Flipped Clasroom Model in the Context of Distant Training

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Introduction

In recent years, technical and theoretical innovations in educational science have unlocked new paths entirely. The pressure of rising tuition rates and delivering free, online classes opens up debates and catalyzes the reform in the physical classroom. In the middle of this debate flipping classroom is the useful one that is mostly prominent (Bishop and Verleger, 2013). Moreover, many of the steps taken by countries that respond the crisis in the field of education due to COVID-19 pandemic, contributed to the termination of face-to-face classes for each level. The pandemic has transformed the contexts in which curricula are implemented since certain qualifications and competencies are more applicable in the current situation1. The impact of this epidemic on schools sharply stressed the importance of the connection and accessibility to digital media in service of all the education levels. Hence flipping classroom model come to fore again because schools and other educational centres. In many cases without any guidance and instruction for educators, these institutions had to transfer their education online in the process of the COVID-19 pandemic. In marked contrast to a paradigm of teacher-centered learning in which the students are treated as hollow containers which can consume knowledge passively, flipped classrooms provide student-centered peer-assisted instruction. Students are presented with pre-class knowledge through videos, graphical lectures or brief lessons using a "Typical Flipped Classroom Pedagogy". It follows a class session where the material is reviewed while the teacher conducts small group conversations under the leadership of students (Guraya, 2020). In this respect, it seems that flipped classroom model can be useful for conducting education that depands on distant training. However, it should be kept in mind that neither distant training nor flipped classroom can handle the disruptive effects of the COVID-19 pandemic on education. The several obstacles which prevent students and instructors from engaging continued education during the lock-down of COVID-19 because educational problems with COVID-19 pandemic locks ranged from learning disruption, restricted access to study facilities like labs, job loses in the education sector, raised debts of students, decreased support and funding for education, research constraints, and loss of learning interests among learners (Onyema,et al. 2020). Despite the technological flux that reveals a classroom paradigm

[1] https://repositorio.cepal.org/bitstream/handle/11362/45905/1/S2000509_en.pdf retrived from 29.11.20

consistent with the needs of the 21st century as well as the devastating effects of the COVID-19 pandemic a little study in flipped classrooms has been done in the literature (Abeysekera, Dawson, 2015). Hence, the aim of this part is to run through the literature about the flipped classroom model and grip it through the current context of distant training.

Improvement of Flipped Classroom

Flipped classroom is a recent pedagogic approach which replaces the face-to-face learning with the use of time for individual study to enhance their effectiveness of educational practice (Quint, 2015) such as where teachers have assigned a certain number of materials until the next day to be read about a certain topic or topic (Springen, 2013) so that students can use the material in activities covered in the classroom (Kenna, 2014). In their book Flip Your Classroom: Reach Every Student in Every Class Every Day, Bergmann and Sams (2012:13) defined a flipped classroom as a educational place "which is traditionally done in class is now done at home, and that which is traditionally done as homework is now completed in class" . In other words, students watch or listen to the content of their classes at home in flipped learning and then participate in mental tasks under the supervision of teachers in various assignments during school hours (Goodwin & Miller 2013). Altough there isn't any unique definition of Flipped Classroom, Abeysekera and Dawson (2015) (cited by Yurdagül, 2018: 27) described the characteristics of the Flipped method and summarized as follows:

- a change in use of classroom time;
- a change in use of out-of-class time;
- doing activities traditionally considered ―homework‖ in class;
- doing activities traditionally considered as in-class work out of class;
- in-class activities that emphasize active learning, peer learning, problemsolving;
- pre-class activities;
- post-class activities, and;
- use of technology, especially video.

Just as Bergmann and Sams (2012: 6) clarified that no one has invented 'flipped classroom model, only that they were 'early adopters and outspoken proponents' of the screen casting tool. In the past there has been tremendous attention to the flipped classroom that reverse the conventional lecture-homework pattern. The notin of the flipped classroom can be traced back to the article entitled as "From Sage on the Stage to Guide on the

Side" of King (1993) focusing on the changing role of the educator as either a facilitator or a guide but not a simple lecturer. It was nonetheless in the 1990s that the professors of physics, Eric Mazur from Harvard, proposed a transition from 'teaching' to 'helping students learn.' The "Peer Instruction" from Mazur can be regarded as of these steps in the creation of the flipped-in classroom concept (Brame, 2013). He saw education as a two-step process: 'transferring information,' and then 'recognizing and assimilating this information'. Then, Mazur (2009) revised his instruction by recording his lectures through videos making students able to prepare for the class in advance so that Mazur reverse passive studying outside the classroom as an updated concept of a flipped classroom, thus bringing active learning inside the classroom (Crouch and Mazur, 2001). In 2000, J. Wesley Baker introduced the concept of "flipping the classroom using web-based learning management tools" in his paper presented in the 11th International Conference on College Teaching and Learning, in Florida. In this presentation, Baker's (2000) emphasized the signifcance of adopting qualified programs and materials to invert, reverse or flip their classes. At the same time, Lage et al. (2000) similarly translated the concept of "The Classrom Flip" as "Inverted Classroom" and similarly defined it as watching the lectures before coming to the classroom and working with a group in the classroom in a collaborative way. Khan and Khan academy took the next step in making flipped classroom material common when Khan began documenting videos in mathematics for her younger cousin having trouble at math in 2004 (Khan, 2012). The doctoral dissertation of Strayer (2007) suggested the common point in the majority of flipped classroom activities as a means of creating an active learning environment as another contributor to the development of this model. This research can be regarded as one of the first research on flipped classroom, investigating how students perceived the learning environment and activity in the flipped and traditional classroom. However, the people who are credited with the application of the concept of the flipped classroom at secondary level are Jonathan Bergmann and Aaron Sams, two chemistry teachers from North America. For the first time, Bergmann and Sams named the approach the pre-vodcasting model: "pre" to address the idea of the video occurred prior to class and "vodcasting" as an acronym for video podcast. They also produced and developed other teachers' professional skills and adapted the name to reverse instruction to address the anxiety teachers showed in the name of the technology (Bates , Almekdash , and Gilchrest-Dunnam, 2017: 5). In 2006, they started recording their live classes and making lesson videos with screen casting apps and slides for the students who missed their classes. Later, the format of their instruction was entirely changed. They posted pre-recorded lessons for pre-class views and used class time for hands-on learning (Kömeç, 2018: 23).

Blended learning environments allow learning both in conventional face-to-face and digital workplaces (Singh, 2003). The flipped classroom model is basically based on blended learning and active learning (Hung, 2015). Within this respect, in order to

encourage student readiness by even more engaging learning interactions for classroom learners, it covers a wide group of active face-to-face problems and inquiry-based learning opportunities inside the classroom followed by educational films (İyitoğlu, 2018: 27).Actually, according to Staker & Horn (2012) flipped classroom model can be categorized under the title of blended learning which is a recent learning model that encompasses face-to-face instructional methods with supportive online instructions (Bonk & Graham, 2006).

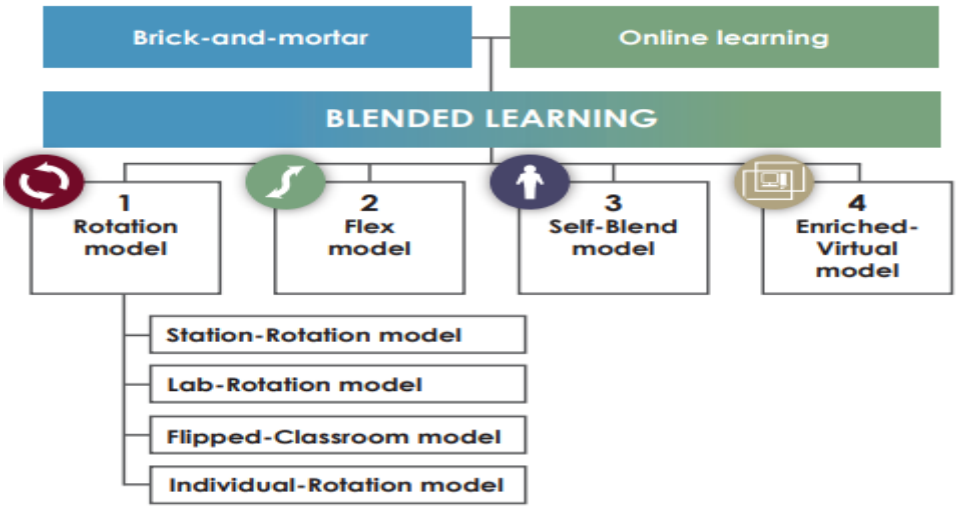

Figure 1. Types of Blended Learning Model (Staker & Horn, 2012).

According to Staker & Horn (2012) Filipped Classroom is a sub-category of rotation model where students rotate between modalities of learning within a given course or theme (e.g. math), at a fixed timeframe or at the teacher's discretion between learning modalities, at least one of which is online learning. Other forms of doing that could include small-group or full-class instruction, group projects, individual tutoring, and pencil-and paper tasks. Students rotate on a fixed schedule between face-to-face teacher-guided practice (or projects) on campus during the standard school day and online delivery of content and instruction of the same subject from a remote location (often home) after school. The central aspect of content and instruction is that it occurs in an online space, which separates a Flipped Classroom from students who just only do homework or given tasks online at night. The model of Flipped Classroom accords with the idea that blended learning includes some element of student autonomy over time, place, path, and/or pace, since the model enables students to choose the location at which their content and instruction are obtained online and to control their interactions through the online elements.

"F" of F-L-I-P TM stands for flexible environment where the flipped classroom teachers build flexible ecosystems having small individual and group work areas so that the most of their class time is allocated to expand skills through more problem-based learning

exercises . "L" of F-L-I-P TM stands for a changing tendency in the learning where students are actively engaged with the knowledge construction process. "I" of F-L-I-P TM refers to intentional content where the content is supposed to be intentionally tailored to support the curriculum in a collaborative and active learning atmosphere. "P" of F-L-I-P TM stands for professional educators as the implementers of the approach in order to make sure the students acquire and use their own learning materials. (Hamdan, et al., 2013; İyitoğlu, 2018: 27-30). The reason why it is called a flipped classroom is that it is an approach that proposes to move what is achieved beyond the school in the traditional classroom management to outside of the classroom and vice versa. As for traditional approaches, homeworks are supposed to be assigned for outside the classroom in order to consolidate what has been taught in the classroom. This can lead to challenges for students since these activities are usually harder than those learned in the classroom (Yurdagül, 2018: 27). The guiding principle is the thought that just listening to the lessons is a passive process, and the student will be able to view the lecture videos and content individually. As for the homework and related exercises which are the practice of what is learned during the lesson, the student may need more fort he guidance of the teacher, and the more effective learning is provided by the guidance of a teacher in the classroom. It is basically a contemporary research application of study at home, the current application is not that simple and its benefits are much higher (Göksu, 2018; Kara, 2015).

Flipped Classroom Model versus Traditional Instruction

Flipped Learning Network (2014:1) recognizes the FCM as a 'pedagogical method in which explicit instruction is moving from the group to the individualized learning domain, where it turns the resultant group space into a complex, collaborative learning environment, where the instructor facilitates the students through their development of concepts and an innovative approach to the course topic'. The theory of student engagement (Astin 1999) forms the basis of flipped learning, which notes that the more work a student brings into his or her learning process, the greater its personal and collective progression (Roehling, 2018:3). When compared to the traditional learning approaches, students demonstrate impressive results in flipped learning (Schultz et al., 2014). First of al, FCM supports the learner-centered pedagogy. Students become active learners and teachers are more able to promote higher-level instruction and learningn. This learning model takes into account the characteristics of learners such as individual differences, levels of learning readiness such as motivational levels, learning rates and cognitive ability (Nederveld and Berge; 2015). Teachers present themselves more effectively as a professional who encourages students to participe in the learning process. Teachers offer activities that lead students to make successful use of their learning to improve their abilities to find solutions to complex problems (Milman 2012).

In a large lecture course, the conventional teaching/learning pattern starts with an

instructor presenting each class with new materials and subsequently reviewing the content, and then a summative evaluation to test student comprehension (Moravec, et al. 2010). Therefore, traditional classrooms are usually based on teacher-centred group instruction, where knowledge flows only in one direction from teacher to learner while in flipped classrooms the role of a teacher changes from information giver to that of a facilitator who designs a student-centred environment that encourages students to be more active in their learning and uses class time for more engaging activities (Cheng-lin & Jian-wei, 2016). Secondly, educational knowledge transmits from teacher to student in a conventional approach, while flipped teaching models allow students greater autonomy and responsibility and collaboration for learning (Zownorega, 2013) since the flipped-class designs provide an environment for learners to control their own learning by setting their own objectives and preparing their time to study (Wiginton, 2013). Classical education methods, learning is bounded with time and location. For example, the duration in the classroom is limited in a sense that the student is provied with minimum assistance and must use his/her lowest level cognitive skills (Arslan & Özpınar, 2008). Bergmann and Sams (2012: 15) properly describe how the time is completely restructured as follows:

Students still need to ask questions about the content that has been delivered via video, so we generally answer these questions during the first few minutes of class. This allows us to clear up misconceptions before they are practiced and applied incorrectly. The remainder of the time is used for more extensive hands-on activities and/or directed problem-solving time.

Table 1. Comparison of Class Time in Traditional versus Flipped Classrooms (Bergmann and Sams, 2012:15)

Traditional Classroom		Flipped Classroom	
Activity	Time	Activity	Time
Warm-up activity	5 min	Warm-up activity	5 min.
Go over previous night's homework	20 min.	Q&A time on video	10 min.
Lecture new content	30-45 min.	Guided and independent practice and/or activity	75 min.
Guided and independent practice and/or lab activity	20-35 min.		

Additionally, students need teacher assistance in homework activities that are given for the outside the classroom activities (Talbert, 2012). However, in the flipped classroom model, students have more broader time for handling complex task and they can more easily reach teacher guidance since FCM enables teachers to spend their limited class time with students (Obradovich et al 2015). The following figure illustrates the application differences between the traditional model and FCM (Şık, 2019: 41).

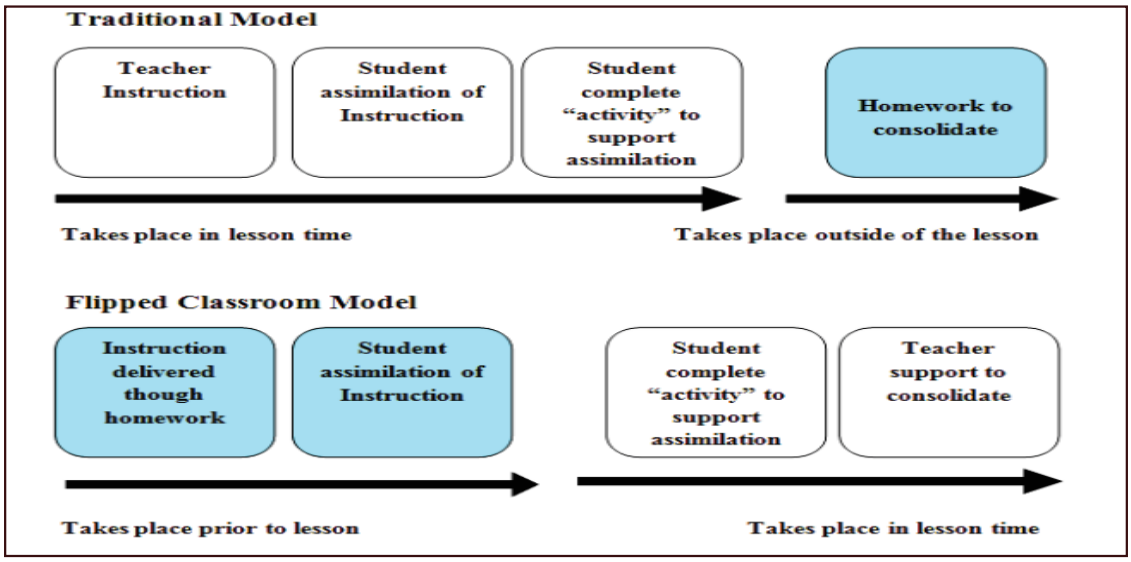

Figure 2. A Comparison Between Traditional Classroom and FCM (Moravec, et al. 2010 from Şık, 2019: 42)

FC offers another advantage in developing higher-quality skills in the learning process. Bloom's revised teaching taxonomy (Anderson, Krathwohl and Bloom, 2001) which orders cognitive thinking skills from simple to complex. Figure below demonstrates the order of skills when engaged in the learning process in traditional and flipped classrooms. Therefore, pupils are exposed to traditionally educated schools. Thereby, students are subject to direct instruction in class rooms that have typically learned fewer low level skills such as recall and understanding, whereas in homework assignments they need **a** higher order cognitive skills such as applying, analyzing, evaluating and design for the tasks given. In comparison, FC Strategy inverts these steps because of their complexity in order, under the supervision of teachers in the schools, to promote activities that involve higher order cognitive skills while providing simple information that can be handled by less organized thinking skills using video lectures at home (Göksu Yüreğilli, 2018; Bulut, 2018).

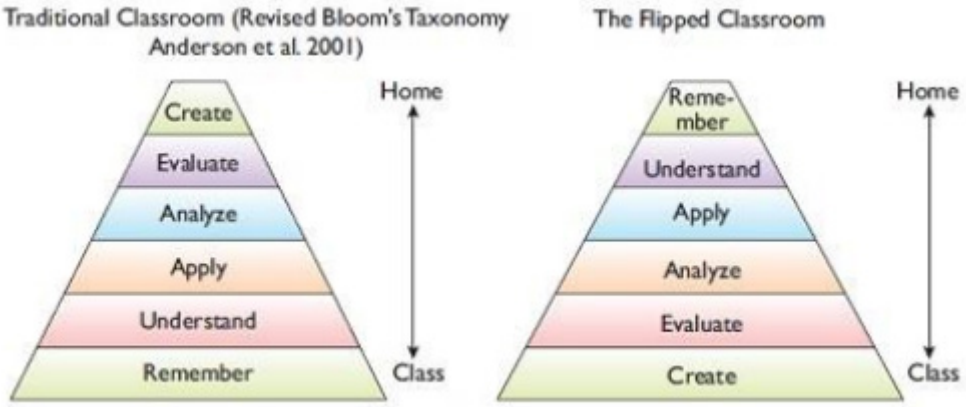

Figure 3. Revised Bloom's Taxonomy of Educational Objectives in the Context of Flipped Classroom Model (Bulut, 2018:16).

Another advantage of the flipped classroom model is that learners are encouraged to transfer their new knowledge to real-life contexts (Horn, 2013). Students engage actively

in the process of knowledge formation in active learning settings (Adams & Burns 1999).The flipped classroom puts together constructive learning techniques. Therefore it encourages students to devote their time to finding solutions to problems, develop, evaluate and synthesize in a comprehensive and logical manner (Gürlüyer, 2019). Finally, the goal of the flipped classroom approach is to give students direct access to and use of digital technologies (Richter & McPherson, 2012; Yaşar, 2020) so that teachers put together multimedia and video lectures in online mode. This enables students, through mobile phones, tablets and other devices, to enter and attend lectures at home and later to pay more attention to the work of seeking solutions to complicated or complex problems during classroom hours (Martin, 2012). Enfield (2013) highlighted the advantages of employing Flipped classroom model in the context of technology as follows;

(a) When the students are absent, the videos provided a good source of information,

(b) Most students find educational videos useful and stimulating, and students moving their own way through the exercise.

(c) Daily quizzes were found to be a significant incentive for most students to keep up the videos.

(d) More students their who want to to learn a new technology without attending a structured course reported that they were more confident.

Therefore, students have the chance to develop their learning across a variety of experiences in an educational environments **in** which they play an active involvement (Seaman & Gaines, 2013). Chilingaryan and Zvereva (2017) emphasized the advantages of FC as;

(a) it increases the contact time between the teacher and the student

(b)it is a kind of personalized approach to each student

(c) it gives an opportunity for the teacher to create authentic mini-lectures

(d) it increases the responsibility and autonomy of the learner

(e) it gives the absent students chance to catch up with the missing subject

(f) each student can work on his/her own pace

(g) it gives the ability to concentrate more on the subject in a free environment

(h) it increases the motivation of the student

(i) it improves the atmosphere in the classroom, making it more welcoming and

comfortable

(j) it increases and creativity and critical thinking of students

(k) the possibility for continual archiving of the material enable the students to access the online material continuously

(l) it turns the teacher into a kind of counselor, helper, guide, helping to orient student themselves to find their way in a sea of information.

However it should be emphasized that Flipped Classrooms may have disadvantages just as every educational model. Correa (2015) listed some potential problems about Flipped Classroom model, these are;

(a) boring/not engaging lessons,

(b) deeming teachers non-necessary,

(c) students not watching the videos,

(d) not everything can be taught online,

(e) the approach is passive

(f) insufficient technological resources

(g) insufficient time to produce the material and lastly

(h) using other teacher's videos would be unethical

We can propose some drawbacks of flipped classrooms in this respect. For instance, if some students who especially live in low-income areas,or come from poor families cannot watch the video lectures because of problems in accessing the Internet and gadgets, then the effectivenes of the flipped classroom will be meaningless for those students. Despite these socio-economic access issues for teachers, it is the duty of teachers to list those who do not have the appropriate technical requirements and who use the form of survey they use until the model has been applied (November, Mull, 2015). Another drawback may be related to the content of the video lectures are supposed to be assigned to students in a clear, informative, and pedagogic way (Mirriahi, Alonzo, McIntyre, Kligyte, &Fox, 2015). Otherwise, the flipped classroom won't be effective in this respect. Additionally, the student reluctance to a new approach is also an issue with respect to flipped classrooms. Some students see video lectures as an extra burden and they don't have instant access to ask the questions to the teachers immediately (Defour, 2013; Öztürk, 2018). Herreid and Schiller (2013) found that students thought like they did more work than in a classroom in the flipped calssroom model. Students who did not watch the outside videos did not

readily understand the content during the class. It was also challenging for teachers to make professional videos and regarded as time consuming in many respects. However, most studies show that educators and students appreciate this transition, but only usually afterwards. It should be emphasized that several years of deeper habits and beliefs must be overcome," and teachers and students must be convinced that this transition is positive for both sides before the filipped classroom begins (Rotellar & Cain, 2016: 5). Talley and Scherer (2013) proposed that flipping the classroom may not be enough to enhance teaching and learning only by itself but that students have become more involved and have better learning when combined with proper activities and self-practice. Again teachers should be careful about the characteristics of the class and students if they want to use flipped classroom model. Therefore, Zappe and Litzinger (2017) propose the variables to measure when evaluating flipped classrooms as student characteristics, out-of-class activities, and in-class activities given in Table 2.

Table 2. Considerations for Variables to Measure when Evaluating Flipped Classrooms Relating to Student Characteristics, Out-of-Class Activities, and in-Class Activities (Zappe and Litzinger, 2017)

Student characteristics	Out-of-class activities	In-class activities
- Gender - Auditory, visual, learning, and other disabilities - Socioeconomic status - Cultural expectations - Previous relevant experiences - Concerns regarding new instructional strategy - Concerns regarding technology requirements - Prior knowledge of course material	- Alignment to course learning objectives - Alignment with related in-class activities - Clarity of materials - Accessibility - Technical issues - Appropriate amount of material assigned - Students' actual or estimated usage of online material (if applicable) - Students' level of preparation for related in-class activities - Student learning gains	- Alignment to course learning objectives - Alignment with related out-of-class activities - Clarity of instructions/ materials - Level of engagement - Targeted time vs. actual time required - Generation of discussion/ questions - Perceptions of class environment - Perceptions of activity effectiveness - Student learning gains

However we can still argue why flipped classroom is needed today if it is applied appropriately by referring the ideas of Bergmann and Sams (2012:15) as follows:

1- Flipping speaks the language of today's students: Today's students grew up with Internet access, YouTube, Facebook, MySpace, and a host of other digital resources. Therefore teachers should infiltrate the video/digital culture instead of fighting it. They should embrace digital learning and used it to help the students to learn, instead of telling them they can't learn with today's tools?

2- Flipping helps busy students: Students today are busy. Many are overprogrammed,

going from one event to the next so that they need the flexibility of the flipped classroom.

3- Flipping helps struggling students: Teachers can spend most of their class walking around helping the students who struggle most.

4- Flipping helps students of all abilities to excel: All the direct instruction is recorded, students with special needs can watch the videos as many times as they need to learn the material.

5- Flipping allows students to pause and rewind their teacher: Flipped the classroom, give the students control of courses so that students appreciate the pause function for different reasons such as slow or fast learning.

6- Flipping increases student–teacher interaction: Flipping allows teachers to leverage technology to increase interaction with students.

7- Flipping allows teachers to know their students better: Flipping allows teachers to build better relationships with our students due to the increased teacher–student interaction.

8- Flipping increases student–student interaction: Teachers can purposely try to make their classes places where students carry out meaningful activities instead of completing busywork so that they can create a culture of learning.

9- Flipping allows for real differentiation: Flipping the class can show how needy many students were since teachers can personalize the learning of all.

10- Flipping changes classroom management: Since teachers not just to stand up and spoke to students, all of the issues of school administration evaporated.

11- Flipping changes the way teachers talk to parents: Flipped classrooms are shifting the emphasis to a place where parents can consider how their students can enhance learning.

12- Flipping educates parents: Many of parents were watching right alongside their children and learning science.

13- Flipping makes the class transparent: Flipping opens the doors to our classrooms and allows the public in.

The Relationship between Technology and The Flipped Classroom

Two important aspects of learning are lectures and active learning in the FCM. The lessons are flipped to home activities so that students can gain expertise and spend more time developing and improving knowledge they have acquired out of class.. The students thus invest their time in class on productive learning and use digital tools for content mastery the activities that are out of class (Martin, 2012). Clark (2015) defined flipped classroom method as a new teaching approach that aims to make lectures outside the classroom through technology, and to do homework and exercises in the classroom with planned learning activities, thus increasing students' participation and performance. In this respect technology has an important role in flipped classroom activities. The flipped classroom technology means such an arrangement for the teaching process, which also has theoretical understanding and an understanding of the problem to be addressed as students attend face to face courses in the classroom. It makes interaction more productive and successful as students are relaxed and more assured as they ask questions and speak to teachers and their peers about the problems. In addition, students take part in realistic exercises, but not in repetitive taking notes of the lecture. Therefore, homeworks becomes different as well (Evseeva & Solozhenko, 2015: 207).The development of technology will facilitate «a new way of intellectual expression and creativity» and offer «previously unbelievable» opportunities for learning (McGrath et al, 2017: 38). The teachers and students realized the need of flexibility and realized the flexibility of the technique itself in the use of technology at home rather than at school (Shaffer, 2017:19). The technologies used in the flipped learning model records lessons for students, enabling them to experience the material at their own speed and allowing them to see the contents themselves (Horn, 2013). Therefore, we need to consider the role of technology and which tools to use when flipping. The first technological concept that can be more frequently used in flipped classrooms are online resources. However, those sources should be educationally fit, credibility and availabile (Crawford and Senecal,2017: 37-41). The mindful use of technology can also provide (McGrath et al, 2017: 39):

• *new ways to:*

- *interact in and out of class (e.g. discussion forums, chat rooms, polls);*
- *collaborate, share, and create (e.g. wikis, social bookmarking, collaborative documents);*
- *showcase, feedback, and peer review (e.g. e-portfolios, online rubrics); and*
- *reflect and plan (e.g. journals, shared calendars);*

• *increased flexibility in time, place, and pace of study as recorded lectures and other online study resources allow students to access resources at their convenience and to suit their pace of learning;*

• *extended opportunities for discovery (e.g. 3D immersive environments, interactive role-plays);*

• *better monitoring of student learning and engagement together with increased ability to identify students "at risk"; and*

• *increased efficiencies in sourcing, producing, and distributing content*

Secondly, effective online presentations that are audio recordings, voiceover presentations, screencasting and videos can be used to transform in-class lectures to pre-class learning activities. However, whatever the presentation type we will chose, teachers consider five logistical factors when choosing the most appropriate presentation type (Crawford and Senecal,2017: 37-41):

• How much time is available to create the presentation?

• How much effort will be needed to use the tools for creating the presentation?

• What is the cost of the tools required to develop the presentation?

• Will the presentation be reused in other courses?

• Will the audio/video production quality level be in alignment to the expected instructional use pattern?

It should be noted that the delivery of technology is not only related to the structure and logistical factors of the course but the current technological condition of the student and schools. Options for delivery of flipped lessons can be varied given in Table 3.

Table 3. Options for Delivery of Flipped Lessons (Shaffer, 2017: 4).

If a student has…	Then…
Computer with Internet capability and service	Lessons can be watched on desktop at home, laptop at home, or outside school.
Computer with no Internet	Lessons can be burned onto a DVD or flash drive and sent home with student
A tablet or a smartphone with Internet access (wireless or 3G/4G)	Lessons can be watched anywhere, anytime when wireless or 3G/4G service is available.
No personal technology, but the school has adequate technology	Laptops or tablets can be loaned to students as needed.
No personal technology and school technology resources are limited	Students can watch lessons in school computer labs, libraries, or classrooms before or after class.

Addtionally, a class shouldn't be inverted merely because of institutional drivers or just for techonological incorporation of new tools. A FC must be defined on the basis of a

need (Kavanagh et al. 2017: 17):

- assist students in mastering a complex idea or information that is difficult and not properly managed using a modern method of delivery;
- Involve students in content which has been considered by previous cohorts to be "boring" or "irrelevant."
- promote professional creation using new knowledge or principles.

The technology that can used in flipped classrooms involves many tools ranging from costly and sophisticated virtual worlds, to free and downloadable mobile softwares to encourage teamwork, connectivity and the community (Bosman and Zagenczyk 2011). First, schools must decide the LMS they are using, ensuring that all students are using the same framework regardless of their grade level or teaching degree. Most Google Classroom schools have also used Google Education software. Second, schools must decide what teachers and students are going to use to store and transfer files. Google Schools of Education used for instance, Google Push. Thirdly, schools must decide if teachers sync video meetings with pupils. Many schools used Zoom or Google Meet. Fourthly, schools must decide what teachers are using to catch asynchronous learning video lessons. Chrome users use Screencastify to screen (when you record what you do on your pc), but even services like Loom and Screencast-O-Matic are very common[2]. However, essential technologies for the flipped classroom can be given as[3]:

1. Screen and video recorder: The development of async learning materials that simulate conventional teaching experience can be encouraged through a screen and video recorder.
2. Video editor with quizzing or polling capabilities: You will customize your presentations and tutorials with a video editor in order to produce on demand content of high enough quality with less time.
3. Video captioning tools: Captioning flipped classroom videos not only helps render asynchronous learning material more available, yet also helps all students, even non-native speakers, grasp and maintain their content.
4. Secure video library: Teachers new to flipping sometimes turn to platforms like YouTube or Google Drive often switch to store and upload course videos. Public sharing platforms not only diminish the rights and control of the intellectual property but also bring ads and sometimes unauthorized images to the virtual learning environment. Video management technology lets you store and share

[2] https://blogs.edweek.org/teachers/classroom_qa_with_larry_ferlazzo/2020/08/blended_learning_in_the_age_of_covid-19.html
[3] https://www.panopto.com/blog/essential-flipped-classroom-technology/ retrieved from 29.11.20

your course videos in a private, searchable video library, without sacrificing any of your creative and intellectual rights.

5. Learning management system: The LMS system of your school will play a key role in building an effective, smart learning environment. In order to facilitate asynchronous conversations and student collaboration in an educational setting, LMS is the core source of content and communication..

Vodcast designing is the important part of the flipped classrooms and the learning objectives for the class period should inform your decision regarding the type of hardware and software you use. Screencast programs generate a multimedia archive of activities on the computer screen. First, screencast programs can be used to deliver lecture-style presentations. Programs may be used to illustrate how a software application should be operated. most popular software programs used by flipped instructors can be given as Camtasia, Adobe Captivate, Screencast-O-Matic, PowerPoint, Snagit, Jing, Screencastify. Additionally, screencasting whiteboard applications record what you illustrate or write on your iPhone or tablet while also capturing your narration. These programs can give as Explain Everything, Educreation, ScreenChomp, ShowMe. Once you have created your vodcast, video hosting services to disseminate the videos. Various hosting services that you can choose can be listed as University In-House Hosting Services, Screencasting-Based Hosting Services, YouTube, Vimeo. Video Hosting Services That also embed quizzes and track student progress can be given as Edpuzzle, Playposit, TED Ed Lessons. It should be noted that the products in the technology world are constantly shifting and changing and therefore you should also follow the current technology (Roehling, 2018). Tools such as Edmodo, YouTube, Google Apps, Dropbox, Educreation, GlogsterEdu, Screncast, Socrative, Teaching Channel, Twitter can also be used to Assessments in transformed education have to be made differently in order to evaluate and assess students success in the flipped classrooms. Due to the COVID-19 pandemic, our education system totally depend on distant trainig.

The Importance of Flipped Classroom Model in Distant Training

Distance learning offers the perfect way to explore the flipped classroom, because students already learn too far from their homes. It builds and enhances the interaction between teachers and students. And inspiration can also help. If you are learning theories in practice, promote student comprehension and peer-to-peer co-operation, this makes an online lesson more dynamic and stimulating. If the aim of the course is the practical application of ideas, this makes an distance learning more dynamic and stimulating. Flipped Learning provides instructors with a means of facilitating and coordinating student activities remotely. Therefore, time spent online together can then be used more

efficiently and a student with personal feedback and support can continue to make successful progress. It is always important to remember that flipped classroom is not a way of technology incorporation into education, but taking a different philosophical approach to education. The flipped classroom approach is basically to encourage constructive learning by providing active learning through interaction between students and teachers. This ensures that you can use your time in communication encouraging the students to use the practice of their new knowledge instead of wasting your time to clarify the fundamentals of a new subject or theory so that it ensures that teachers will concentrate on making the classroom a diverse and distinct learning environment. This transition signals significant cultural changes and aspirations for educators and learners such as (McGrath et al, 2017: 38):

- to require students to be more responsible in their learning;
- presenting students with chances to negotiate with peers and co-creating understanding;
- challenge students by focusing on problems or projects, and research-based learning methods;
- delivering personalized feedback opportunities;
- giving opportunity to transform the lessons according to the responses of the students;
- application of student involvement facilitation techniques;
- improving formative assessment and feedback options

Therefore it brings many disadvantages during the distance learning. First of all it is founded on the belief that our students will prepare for the course. Additionally the instructor must also arrange the content in advance. Therefore teachers also get more time to spend on dealing with students who have little experience, while quicker students may get extra tasks and attempt to clarify the matter in their own words to their peers[4]. Another problem with flipped classroom in Covid-19 pandemic is that our education has became totally depend on the virtual environments so that there is no physical room to flip the classrooms. Maybe this can be compensated by other online options such as livestream coursed or simulations. Therefore out of the class activities refers to asynchronous learning activities such as videos or other multimedia tools and in-class actifities refers to synchronous activities where the difficult and the incomprehensible parts are focused so that discussions, various activities and activities are carried out on the subject, and the subject is reinforced, thus active and meaningful learning is realized. What is learned

[4] https://erasmuscoursescroatia.com/2020/03/26/flipped-classroom-a-perfect-tool-for-distance-learning-or-how-to-use-facebook-in-a-flipped-classroom/ retrieved from 29.11.20

outside of the classroom increases the time to be used in class (Basal, 2015). Firstly, before schooling, the students addressed the output task, the teacher offered feedback, comments and then outlined the typical problems in the production task of the students. Second, the teacher instructed or taught just-in-time, according to the problems, outlined in the internet discussion group or during the delivery of the production task. Thirdly, diverse learning experiences will be conceived for students to provide more resources, such as interviews, discussions, role plays, simulation negotiations, etc. to interact with the teacher and peers, to further digest, absorb and apply what they learned. The instructor will select a student to respond to questions arbitrarily, to engage in a conversation, exchange thoughts, etc in order to retain his interest and also to track his learning process during the online synchronous training period. In synchronous online instruction, the instructor assessed student performances in different aspects. On the postclass level, the extended challenge was created to further illustrate the students' achievements of internalizing information and absorbing it in a synchronous online learning scene to consolidate learning content. The finished completed homework should be reloaded to the platform and the final chapter exam is over. During that process students should also communicate with the instructor and peers as they experience learning difficulties[5].

For instance, in the recent study of Guraya (2020) shows how flipped classroom can be actualized in distance learning education. The face-to-face teaching pedagogy was smarterly turned into a remote teaching module using Blackboard® and MS Teams® interfaces at the College of Medicine in Sharjah, United Arab Emirates. The first stage was to provide the students with a pre-recorded video lecture by the instructor. The key emphasis of this pre-recorded lecture was an instructional, cognitive interpretation of the subject. The lecture will finish with a dynamic, clinical situation that would guide students to learn how to address the issue with the Blackboard® or MS Teams® community discussions. A live, immersive resource session on the same subject was held two to three days after the pre-class lecture. The session begins with a resolution of the same situation in which the pre-class lecture concluded. Finally, after-session activities were offered to students to discuss small groups, which they learned through live chats. It should be noted that transition to a remote distribution format was challenged as follows (Fogg, Maki, 2020):

1- Engaging students with the lecture content: Additional steps required to present the information informatively and interactively without communicating personally with the students and include students in the development of the lecture.

2- Replacing the hands-on learning activities: Since students could no longer reach the lecture room and measurements on living systems required a simulated experiment that matched the lesson objectives.

[5] https://assets.researchsquare.com/files/rs-84578/v1/cccfed35-424c-4dd5-9727-bdd9853cdb40.pdf retrieved from 29.11.2020

3- Creating a sense of community within the class: Since students could no longer communicate in person, extra time needed to be built in to promote peer-to-peer interactions.

4- Promoting collaboration in group projects: As this was no longer an option, additional scaffolding was required to enable students to cooperate.

5- Making all students accessible: For students with restricted internet connectivity, customer service and/or time constraints to make this course accessible, more flexibility required to be integrated into the course.

Finally, it should be bear in mind that due to the COVID-19 pandemic, our education system totally depend on distant trainig, goverments should follow a successful strategy integrating online and offline teaching and learning activities[6]:

- Guarantee access to internet and availability of computers, laptops, or tablets
- Adopt proper Virtual Learning Environments (VLE)
- Rethink the role of broadcasting education
- Improve availability of learning technology for students with Special Educational Needs and /or Disabilities
- Support teachers
- Support parents

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6 https://publications.jrc.ec.europa.eu/repository/bitstream/JRC121071/jrc121071.pdf retrieved from 29.11.20

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