The Flipped Classroom approach

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Secondary stage is a period of transition when the individual changes from a child to an adult rapidly - physically and psychologically. Secondary students are encountering physical, social, emotional, and intellectual changes in their lives. It is at this time that students need a new approach, like the flipped classroom, to be brought in by the teachers into the classroom.

An instructional strategy, the flipped classroom is one that can provide students with the means to increase one-to-one interaction while reducing the direct-instruction in their learning process. This approach can provide a self-paced instructional method that can effectively support their learning. Teachers who use the Flipped Classroom approach can add additional supporting elements like assessment for learning, problem-based inquiry, and strategies for differentiation. They can also create an environment for instruction that is more flexible than the traditional classroom settings we've seen till date. In this article you will find a set of pedagogical practices intended to improve education outcomes by increasing students' inclusion in their learning environment. This technology is widely promoted in international educational circles and is an increasingly important idea for Indian Education Policy.

Enrollment in the 14 to 16 age group continues to be very high, with more than 92% of children in secondary school [1]. And the proportion of out of school students in the 14 to 16 age group has declined since last year. The proportion of secondary schools that comply with teacher - pupil ratio (TPR) norms has increased every year in 2013. Secondary students’ stage is the most challenging transition in their schooling [2]. By the time students enter the secondary grades, they have learned a great deal about their basic education. Secondary education is not only used for reading and writing the subject, but also to increase students’ understanding of the world. Secondary students require continual practice over time to refine their skills in thinking, reading, writing and technical analysing.

Secondary students may:
- accustom to receiving information quickly with electronic media such as mobile, laptop, internet, etc.,
- prefer simplified learning materials and multitasking
- prefer non linear access to information like ICT in class room
- participate peer group studies through social interaction through a variety of technology [3]
- be a slow, gifted students and high achieving students
- annoy over load of books and who love to learn

The increased emphasis on higher order thinking, team work, and problem-solving are seen as critical components in modern learning theory [4].

The above scenario applies certain pressure on physical and mental academic work to improve and enhance the in-person educational experience of the students. Secondary students are not the only ones demanding higher outcomes from schools. There is also increasing pressure from job market.

Definition of Flipped Classroom

There is a considerable amount of critic in academic circles at all levels, focused around the flipped classroom. These appear mainly as academically-oriented newspaper articles and online webs. The definition of the flipped classroom is that events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa [5].

Method: Inside the classroom

Traditional classroom: Lectures, questions & answers

Flipped classroom: Practice Exercises, Problem Solving & Group-Based or Open-Ended Problem Solving
Method: Outside the classroom
Traditional classroom: Practice Exercises & Problem Solving
Flipped classroom: Video Lectures, Closed-Ended Quizzes & Practice Exercises

Framework for Flipped Classroom
The framework used for explaining the flipped classroom typically focuses on reasons for not using classroom time to deliver lectures. As most commonly proposed for secondary education, the “flip” means moving lectures from the class to pre-class homework, while reserving class time for having students to do the problems and exercises that have traditionally been the domain of out-of-class assignments. Actual “Flipped Classroom” is that new ICT technologies make it easy to convert instructor lectures through digital recordings and place these online for student access outside of face-to-face class time [6].

As a result, students can review lectures in advance of the regular class, then have class sessions for working together on the assignments that traditionally have been done as homework. Not only are students seen as gaining through working together on “homework” problems in class, but instructors are able to more quickly see where students are struggling and provide remedial support.

Experts argue that by using class time for student discussion, collaboration and problem solving, the traditional lecture based mode of instruction can be replaced by a more student-centred learning that is not only more effective but also achieves larger goals of 2020 year skills [7].

In the few studies that have emerged of flip teaching, the reports note that the positive learning differences are seen is when changes occur in the uses of classroom time [8, 9, 10, 11]. These are changes that go beyond flipping lectures for simple exercises and practice problems typically assigned as homework. The researchers particularly point to applying what is knows from research based effective practices. This argues for more extensive remodelling of instruction as part of flipping the classroom. Musallam [12] stated that ‘it is a thing you do in the context of an overarching pedagogy, not the pedagogy itself’ [12].

Significantly, much of the students’ feedback need is provided in class, reducing the need for instructors to provide extensive commentary outside of class [13]. The flipped classroom is gaining support at all levels of education, including in primary, secondary and post-secondary classes.

Advantages of Flipped Classroom
This ICT technology provides additional supporting instructional material for students that can be accessed online. This frees up classroom time that had previously been used for lecturing. This method revealed three major findings: students are doing less homework in a Flipped Classroom than in a traditional lecture-based classroom, students enjoyed learning in a Flipped Classroom environment, and students benefited from watching their lectures in condensed-lesson formats.

(i) For Students
Students can pause and rewind their teacher created contents. Struggling students have more time with the teacher. Students who “get it” are able to move on and extend their learning. Students are learning and applying technology skills at all levels. Students are more engaged in their learning work. Students are working collaboratively with each other.

(ii) For Teachers
Teachers can spend more time with individual groups of students. Teachers can differentiate their instruction according to the level of students. Teachers are able to reach students in their digital language. Teachers can work more collaboratively. Teachers are excited about teaching and learning process.

Flipped class room approach in Secondary stage
The National Curriculum Framework 2005 (NCF) [14] gives out a framework for governments (central and state) to develop their curriculums, text-books and standards for teaching practices, as recommended by National Centre for Education Research and Training (NCERT). The NCF explicitly includes the use of practices along child-friendly lines. The framework highlights positive and negative teaching behaviours and practices that include descriptions of a suitable physical environment within schools, and suggestions for the development of nurturing and enabling environments within the classroom in the chapter “School and Classroom Environment”. It also stresses the importance of the participation and respectful inclusion of all children and gives advice on the appropriate use of learning resources for teaching.

Recommendations that emerged from the findings for improving Flipped Classroom implementation included: interactive instructional videos, increased in-class learning activities, and alterations to assessment. Flipped Classroom teachers can set up a website, mail account, module, wiki, etc. to house the videos, blogs, and assignments. Apart from the above, teachers may know what product to develop or in class assignments in line with videos. Delivery of video is very important
such as quality, time, screens cast and embed.

Conclusion
The National Curriculum Framework (2005) strongly recommends the use of child-friendly pedagogical practices such as increasing pupil participation during classroom sessions, shifting away from rigid classroom teaching structures, creating more lively classrooms and drawing on pupils’ experiences to enrich lessons and provide examples. The Right to Education Act (2009) re-emphasizes the use of these practices.
While this article is intended to provide perspective on the effectiveness of Flipped Classroom practices in improving pupil learning, further research will be needed with a focus on examining the impact of Flipped Classroom practices in a wider range of contexts and outcomes. The future research of this area has implications for instructional delivery in classrooms. It would also be highly valuable to expand the psychological evaluation of the effects and effectiveness of these classroom practices, before they are further incorporated in policy.

References
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Doi: 10.1126/science.1201783

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