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FLIPPED LEARNING AS INTERACTIVE LEARNING ENVIRONMENT

Abstract. The use of the flipped classroom as an alternative to the traditional learning environments has been increasingly attracting the attention of researchers and educators. The advancement in technological tools such as interactive videos, interactive in-class activities, and video conference systems paves the way for the widespread use of flipped classrooms. It is even asserted that the flipped classroom, which is used to create effective teaching environments at schools, is the best model for using technology in education. Studies about the flipped classroom appear in different disciplines including information systems, engineering, sociology, and humanities, mathematics education, and English composition. The purpose of this paper is to fulfil the needs regarding the review of recent literature on the use of the flipped classroom approach in education.

Keywords: flipped learning, flipped classroom, inquiry-based learning, educational design, pedagogical strategy.

According to the Flipped Learning Network, “Flipped Learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter”. Flipped Learning Network [9].

Cooperative learning is an educational approach which aims to organize classroom activities into academic and social learning experiences. There is much more to cooperative learning than merely arranging students into groups, and it has been described as "structuring positive interdependence. Students must work in groups to complete tasks collectively toward academic goals. Unlike individual learning, which can be competitive in nature, students learning cooperatively can

capitalize on one another's resources and skills (asking one another for information, evaluating one another's ideas, monitoring one another's work, etc.) [11].

Traditional vs flipped classroom.

Traditional classroom.

In the traditional classroom, the teacher delivers new learning to the students face-to-face. Students listen, interact, take notes, and then consolidate new knowledge during homework or follow-up tasks.

Flipped classroom.

In the flipped classroom, students do the basic learning prior to working with the teacher and then cover the applied learning and any problems in class. This means there is less passive learning in class and more active and personalized learning. Students access a teacher-created website and/or watch teacher-created/sourced videos on their devices. They are able to stop and rewind the information as often as they need until they understand the concept.

Class time is freed up for:

- student-centred learning activities;
- inquiry-based learning;
- project-based learning;
- collaborative work;
- teacher-assisted learning.

By flipping learning and integrating cooperative learning, our role in the classroom is now more of a facilitator and guide and the students are the protagonists. Teachers should encourage them to be responsible, active, curious, compassionate and tolerant. Flipping learning encourages students to be more responsible for their own learning as they are no longer spoon fed information in class; they are responsible for accessing and engaging with the direct instruction (video, podcast, text...) and resolving any doubts.

For example: Students watch a video about future plans/arrangements/ timetables in English in their virtual space, for example Google Classroom, before the deadline set by the teacher After/while watching the video as many times as the student deems necessary they complete a quiz in Google Forms to check understanding. After completing the quiz, they check their answers and the feedback left by their teacher to explain any incorrect answers. They have access to further study material in the feedback in the form of a link. They make a note of anything they don't understand, to bring to class. Here we can see how students play an active role in their own learning. This active role continues in the group space (classroom) when students work cooperatively. Each member has a responsibility within the group (secretary, spokesperson, editor, timekeeper, facilitator...) and each group has a joint responsibility for achieving their common goals.

The follow up to the "lesson" in the individual space above might be to do some practice exercises in groups in class. The common goal is that everyone understands and has the correct answer. All members exercise their responsibilities to achieve the desired outcome. To achieve a common goal, students need to collaborate. In the above task, to ensure all group members have the correct answer and understand,

students need to discuss and negotiate. Equally, a more creative task requires students to make decisions collaboratively.

A follow up task to the practice exercises may be to create a study poster on future plans and arrangements. Again students need to plan and organize their work together and distribute tasks. Taking the direct instruction out of the classroom means that there is more time in class to dedicate to activities like this and the higher order thinking skills such as creating.

Some of the activities in the group space to develop higher order thinking skills since flipping learning are:

- Making instructional videos to explain something/teach classmates how to do something;
- Making study aids for group mates (study posters, quizzes in Google Forms);
- Role-playing / improvisation activities;
- Making e-books;
- Digital storytelling;
- Making podcasts.

As well as being responsible and collaborating, when students work cooperatively, they need to show respect, compassion and tolerance towards their peers. This is one of our criteria for assessment. Students are encouraged to listen to ideas but also question them respectfully, discussing and analyzing assumptions, beliefs and values...putting into practice critical thinking skills. They are also encouraged to identify, analyze and resolve problems together logically.

Flipping learning has provided opportunities to develop digital literacy in both the individual and the group space. Students have a virtual space where all their resources and assignments for the direct instruction are stored. Teachers use Google Classroom for this purpose as it is relatively easy for students to use. They can also communicate with their teacher and group mates here via the public and private messaging system. Apart from using the comments function for questions and feedback, you can use it to have class discussions about topics of interest. It is the students themselves who choose the topics and begin these discussions (another opportunity to put those critical thinking skills into practice!).

In short, integrating flipped learning and cooperative learning has put the focus on to students. Learning is more active, more collaborative, more creative, and students are (on the way to being) more responsible, more autonomous and more respectful.

Concerns About Flipped Learning.

Skeptics of Flipped Learning say that there is little that is new in it. They say that good teachers always try to meet the needs of individual students and use the tools that will help them do that. That is true. And, as noted previously, the potential of flipped Learning lies not in the videos but in how delivering direct instruction in a different environment opens up time and space inside the classroom to engage in higher leverage instructional practices and individualize learning. Teachers need to be thoughtful about how to maximize the opportunity for students to become active learners who are empowered to take charge of their own learning. Even critics

acknowledge that the changeover to the flipped Learning model encourages teachers to re-evaluate their teaching (e.g., Stumpenhorst, 2012) [7].

Another concern is voiced by teachers and others who believe flipped Learning undervalues the power of good, engaging, face-to-face Socratic teaching. Critics worry they won't have the opportunity to do that kind of teaching because class time is devoted to students collaborating, student-generated and -led activities, and other interactive exercises. However, Marshall [2] points out that teachers are more important than ever in flipped Learning. However, instead of the teacher lecturing to students, their role is to "lead from behind." In other words, the teacher has the tasks of "observation, feedback, and assessment" and guiding the learners' thinking, in the best spirit of the Socratic Method. The difference, and perhaps a major benefit, according to Marshall [2] is that this instruction is spontaneous, cannot be planned out, and is relevant for the learners at that moment. Furthermore, the learners themselves can fill these same three roles as they observe and provide feedback to each other during class and as they assess their own learning. Gary Stager, an educator, speaker, and journalist, is a critic of flipped Learning. He voiced three major concerns during a 2012 radio debate with Aaron Sams on Southern California Public Radio [6]. First, he asserts that, the model emphasizes traditional homework and lectures, although their position is flipped.

Second, he says that the demand for Flipped Learning results from flaws in the curriculum, which requires that students study ahead of time. Finally, he argues that the flipped Learning model is a means of standardizing learning. He worries that in the future that the direct instruction delivered via video will be outsourced to mediocre, low-cost teachers to replace more highly paid veteran teachers.

Should Flipped Learning devolve into little more than lectures and routinized, low-level homework exercises, stager would certainly have a point. An instructional model is but a framework and, whether it succeeds or not, depends almost entirely on the implementation. Boring lectures can be delivered digitally almost as easily as they can be presented in class and class time in a Flipped Learning model could be taken up with filling out worksheets and doing computerized drills. But that is not the intent nor is it inevitable.

Indeed, teaching successfully in a flipped classroom is even more demanding than is traditional teaching. So, if Flipped Learning is to succeed, teachers will need to be trained and supported in how to engage students more deeply in content.

In regard to Stager's concern about mass-produced, cheaply made videos becoming the mainstay of flipped classrooms, Sams and Bergmann think that the model works best when teachers make their own videos for their own classes. However, the use of videotaped lessons does make it possible for the teacher to find great instruction produced by others, such as those found on Khan Academy or TED-Ed. Those lessons could introduce students to an alternative style of teaching or supplement lessons on subjects or provide lessons in areas in which their teacher is not expert.

Another concern that is raised is that not all students have access to the high-speed internet or computers. While this is a legitimate concern, it should be noted

that home access to computers and the internet has expanded greatly over the last two decades. in 2010, almost six out of every ten children ages 3 to 17 used the internet and almost 85% had access to a computer at home. Moreover, the ways that even low-income students can access digital content are increasing rapidly. (Child trends, 2012)[3].

Flipped Learning might not work for all educators and students. Not all educators are successful in their implementations and there have been students who after trying the flipped classroom experience, prefer traditional learning. In their book, Bergmann and Sams [1] noted that for lower elementary grades, Flipped Learning might be appropriate for certain lessons or units, but not entire classes.

Moreover, as we illustrate throughout this paper, more qualitative and quantitative research needs to be done to identify how the potential of the model can be maximized. The existing research clearly demonstrates that the Flipped Learning model can be one way to create a classroom environment that is learner-centered. This is something that most teachers want to do but are constrained by the current organization of schools and other barriers. Michael Gorman [4] observed that any learner-centered educator would provide activities in the classroom that are action based, authentic, connected and collaborative, innovative, high level, engaging, experience based, project based, inquiry based, and self-actualizing. The Flipped Learning model provides that bridge to a learner-centered classroom environment, thereby enabling deeper learning[1] that educators are seeking[10].

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