desire to complain than a problem)” | 2,1 | FG1 |
| class organization, extensive class, little time to address content, … | 11 | “Finally, it was felt a little difficult to understand what was asked of us and we ended up having to finish after class” | 2,1 | FG1 |
| “The face-to-face format was a little strange and a little confusing, but I think it was just a habit of the online format and that with time this point will be improved” | 2,1 | FG1 |
| “As for negative points, the only thing I have to say would be related to the length of the class, since 3 hours becomes tiring” | 2,1 | FG1 |
| “A negative point that can be pointed out is the fact that the class exceeded the scheduled time, but I think that the extra class time for the students was beneficial” | 2,1 | FG1 |
| teacher/student conflict | 1 | “I have a question to point out that may be a little more sensitive... the teacher, sometimes, shows a little irritation towards Carolina, and I understand, because, in fact, she participates a lot, but she has already expressed to me that she feels doing poorly in biochemistry classes, despite trying really hard, and then ends up harming our group work, because she gets really frustrated” | 2,1 | FG1 |
| evaluation-related issues | 2 | “Some group members did no work and got the same grade as the hard-workers in the final evaluation” |  |  |
| “Members of my group, however, expressed concerns that the next few would count towards the grade” | 2,1 | FG1 |
| physical conditions | 6 | “The biggest negative point I think was the room capacity” | 2,1 | FG1 |
| “When we moved to face-to-face contact in the group was more complicated due to the noise and we no longer had the part of the class where the teacher explained the material, which was also an important part to better understand some points” | 2,3 | Final questionnaire |
| “No adequate infrastructure for in-person classes made the classroom noisy, cluttered and messy, which made it difficult to assimilate the course materials” | 2,3 | Final questionnaire |
| “A negative point was the fact that the teacher at the back of the amphitheatre could not be heard very well, she suggested maybe speaking louder, I don't know” | 2,1 | FG1 |
| Spaced learning - initial adherence problems; organization or other | 7 | “Teacher, I think that some people also turn off the camera because they don't want to be seen making “sad” figures, I don't know it's not sad, but that's it. There's no harm done, but basically some get embarrassed, so they turn off the camera. I don't think it's synonymous with not doing it” | 2,1 | FG1 |
| “Perhaps the portion of spaced-learning on time management, which some colleagues thought made sense for the first year, but which for us no longer” | 2,3 | Final questionnaire |
| That was it, in our year I think not that many people don't do it, at least no one tells me “ah, I didn't do it”. Or if you say it's 1 or 2 who never do anything and have the camera off. But not many in our year have the camera turned off in that part, are they?” | 2,1 | FG1 |
| “In the 1st year there are people who don't do it, I'm sure of that. But I think it's more because it's online now, if we go face-to-face next week, I think the teacher will have more adherence, there will be that pressure that the teacher sees that they are not doing it, so they will do it” | 2,3 | FG2 |
| **1.3 Peers (teaching colleagues)** | 0 |  |  |  |  |  |

**Clusters of Suggestions**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Descriptor** | **Frequency** | **Clusters** | **Frequency** | **Examples** | **stage** | **instrument** |
| **1.1 Teacher in charge** | 18 | About alterations to be proposed next year | 1 | "Perhaps in the 1st year prepare projects to submit to BQ congress in October and participate in the congress; decide projects 1 year" | 2,2 | Development of the curricular unit |
|  |  |  |
| Improvement alterations decisions, new proposals throughout the semester | 7 | “Pay attention to the class time to allow me to do everything I plan” | 2,2 | Programming of the curricular unit |
| “However, in the case of the 3rd year, the students had already addressed the topic. Despite this, parts of the matter I explained in another way and in more detail” | 2,2 | Programming of the curricular unit |
| “Meanwhile I put the music on, but it was not heard. Need to improve this issue” | 2,2 | Programming of the curricular unit |
| “The class with the 3rd year is always faster. In the next class I will do an IQ and QG different from the 1st year” | 2,2 | Programming of the curricular unit |
| “I'll have to create a time of the week to ask questions maybe” | 2,2 | Programming of the curricular unit |
| Requests/changes requested by students throughout the semester regarding assessment/classes, etc. | 3 | "They asked to change T2 from the 18th to the 11th of June” | 2,2 | Development of the curricular unit |
| "There was a class to review contents for the test on day 23.4. ~30 students were present. They asked me if they could record the question session. I said yes. I asked Renato to record it. He recorded it, shared it with his colleagues and sent me the link so I could put it on the padlet” | 2,2 | Development of the curricular unit |
| Classroom management | 3 | “I pointed out to these students that they had never participated in the doubt classes and asked them to start doing so and offered to help them if they wanted to” | 2,2 | Development of the curricular unit |
| “Talk to Carolina to ask her not to always participate” | 2,2 | Programming of the curricular unit |
| decisions taken together with students from the focus group regarding the curricular unit | 2 | "Focus group meeting - 1. Show web site - 2. How are the classes going spaced learning - 3. How are the classes going - 4. Show map me - 5. Show coil and decide time” | 2,2 | Development of the curricular unit |
| "I will ask for feedback from the 6 students who helped me” | 2,2 | Programming of the curricular unit |
| students offer to help/participate in the various activities | 2 | "identification of students who participated in the organization of the congress mapme - Mariana Soares ([marianaasoares@ua.pt](mailto:marianaasoares@ua.pt)); André Marques ([andremrmarques@ua.pt](mailto:andremrmarques@ua.pt)); Jéssica Cordeiro ([jessicapcordeiro@ua.pt](mailto:jessicapcordeiro@ua.pt)); Beatriz Malhó ([mbeatrizmalho@ua.pt](mailto:mbeatrizmalho@ua.pt))” | 2,2 | Development of the curricular unit |
| " The 1st year students offered to help in the curricular unit: Letícia Morais ([leticiapinheiro@ua.pt](mailto:leticiapinheiro@ua.pt)); Sara Laranjeira ([saralaranjeira@ua.pt](mailto:saralaranjeira@ua.pt)); Patrícia Morais ([patriciacm@ua.ptInes](mailto:patriciacm@ua.ptInes)); Inês Pinheiro ([ines.pinheiro@ua.pt](mailto:ines.pinheiro@ua.pt)). The 3rd year students offered to help: Filipa Rocha ([filipasarreira@ua.pt](mailto:filipasarreira@ua.pt)); Rafaella Coelho ([rcoelho@ua.pt](mailto:rcoelho@ua.pt))” | 2,2 | Development of the curricular unit |
| **1.2 Students** | 71 | About TBL and its features | 9 | "A suggestion would be to make more videos but about the final chapters, as there are not so many videos" | 2,3 | Final questionnaire |
| “And in terms of TBLs, I don't know if I'm being annoying to other people, but for example something that, the fact that it's random, I know that this is very bad to say and maybe it will give people more work, but for example at lab level this semester the teacher said she was going to select 3 random TBLs. I think that if that's the case, we end up paying more attention to what we do every class because we don't know if that class will be evaluated or not. So if it's random and the teacher gives everyone the grades at the end, it ends up forcing us to have  a work as if all classes were for evaluation, while if the teacher says that this, this and this class are for evaluation, in the others the truth is that we are not going to work what would be expected, but that is just my opinion” | 2,1 | FG1 |
| “However, members of my group expressed concerns about whether the next ones would count towards the grade. However, in my personal opinion, I believe it is a good way to keep students studying steadily throughout the semester” | 2,2 | Programming of the curricular unit |
| "Well, I would suggest maybe the teacher count the group one because I think that there is already enough individual evaluation and I also think that in this way the answers that we are going to give and the awareness that we are going to have of our individual study and our individual response to the form is a little more honest and genuine. I feel that if I can count for evaluation instead of people being focused on seeing what they don't know they're going to be trying to copy from the chapter or each other on WhatsApp etc, especially when it's online” | 2,1 | FG1 |
| About the formation of groups | 5 | "Yes, the issue is whether it's from the course or from outside the course, I think there have to be at least some requirements…. I don't know, bringing together people who work well together or something. I don't know if I'm explaining myself well” | 2,1 | FG1 |
| “Yes, I would like to... because we have a slightly different experience, because as Renato was saying, they still don't know each other very well in group work because there are 90 of them and they don't all know each other, but we in the 3rd year, I even think it would be twice as important to have people from outside because I think everyone feels that when we are assigned a group or we have to make groups that we already know each other and we don't really go evolve in group work as much as we are going to adapt our work with people we already know and are in this group. So, we're about 65 or so, I already know when I'm given a random group: “Ah this person I already know he's going to work late, this person I already know he's going to work well, this person….” Okay, and that's why I think that for us it was even a positive challenge and when I think you notice when people from other courses come, because it usually goes well, it's a new experience. For us, we have already had so much group work, it seems that we have stagnated a little in what it means to learn to work in group work with the same people” | 2,1 | FG1 |
|  | 2,1 | FG1 |
| "But there has to be commitment from all the people involved. It was more in that sense. Commitment to work and control to see if the groups are working and so on” | 2,1 | FG1 |
| About feedback | 7 | "I think something that also worked this semester, because this semester we had at least two subjects that I remember that started with a planning mode and then changed. I think that in addition to the written feedback, which was very good, I think that one thing that helped a lot was that we were in the class with the teacher and the teacher came up to us and said: “do you look tired to me” or “it seems to me that no one is managing to follow the matter, what is going on?” And we, even though sometimes there are some people who exaggerate and ask for too much and want things to be too easy, we end up saying truly what was going on and we managed, talking openly with the teacher in class, without putting ourselves in the place of “are they going to be penalized” which I don't think will ever be the case, that things were so much more  productive. So, I think that in addition to written feedback, open feedback in front of everyone  which is also to have a bit of filter in what is said” | 2,1 | FG1 |
| “Yes, definitely not all classes, because there are always people who will want to change something. I think that when you see those alarm signals, for example, seeing those students who really apply themselves and they are not succeed or they seem to be frustrated, have a conversation with the class, then yes. But all classes, no” | 2,1 | FG1 |
| “It was interesting, but I think it would be based on problems like Francisca at  bit referred to the level that being anonymous I think people sometimes exaggerate a bit. While I think the biggest difference between writing and being in person... yes, there are people who can't talk directly to a teacher and so on, but I think it also brought up relevant and more truthful complaints and not as exaggerated” | 2,1 | FG1 |
| "Perhaps doing regular questionnaires, for example feedback, for the students' opinion, to see what is going well and what is going wrong; what are the advantages and disadvantages of the applied method. I think that's what it's all about. Or maybe create suggestions for them to see that it becomes more efficient...” | 2,1 | FG1 |
| about class management | 39 | “One really cool thing was the teacher giving out healthy recipes. Thus, integrating metabolism into food was a spectacle. I think the teacher should say "snacks to have in class". Since the teacher mentioned it in class when Inês was eating cookies” | 2,3 | FG2 |
| “Without wanting to be too offensive, I don't know if the teacher will take this the wrong way, but for example if the teacher could put the power points a little earlier. Because I'll be honest with you, to see the whole chapter in Lehninger, it takes a bit of work so the truth is that we end up always going to power point and then we go, like, research Lehninger. Even because there are things in Lehninger that are too specific. For example, I started at Lehninger and then I found out about things that weren't even that important and others that I left at that. If the teacher could put it a little earlier because then we always end up leaving it for Wednesday, for the night of Wednesday and Thursday and it's like that a little short notice. I don't know…” | 2,2 | Programming of the curricular unit |
| “I would like more time to be spent on the theoretical part because I don't always understand everything just with the book, the teacher's explanations are more enlightening and I think they are an easier, more interesting and dynamic way of learning the subject, like in the first class. The book sometimes becomes boring after several pages of material” | 2,2 | Programming of the curricular unit |
| “But we could take this idea and start doing it in the breaks, we had already talked about doing something in the breaks other than the songs. Because the songs, people end up…” | 2,3 | FG2 |
| “Decreased workload required” | 2,3 | SGQ-final comment |
| “I don't know, you like the padlet, don't you? Is everything organized. Student: Yes, mainly inserted in the curricular unit page” | 2,1 | FG1 |
| “Did the teacher ask colleagues who are also managing breaks to have the camera on? Maybe that would help…more people” | 2,3 | FG2 |
| Breaks | 3 | “I think the only thing less positive was the duration of the spaced learning interval, which could have been longer. I am not completely serious about this aspect, not least because I know that the subject matter also has to be taught | 2,2 | Programming of the curricular unit |
| “In my point of view, spaced learning was very essential, and I think there should be more sessions of relaxation techniques because they really help a lot in our daily lives” | 2,2 | Programming of the curricular unit |
| “I think they liked it, but maybe music wasn't the best incentive for conversation, because with the noise of the song, people's voices were a little lost (this being online)” | 2,2 | Programming of the curricular unit |
| About participation in the dissemination of the project | 7 | “Yes, I am completely available in terms of communication. In terms of writing, I am also available, but it's not that I have a lot of experience, so I don't know what I can help” | 2,1 | FG1 |
| About evaluation in general | 1 | "Just one other thing before that, do you agree with the percentage of tests? Or do you want less? Student: “I agree” “I also think it's suitable”” | 2,1 | FG1 |
|  |  |  |
| **1.3 Peers (teaching colleagues)** | 0 |  | 1 |  |  |  |
|  | 1 |  | 2,2 | Programming of the curricular unit |
|  | 1 |  |  |  |
|  | 1 |  |  |  |