FLIPPED LEARNING, AS A TOOL FOR COLLABORATION ACROSS COUNTRIES AND REGIONS

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Abstract: *When using Flipped Classroom (FC) methods students receive tasks prior to classroom work allowing them to acquire introductive notions about the material to be presented in classroom settings.*
What area the experiences of higher education teachers from the domain of social sciences regarding the use of FC methods? We present research result conducted with online questionnaires in five EU countries regarding the prevalence and general impressions of using FC methods.

Key words: *flipped classroom practice, international comparison, higher education.*

Flipped Classroom – Possibilities and Challenges

The increased availability of the Internet and Information and Communication Technology (ICT) resulted in an ongoing paradigmatic change in education. Before the informational era educational methods focused on providing availability to information. One-way information transmitting methods (like frontal teaching or reading books) dominated teaching, as opposed to collaborative, problem-solving based methods.

With the appearance of the ICT access of information is facilitated, and asynchronous communication tools can be used for different types of educational communication (e.g. educational blogs, computer-supported cooperative learning) in schools and outside of school settings. New pedagogical methods (like blended learning) were developed, and distant education is gaining space. Learning is becoming more self-paced, self-driven, and the necessity and possibility of lifelong learning is becoming part of everyday life. Educational focus is changing form the provision of information to facilitating the development of higher order thinking skills (like critical thinking and problem solving). Developing digital literacy, and, in general, synchronizing the educational offer with workplace and real-life requirements is a concern of educational policymakers. The educational policy of the European Union, and the national directives of the member are also supporting this transformation.

However, transforming educational norms and practices is a difficult and lengthy process. Changes have to well-prepared; a transformation does not necessarily lead to improvement. Developing educational practices and materials in accordance with the aforementioned requirements is a work-intensive process.

For example, flipped classroom (FC), a blended learning educational method is a pedagogical approach in which the conventional notion of classroom-based learning is inverted, so that students are introduced to the learning material before class, with

classroom time then being used to deepen understanding through discussion with peers and problem-solving activities facilitated by teachers.

Although the method can be used using solely traditional, off-line tools (like books and drill-books), the internet and development of ICT facilitated moving the lecture outside of class with slides, audio, podcasts, or narrated presentations. The flipped model allows students to learn at their own pace and they may have flexibility of choosing when they engage with electronic resources This asynchronous approach frees up in-class time for student centred synchronous learning activities, resources, and that these discussions could be initiated by the students, not the staff member. This model puts more responsibility for learning on the students so students can work towards mastery of the material. The flipped learning approach is significant as it has the potential to fully equip students, and those already in the work force, with skills to address 21st century discipline-related problems.

Scientific studies indicate that when changing traditional methods to flipped classroom it is expected to improve student's performance [1] and satisfaction [2-5]. FC methods increase student's motivation and their self-confidence [6], their commitment to learn [7] [8].

In spite of the aforementioned benefits of the FC method, researchers and practitioners indicate that among impediments of widespread usage of FC methods are the additional time and technological support in relation to development of flipped learning activities [9]; (bibliography references are detailed in Annex 1). The flipped approach often involves the investment of significant time and energy on the part of instructors (e.g., recording video lectures; designing additional in-class activities) [10]. For example, producing a 10-minute instructional video can take 32 working hours, if animated. It is therefore recommended for teachers flipping their courses in team. By working in team, teachers can share their experiences of implementing flipped classrooms as well as their teaching resources.

As a result, there is a dissonance between flipped learning research and practice: although there are isolated initiatives to convert several topics of teaching to flipped methods, coherent materials covering and entire discipline are rarely developed, mainly because the flipped approach often involves the investment of significant time and energy on the part of instructors (e.g., recording video lectures; designing additional in-class activities).

DFM – a project for overcoming difficulties in preparing FC materials

In order to address the challenges of covering a course with FC materials

The purpose of the "Developing Flipped Methods for Teaching (DFM)" project is to develop educational materials for teaching an entire course of introduction to psychology with a flipped classroom design, with translation to seven European languages. The project aims at overcoming the difficulties of elaborating multiple materials for teaching with flipped classroom design. Teachers from higher and secondary education institutes will have all the necessary materials for teaching the subject of psychology with flipped classroom methodology.

The primary target group of the project are academic staff from the domain of psychology, who have a desire to improve their teaching skills and are open to use new technologies. A secondary target group is teachers from secondary education institutes specialized in psychology. Other target groups are pre-service university students from the domain of elementary school teaching, people who interact with children and have the goal

to teach them social sciences, people working in adult education, students and people willing to learn social sciences.

The team is composed of higher education academic stuff of five institutes from five European Countries: Hungary, Bulgaria, Cyprus, Portugal and Slovakia.

By creating a team with higher education teachers from the domain of psychology, the overwhelming work of converting an entire discipline will become manageable. The majority of the key persons from this project is coming from institutes who has experience in partnership projects in general, and flipping classrooms in particular. International partnership is essential also for the dissemination of the results. Each partner will translate pedagogical materials developed by the others; the intellectual outputs will be available in seven European languages, including English. Teachers will have ready-to apply pedagogical tools for flipping their classroom.

Research: Flipped classroom practices in teaching social science

There is a growing body of research which is proving that when done well, flipped classrooms are having a significant impact at every level and in every conceivable discipline (Reidsema, Kavanagh, Hadgraft, & Smith, 2017). However, there are discipline-based differences regarding suitable methods to be applied (e.g. the kind of online activities and assessment used). There is no research aimed at investigating grassroots level flipped classroom initiatives for teaching social sciences in Europe.

In order to o gain a better understanding of higher education teachers' views on flipped learning (with a special attention on social sciences), a survey was conducted in the DFM project using an online questionnaire. The survey sought to find out who's flipping, who's not, and the barriers and benefits to those who flip. Results are intended to be used in planning Flipped Classroom activities in the project.

The questionnaire used in this study was developed as part of a previous study initiated by Faculty Focus (an online publication) in 2015 (used with permission) [11]. The online questionnaire was translated by DFM project partners to local languages, in order to identify flipped classroom methods developed by individual teachers across six countries[1]. Subjects were asked to provide description of the flipped classroom methods used, including the source and nature of online activities used, difficulties they experienced, and recommendations for like-minded teachers. In order to document insightful case stories, subjects were also asked if they have success stories to share.

The questionnaire was promoted by calls of completion sent to the main higher education institutes of the six countries, explaining the goal of the survey and where the data will be used. Data were collected between September, 2021-march, 2022.

Results

The number of subjects who has completed the questionnaire is indicated in table one. The first referred to knowledge about the FC method; the percentage of academic stuff not aware about this method is indicated in table 1. There are knowledgeable differences

[1] Researchers involved: István Zsigmond (Hungary), András Szilágyi and Melinda Sajgó (Romania), Anita Tóth-Bakos and Timea Mészáros (Slovakia), Veselina Zecheva, Tatyana Kotzeva, Mariya Aleksieva Kasimira Minerva (Bulgaria), Maria Graça Amaro Bidarra, Carlos Alberto da Silva Rebelo, Maria da Piedade Simões Santana Pessoa Vaz Rebelo (Portugal), Eleonora Papaleontiou-Louca and Constantina Demetriou (Cyprus). More detailed country-level results will also be published.

between countries; in Romania, 79í% of the 118 respondents have not heard of this method, whereas in Portugal 11% of the subjects have not heard about the FC method.

Country	N	Yes	No	% No
BG	97	83	14	14
GR	41	28	13	32
HU	69	36	33	48
PT	59	48	11	19
RO	118	38	79	67
SK	95	73	22	23
Total	479	306	172	36

Table 1. Number of subjects and percentage of persons knowing about the FC method.

Before offering our own definition in the survey, respondents were asked to select from a list those descriptions that best align with their understanding and interpretation of the flipped learning model (multiple answers were allowed). Results are indicated in table 2.

	BG	GR	PT	SK	HU	RO
Students complete pre-class work individually before class and engage in team work and collaborative learning activities during class.	94%	40%	20%	116%	14%	30%
Lectures are recorded as videos for students to view outside of class time freeing up time in class to engage in discussions and problem solving.	62%	28%	16%	54%	0%	34%
The learning environment is designed to switch the focus away from the instructor and toward the students.	62%	30%	20%	56%	6%	12%
The homework and lectures are reversed. Recorded lectures are viewed outside of class time, and homework is completing during class time.	62%	14%	64%	18%	28%	54%

Table 2. Which of these definitions aligns with your interpretation of the flipped class?

Prior to formulating the next question, we offered a definition to respondents: „A student-centered learning approach that involves reversing the design of the learning environment, allowing students to engage in activities, apply concepts, and focus on higher level learning outcomes during class time.” Then they were asked if they have ever flipped a class, or their intention to apply this method. Results are presented in table 3.

	Yes	I tried it, but I do not plan to do it again	No, I don't intend to flip my class	No, but I plan to flip in the next year	Total
BG	65		5	25	95
%	67,0		5,2	25,8	97,9
HU	9	10	10	7	36
%	13,0	14,5	14,5	10,1	52,2
PT	32	3	8	16	59
%	54,2	5,1	13,6	27,1	100,0
RO	23	3	3	10	39
%	19,5	2,5	2,5	8,5	33,1
SK	38	2	24	23	87
%	40,0	2,1	25,3	24,2	91,6
GR	28	4	9	41	0
%	68,3	9,8	22,0	100,0	0,0
Total	195	18	54	90	357
%	40,7	3,8	11,3	18,8	74,5

Table 3. Have you tried flipping an activity, class, period, or course?

Respondents who indicated they are not motivated to flip their class were asked their motivation for not interested in flipping. There were too small country-level groups to present detailed data, the totals are indicated in table 4.

	Total	%
Not enough knowledge about flipping	17	3,5
It's a fad that will soon be replaced by the next new thing	9	1,9
Too time consuming	7	1,5
Uncomfortable with the approach	6	1,3
Limited experience with and/or knowledge about technology	2	,4
Lack of recognition and/or support	5	1,0
This type of work is not part of my position/role	2	,4
Total	48	10,0

Table 4. We'd like to know more in-formation about why you are not interested in flipping your class or what prevents you from flipping.

Respondents who had experience in flipping their classes – even if they indicated an intention to not do it again – were asked details about the flipping experience: when did they flipped their classes, how would they rate the experience for them and their students? Total results are presented in tables 5, 6 and 7.

	Frequency	%
Within the past year	49	10,2
1 year ago		
2 years ago	39	8,1
More than 3 years ago	114	23,8

Table 5. When did you first implement the flip?

	Frequency	%
Positive	170	35,5
Neutral	28	5,8
Negative	13	2,7

Table 6. How would you rate the experience for you?

	Frequency	Percent
Positive	154	32,2
Neutral	42	8,8
Negative	12	2,5

Table 7. How would you rate the experience for your students?

Respondents were invitated to indicate the reasons for flippin. The answer options and results are presented in table 8. The most important motivations were to increase student enagement, to practice a more learner-centered pedagogy and to improve the learning environment, in general.

	Frequency	Percent
To increase student engagement	149	31,1
To improve student learning	97	20,3
To shift away from lectures and become more learner-centered	121	25,3
To improve the learning environment	106	22,1
To breathe new life into an existing course	68	14,2
To learn new teaching skills	59	12,3
Curiosity, general interest	47	9,8
My department/college/campus is heading in this direction	6	1,3
I heard about it from a colleague	5	1,0

Table 8. Why did you decide to start flipping? (check all that apply)

Respondents also indicated their degree of agreement regarding a range of possible effects on students when applying the flipped classroom method. The most indicated answers were that students become more engaged, and they are more collaborative (see table 9).

	Agree strongly	Agree somewhat	Disagree somewhat	Disagree strongly
They are more engaged	23,8	17,5	2,9	,2
They are comfortable using the technology	21,7	16,1	5,0	,2
They are more collaborative	17,5	21,5	4,6	,6
They ask more questions	17,3	19,6	5,4	1,0
They see the value of this type of experience	14,8	20,7	7,5	0,4
They build relationships/community	12,5	21,3	7,5	1,9
They adapt to the approach	11,5	26,5	5,6	0,4
Their grades are improving	10,2	25,7	7,5	0,4
They come to class prepared	9	23,2	10,4	0,6
They are resistant	3,3	14,6	17,3	8,1

Table 9. Indicate the extent to which you agree or disagree with each of the following statements related to students in your flipped course(s) – percentages (Total: 479)

Respondents were asked about the benefits they experienced in general when implementint FC methods. The survey offered participants 10 different choices and the option to select multiple answers. Most of the respondents indicated that flipping positively influenced student engagement, and teaching has become more student-centered (see table 10)

Increased student engagement	75,47%
More learner-centered teaching	63,68%
Improved student learning	50,47%
Improved learning environment	51,42%
I know my students better	40,09%
I am more excited about teaching	20,75%
I look forward to class more often	10,85%
Re-energized a course	19,81%
I have been asked by colleagues to share what I am doing	4,25%
I have produced scholarship related to my flipped teaching	1,42%
I didn’t realize any benefits	0,00%

Table 10. What were the biggest benefits experienced from flipping? (check all that apply) (Total: 212)

The move to flipped methods is not easy for various reasons. In order to identify the biggest barriers to flipping, the next question asked participants to indicate which challenges exist and to rate how significant those challenges are. The most mentioned answer was time, which is in concordance with previous research findings.

	Very Significant/ Always a challenge	Significant/ Often a challenge	Moderate/S ometimes a challenge	Insignificant/ Rarely a challenge
Time	79	64	35	26
Lack of support (resources/ funding/space)	44	52	72	47
Competing department/ college/campus goals	19	32	43	113
Not valued by colleagues/ administration	22	55	49	88
Not understood by colleagues/administration	27	48	45	92
Being creative/developing new strategies and ideas	62	79	46	26
Student resistance/lack of motivation	36	67	71	42
My experience/comfort with technology	29	71	50	60
Other responsibilities required by my position	33	43	57	74

Table 11. What challenges do you face when thinking about flipping your class? (Total: 479)

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