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Lights & Shadows

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1. Introduction

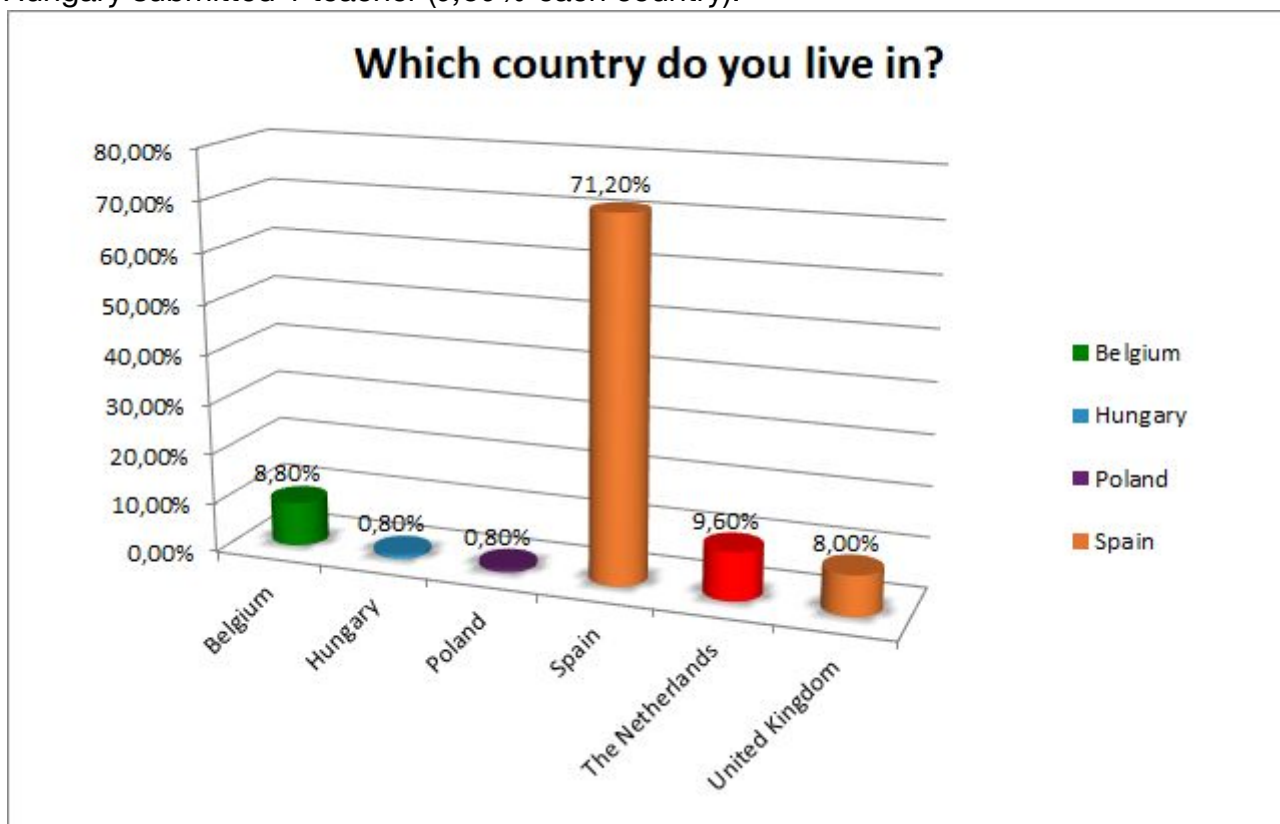
In the final part of this project, the partners have made pilots for students and teachers. In the final part of these pilots we have included a satisfaction survey about the concept of Flipped Classroom and their feeling about the project through questions covering several concepts, including a final part where the teacher or student could add questions or suggestions. With this answered surveys, we have made this document covering the "good and bad things" (Lights and Shadows) of the Flipped Learning method.

2. Teachers pilot

2.1. General data of teachers

Which country do you live in?

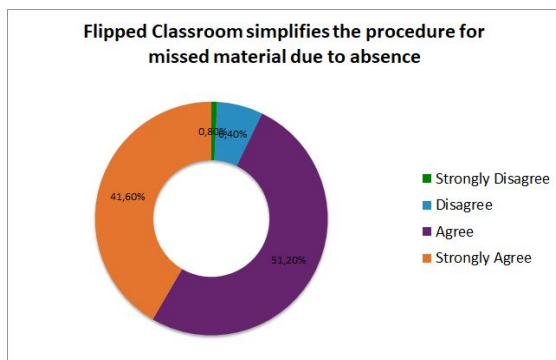
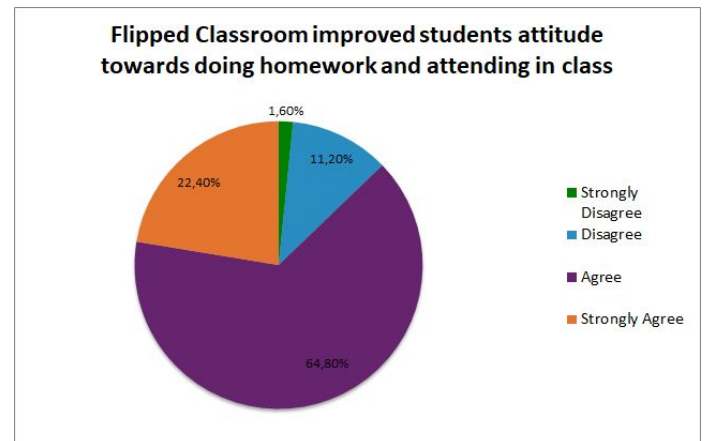
Most of the answers have been from Spain (71,20%), 89 teachers. With The Netherlands (9,60%, 12 teachers), Belgium (8,80%, 11 teachers) and UK (8,00%, 10 teachers), these 4 countries have more than the 98% of the teachers, a total of 122. Both Poland and Hungary submitted 1 teacher (0,80% each country).



2.2. Teachers satisfaction

Flipped Classroom improved students attitude towards doing homework and attending in class.

87,20% of the teachers agree with this statement, but only 34,57% of the teachers that agree with this, answered “Strongly agree”.

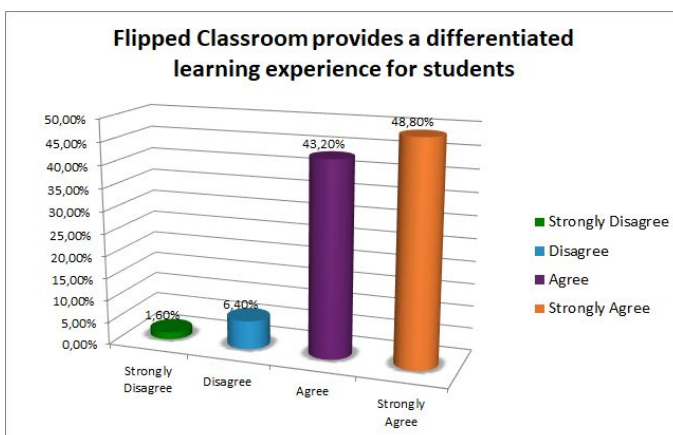
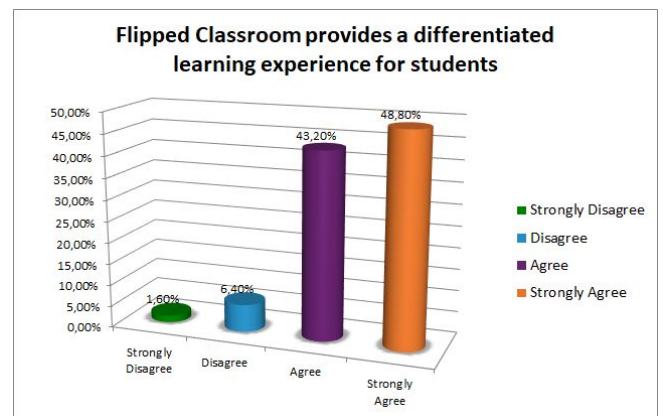


Flipped Classroom simplifies the procedure for missed material due to absence.

Only 9 of the 125 teachers don't agree with this statement. 51,20% of the answers agree with this and 41,60% strongly agree with this idea. In Spain, only 6 of 89 teachers disagree, making this question the less disagreed by Spanish teachers. In Belgium, nobody disagrees this, having a 100% of agreement.

Flipped Classroom provides a differentiated learning experience for students.

8,00% of the teachers disagree with this. In the “Multiple Intelligences” course, this is the less disagreed question, with only 6 “Disagree” answers.



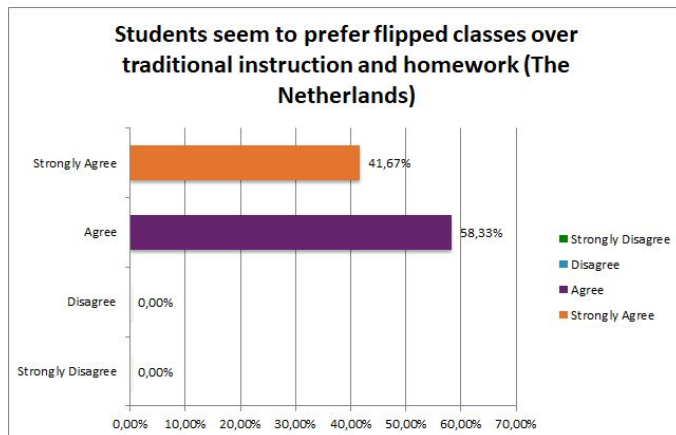
Students seem to prefer flipped classes over traditional instruction and homework.

13 teachers disagree with this statement. This question is one of the less disagreed with by the teachers. In

Spain, more than a half of the teachers (50,56%) strongly agree with this. In Belgium, only 27,27% of the answers were of a Strongly agree nature.

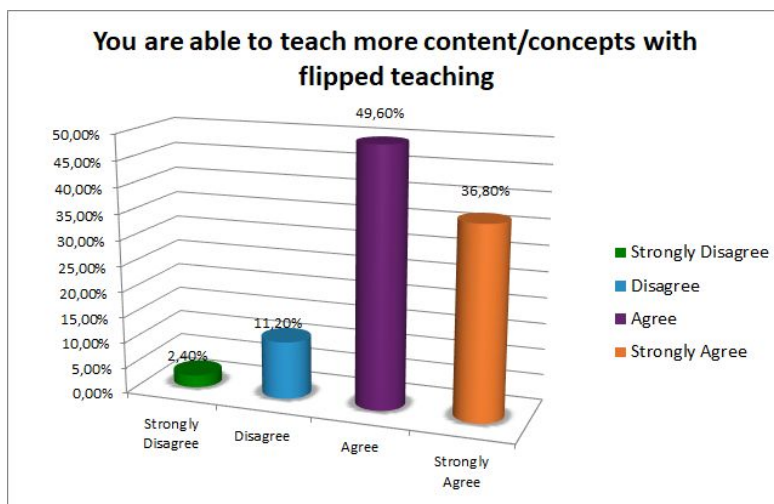
Your students' overall engagement and grades will improve after flipped classes

Contrasting the the question above, 25 of the 125 teachers disagreed with this statement. 15 of the 25 disagreeing answers are from the “Multiple Intelligences” course. In The Netherlands, nobody has disagreed this question.



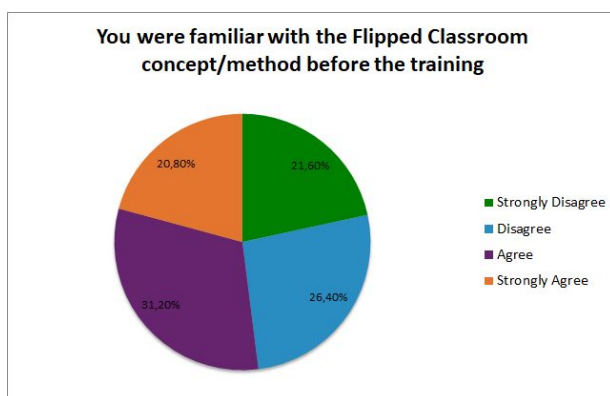
You are able to teach more content/concepts with flipped teaching

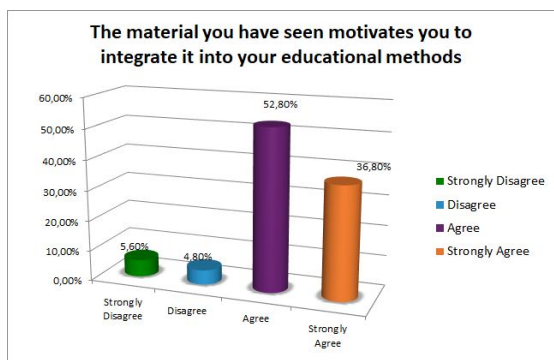
86,40% of the teachers agree with this. 42.59% of the teachers that agree with this, answered “Strongly agree”.



You were familiar with the Flipped Classroom concept/method before the training.

60 of the 125 teachers disagree with this statement. 48.00% of the teachers were not familiar with the Flipped Classroom concept. In Spain, more than a half of the teachers (53,93%) disagree with this statement. In The Netherlands, this is the only disagreed question, with 25,00% of disagreement.





The material you have seen motivates you to integrate it into your educational methods

36,80% of the teachers strongly agree with this. Next, 52,80% agree with the statement. The remaining 10,40% disagree and strongly disagree with this idea. Only 4 of the 46 answers in the Multiple Intelligences course were of a disagreed nature.

Regarding teacher questionnaires, the positive feeling about the *Flipped Classroom* proposal predominated, although proposals and doubts have been raised that show that this is not a perfect method. Before applying it, it must be taken into account certain issues that are not been think of at first, even if they are of high preference.

Regarding the general satisfaction at the time of contemplating if the teaching staff would apply this method in their classes, there are varied answers. Some teachers have taken a positive view of *Flipped Teaching*. Others, however, for various reasons, have decided not to flip their class.

Some answers have defined traditional teaching as "very flat", and suggest that the use of technology can make students feel an important part of the educational process, increasing their motivation and participation. Dosing technology can encourage students to learn more actively.

A Spanish teacher indicates for example: "*When learning the lesson at home, it helps the students to be more motivated in class and come with a desire to work*", concluding that, if the student receives the theory in class, he can disconnect and waste time unnecessarily.

This method may even, at certain times, accelerate the learning process by allowing the student to receive the lesson in the right place and at the right time for him. This can encourage concentration and a willingness to learn.

It has been possible to see in the answers the warning that flipping the class can only work in higher academic contexts, since for younger students this may be an invitation to not be up to date with their lesson.

The *Flipped Classroom* is a great help for students who need to combine work and study. The freedom of time to receive a lesson facilitates the educational process of all level students who need to work by not needing a fixed time for studies.

From the point of view of the teaching staff when it comes to flipping their class, it is important to keep in mind that it will take more time than what is needed in a traditional class, as a rule. Preparing the contents, recording them, uploading them, sending them to

the students etc... all of this requires additional time, and the *Flipped Classroom* may not convince certain teachers for that reason.

The application of the flipped class requires previous training dedicated to this method. Some prior knowledge is required, such as the use of a computer, a *LMS* environment, Camtasia or another video recording and editing program or YouTube, among others.

In conclusion on this question, it has been highlighted that the general feeling about traditional education can be defined as “demotivating” and “flat”. The *Flipped Learning* proposal facilitates the entire educational process from the student's point of view, providing them with freedom of time and place when receiving their classes. This creates an additional motivation in them when facing the learning process. On the other hand, for the teaching staff, this method requires more dedication than in traditional teaching.

Next to that, teachers have been asked about the tools they use regularly. The main tools mentioned have been YouTube, Camtasia, Kahoot, Google Drive and Prezi.

YouTube is a website dedicated to sharing videos. It presents millions of videos of any subject and raises the possibility of uploading own videos. It has additional tools such as subtitle control or grouping videos in playlists.

Camtasia is a video recording and editing program. Its main feature is the record of the screen, allowing to make tutorials and guides step by step showing the screen itself. Besides, this program allows you to edit the video including other images, sounds, videos, effects, etc. It is the most used option when recording videos for the *flipped classroom* for its simplicity and effectiveness.

Kahoot is a free web platform that allows the creation of evaluation questionnaires in a dynamic and visual way. It is a tool in which the teacher creates contests in the classroom where the students are the contestants, reinforcing the learning.

Google Drive is a file hosting service in the cloud. Through this platform, teachers can upload files for free to the cloud so that their students can access them from any place at any time.

Prezi is a presentation program to explore and share ideas with a document in the cloud. The main feature of this application is the infinite zoom, which allows users to have a closer and specific view or a more distant and general view on the set of ideas.

Other platforms mentioned in the questionnaires were:

Google Classroom: a free e-learning platform. Here you can make course structures, agendas, add students, assignments, exams ...

Moodle: is an alternative to Google Classroom. It is an LMS platform that allows the entire educational structure of courses and agendas with free GPL license.

Genially: is a web application that allows you to create animated and interactive presentations. It is a tool which main idea is very similar to Prezi, but has other principles. It does not have the protagonist zoom system in Prezi, but instead, it has greater compatibility working in conjunction with other web platforms.

In this question it has been observed that Moodle is mentioned mainly in questionnaires of Spanish teachers, while in the UK Google Classroom is preferred.

Kahoot is the most mentioned tool in teacher questionnaires due to the dynamism and the "contest" environment that is generated in the classroom.

Many professors maintain their traditional position, mentioning *Power Point* and *PDF* as main tools, without applying the concept of inverted classroom.

Regarding the third question "What have been your most valuable resources?", It has been concluded with the following:

Moodle is a fundamental pillar for teachers when applying the *Flipped Classroom* since many teachers have highlighted this tool among all those mentioned above.

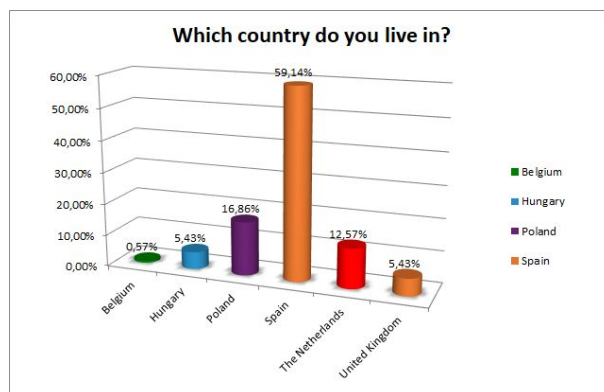
Depending on each teacher's abilities, the resources and tools highlighted, vary. More traditional teachers emphasize *Word*, *PDF* and *email*. Teachers more accustomed to this technology stand *Genially*, *Google Drive* and *Mahara*.

3. Students pilot

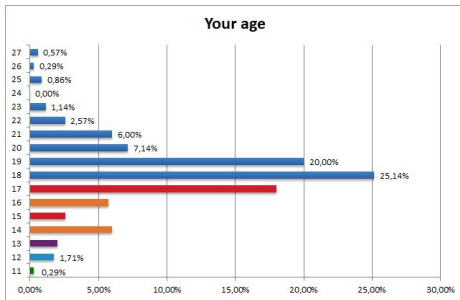
3.1. General data of students

Which country do you live in?

Most of the answers are from Spain (61,70%), with a total of 203 students. With Poland (17,93%, 59 students) and The Netherlands (13,37%, 44 students), these 3 countries have more than the 90% of the students that participated in the student pilot questionnaires, with a total of 306. UK (5,78%) have 19 questionnaires answered. Both Belgium and Hungary only submitted 2 students (0,61% each country).



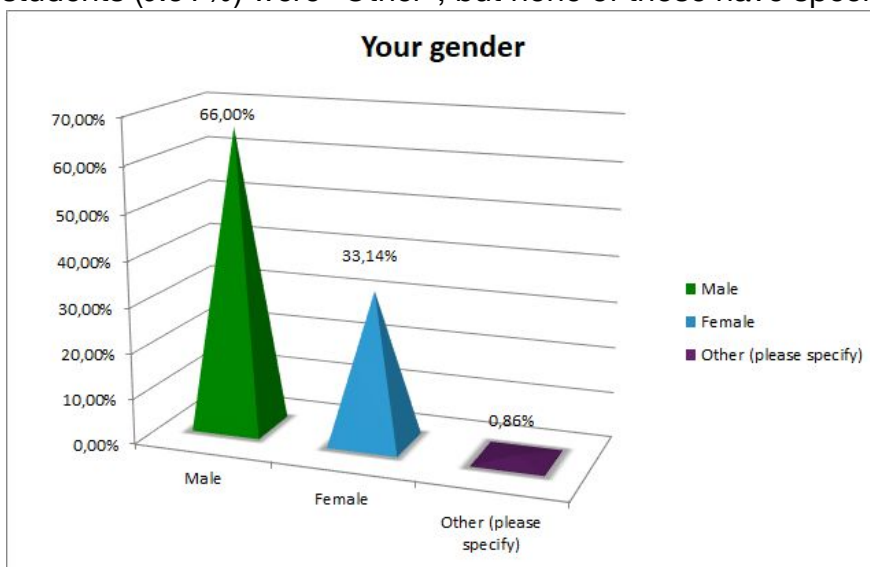
Age



In this surveys, we have had students comprising between 11 years old and 27 years old. 38,60% of the students were underaged. 17 years old students were 49,61% of all the underaged students. Students between 18 and 21 years old were the 94,54% of all the over-18 year old students.

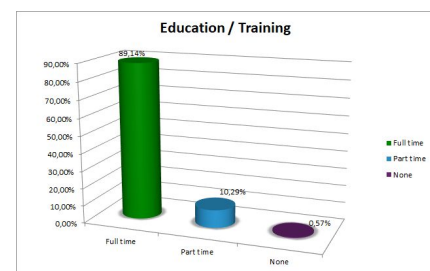
Gender

34,95% of the students were female (115 students). 64,13% were male (211 students). 3 students (0,91%) were "Other", but none of those have specified.



Education / training

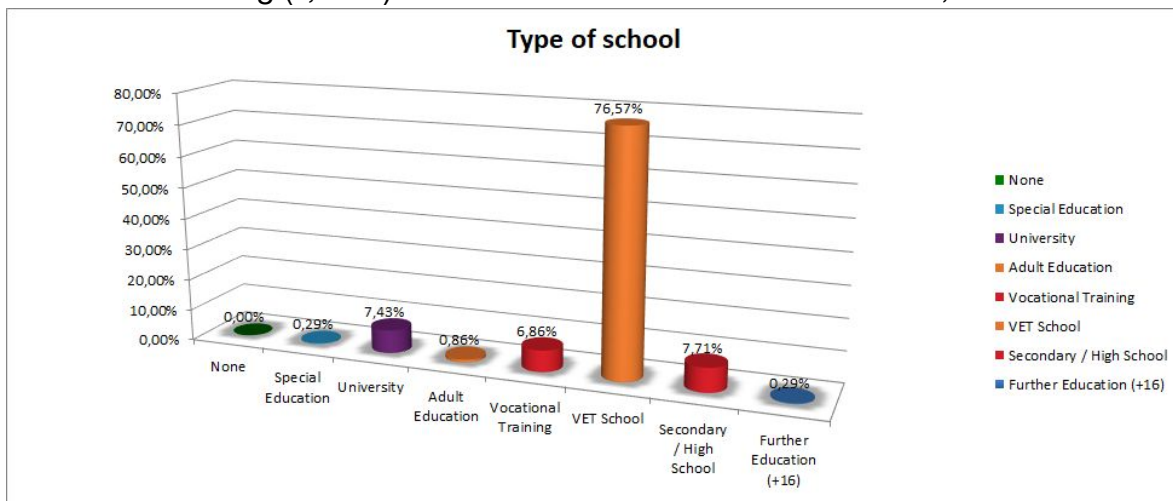
295 of 329 students (89,67%) were full-time students. 32 were part-time students (9,73%). All the students minus 3 are active students.



Type of school

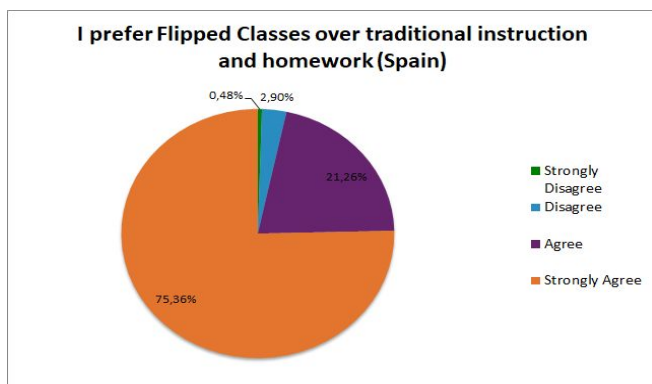
VET School was the most selected option, 75,99% of the students selected it (250). The following options were Secondary / High school (8,21%), University (7,90%) and

Vocational Training (6,38%). These answers are selected in the 98,49% of the surveys.



3.2. Students satisfaction

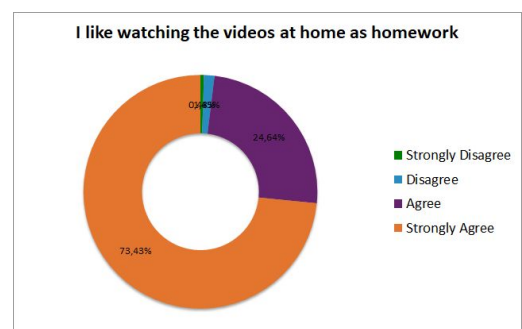
I prefer Flipped Classes over traditional instruction and homework



92,71% of the students agree with this statement. 55,41% of the students that agree with this, answered “Strongly agree”. In Spain, only 3,45% disagrees with this.

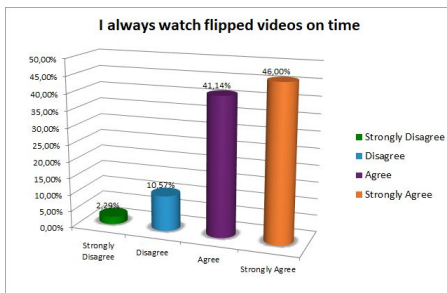
I like watching videos at home as homework.

Only 12 of the 329 students don't agree with this statement. 39,51% of the answers agree with this and 56,84% of them strongly agree with this idea. In Spain, 74,88% of the students Strongly agree with this statement. In Poland, 72,88% of the students Agree with this.



I always watch flipped videos on time.

10,64% of the students disagree with this.

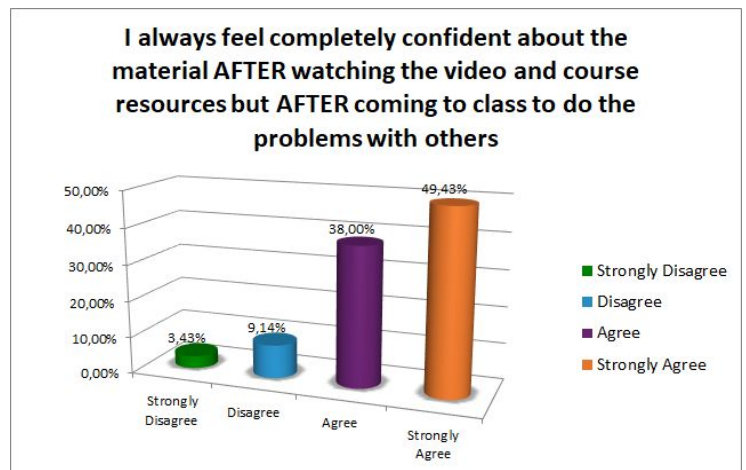


I always feel completely confident about the material AFTER watching the video and course resources but BEFORE coming to class to do the problems

61 students disagree with this statement. This question is the most disagreed by the students.

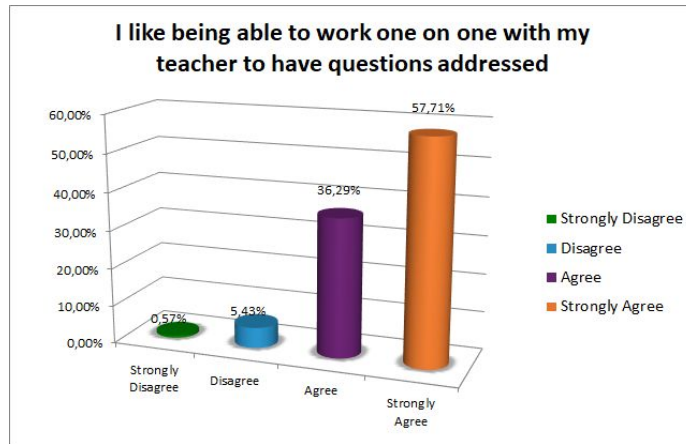
I always feel completely confident about the material AFTER watching the video and course resources but AFTER coming to class to do the problems with others

Contrasting the the question above, only 37 of 329 students disagreed with this statement. 16 of these disagreeing students are from Spain. In Hungary, 26,32% of the answers Strongly disagree.



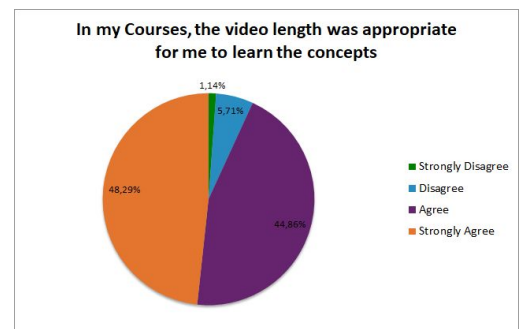
I like being able to work one on one with my teacher to have questions addressed

94,22% of the students agree with this. 60.97% of the students that agree with this, answered “Strongly agree”. In Spain , United Kingdom and Belgium, no students have answered Strongly disagree in this statement.



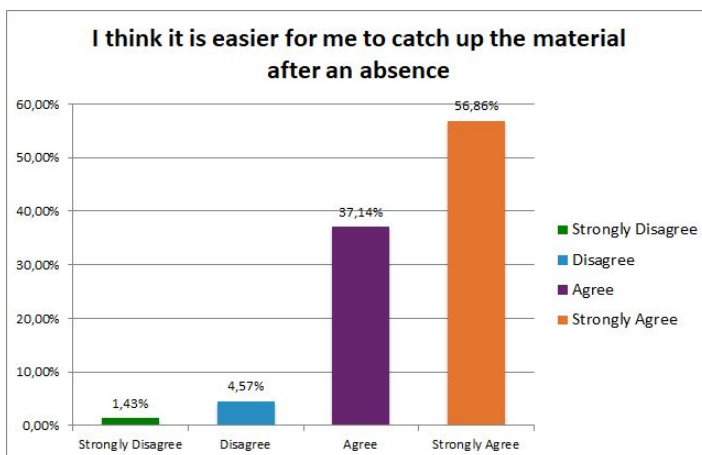
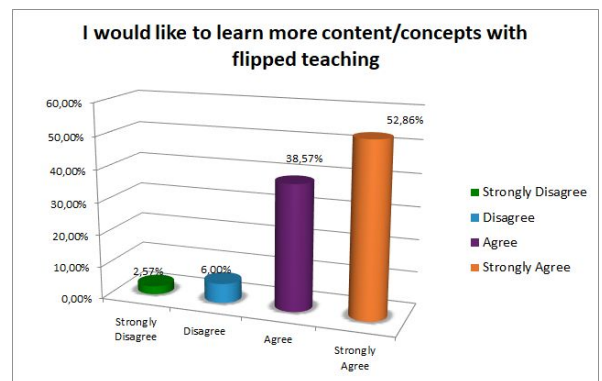
In my courses, the video length was appropriate for me to learn the concepts

23 of the 329 students disagree with this statement, disagreeing with the convenience of the video length.



I would like to learn more content/concepts with flipped teaching.

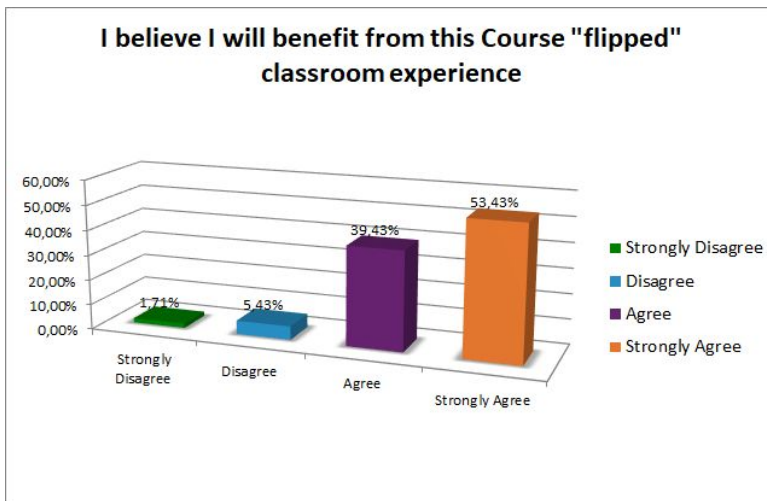
91,79% of the students would like to learn more content with flipped teaching.



I think it is easier for me to catch up the material after an absence

313 of the 329 students agree with this statement, thinking that flipped class makes easier for an student to catch up the material after an absence. In Spain, nobody has answered Strongly disagree in this statement. In Poland, only 3,39% (2 students) disagree or strongly disagree with this.

I believe I will benefit from this Course “flipped” Classroom experience.



54,10% of the students strongly agree with this. Next, 38,91% agree with the statement. The remaining 6,99% disagree and strongly disagree with this idea.

As we can see in the surveys, the general feeling of the students is quite positive, although several proposals have been found that show that only using *Flipped Classroom* is not a perfect method either.

Questions like “*How could I ask the teacher a question if I'm watching the video at home?*” or “*How can I make sure that my students will maintain interest with this method?*” show that this is not a perfect and seamless method and a combination of different methods is in this case the most suitable option.

Especially because each person learns differently, and it is difficult to adapt the videos to the needs of each student. Here we have seen that students have to maintain a more adaptive behavior compared to face-to-face classes, where the teachers can adapt the explanations and their lessons according to the needs of their students.

The interest of the students is essential in this case. A student will not learn properly if he or she does not watch the videos carefully. It is necessary that students maintain the right interest and the way of working at home is adequate for the method to work as expected.

Although the student body for which this method has been thought of is *VET*, it is also valid for other educational levels, such as early childhood or secondary education.

It is not mathematical that students improve their grades with *Flipped Classroom*, but what has been proven is by giving greater freedom with regard to time and place to the student when learning a topic, the results improve significantly.

By making e-learning a fundamental pillar for learning with this method, students are helped to become familiar with *LMS* environments and different online technologies. Regarding teachers, flipping the class requires certain technical knowledge that is not needed really in traditional class. Creating videos, uploading them to the Internet or creating classes with Moodle or another *LMS* requires an structure and extra work from the teacher compared to the traditional class.

As for questions by country, *Belgium*, *The Netherlands* and *Poland* have had quite neutral answers, without a doubt to be highlighted.

In *Spain*, the doubts and proposals have been very positive, highlighting the innovative factor of this proposal and the efficiency of the method.

In the *UK* there has been a more demanding and cautious set of responses and comments, raising issues that may be decisive in deciding whether to apply the *Flipped Classroom* method or not.