# FLIPPED LEARNING APPROACH FOR B.ED STUDENTS : AN EVALUATIVE STUDY

**Dr. Geeta Pathak**
Assistant Professor,
Guru Ramdass College of Education, Delhi.

**Abstract**

*Over the last half a century and particularly, in the current decades, teaching learning has been enduring radical changes. There has been a swing towards student centred classrooms with teacher's role more as catalyst of learning rather than a despotic master. The purpose of this study was to examine the efficacy of traditional and flipped Learning Approaches for B.Ed Students. To examine the benefits, shortcomings, perceptions, and academic results of the flipped classroom model while using technology as a supporting tool. A traditional B.Ed IInd year course (Code 216: Guidance & Counselling) was "flipped" so that direct instruction occurred prior to class time. Classroom instruction being the independent variable with two levels, traditional and flipped; whereas, Students' academic achievements, Assignment and Field work activities submitted for internal assessment by pupil teachers are the dependent variables. The cognitive level of questions asked by pupil teachers and teacher educators during class serves as a dependent variable that will gauge the level of student cognition. Perceptions of course format serve as a dependent variable that will provide insight into teacher and student preferences of learning method.*

*A Sample of 49 students was randomly asked to opt for Flipped or Traditional Class instructions. Pre-test Post-test quasi experimental design was used and SPSS was used to analyse the data. The results of study indicated that the use of the flipped Learning Approach was successful. Students appreciated the flexibility of the learning at their own pace and the value of interactive face-to-face class discussions. Not only did they prefer Flipped learning but their academic achievements were significantly better than those being taught by Traditional Approach.*

**Keywords**: *Flipped Learning Approach, Traditional Approach, Higher Education, B.Ed Students, Academic Achievements.*

## Introduction

Education, especially Teaching Learning process is facing a radical dynamism now days. With the increase in Understanding towards Psychology of learners, there comes a constant change in approach, technique, attitude and belief towards teaching & learning. In recent decades, the student-centred learning approach has shown significant learning gains and has

reformed teaching styles in many higher educational institutions globally. Over the past 30 years, more flexible, student-centred classroom teaching methods have been advocated based on the concepts of "discovery" learning and "active" learning (Greitzer, 2002). Where the advanced economies are talking about Cybergogy (Follow Technology i.e. Technology driven learning) approaches, the countries like India, are still focusing on Pedagogical (Follow Teacher i.e. Teacher Centered Learning) approaches. The teacher-centred learning approach uses lecture-based instruction which is economical and viable for teaching a large number of students at a time. Lecture-based instruction is where the teacher takes the active role of dispensing knowledge in a classroom. The propagation of information is in a one-way direction. In such an environment, the students are passive learners, where they rely on learning by listening, memorizing, and on the repetition of the taught knowledge. The major shortcoming in passive learning is that students only have a basic recollection of knowledge - which means they have merely achieved a low level of thinking skill.

To attain a higher end conceptual level of thinking, the students need to take responsibility for their own learning and become active knowledge seekers. The Andragogical (Follow Student i.e. student-centred learning) approach emphasizes engaging learners to structure their learning. With this approach, students become active learners and the teacher's role now moves to that of being a facilitator by initiating classroom discussions to ensure that all the students achieve understanding for meaningful and effective learning (Goh, 2012). This student-centred approach should be at the heart of our educational system.

**FLIPPED LEARNING**

Virtually unknown a few years ago, the Flipped Learning model of instruction is the best example of Student- Centered Approach or Andragogy. While often defined simplistically as "school work at home and home work at school," Flipped Learning is an approach that allows teachers to implement a methodology, or various methodologies, in their classrooms.

The Four Pillars of FLIP are:

1. **F**lexible Environment
    - Establishing spaces and time frames that permit students to interact and reflect on their learning as needed.
    - Continually observing and monitoring students to make adjustments as appropriate.
    - Providing students with different ways to learn content and demonstrate mastery.

2. **L**earning Culture
    - Giving students opportunities to engage in meaningful activities without the teacher being central.
    - Scaffolding these activities and make them accessible to all students through differentiation and feedback.
3. **I**ntentional Content
    - Prioritizing concepts used in direct instruction for learners to access on their own.
    - Creating and/or Curating relevant content (typically videos) for students.
    - Differentiating to make content accessible and relevant to all students.
4. **P**rofessional Educator
    - Making Educator/Teacher available to all students for individual, small group, and class feedback in real time as needed.
    - Conducting ongoing formative assessments during class time through observation and by recording data to inform future instruction.
    - Collaborating and reflecting with other educators and take responsibility for transforming teachers' practice. (FLN,2014)

In this approach, some or most of the direct instruction is delivered outside the group learning space using video, Reading Material or other modes of delivery. Class time is used by students to connect with in hands-on learning, pool resources with their peers and assess their progress rather than traditional direct instruction delivery (FLN, 2014). Flipped Learning is particularly compatible to higher education settings for a variety of reasons. The in-class discussion and enrichment activities allowed by moving content delivery outside of class time provide opportunities for students to develop vital skills needed in the 21st century, including critical thinking, creativity, communications, and collaboration. The approach can be predominantly useful in large lecture courses where student engagement and interaction is usually minimal.

When students receive the lecture outside of class they can use time in class with their peers more effectively by breaking up into smaller discussion groups or engage in Project work, Experimentation, Assignment Completion or other in-class activities. Teachers also make more productive use of their time by reassessing content that students actually need help with and initiating as well as channelizing student discussions in right direction. The Flipped Learning

Approach also allows for Inclusive learning in classes of all sizes and abilities; since students can review the lecture content at their own pace and ask questions on their own time.

**RELATED LITERATURE**

The flipped learning promotes an environment which increases the interaction between the students and teachers and engages the students in learning through application and practice. In this aspect, flipped learning use a student-centred approach as it focuses on student learning and it places the responsibility for learning more on the shoulders of students than teachers while giving them a greater impetus to experiment (Sams, 2012). This can be seen from - the Bergmann and Sams' instructional design - where students explore and make sense of their learning through active learning activities like inquiry learning, problem-based learning and peer collaboration (Sams, 2012). This creates the face-to-face time to have a "much deeper interaction" between the teacher and student as they engage and interact on case studies, and discuss particular problems (Leckhart & Cheshire, 2012; Gerstein, 2011). The Flipped learning promotes personalized learning as students can pause, re-wind and re-watch the online video at their own pace - one of the major, evidence-based advantages of the use of video is that learners have control over the media with the ability to review parts that are misunderstood, which need further reinforcement, and/or those parts that are of particular interest (Gerstein, 2011). This has a positive effect on student learning and achievement. Even implementing a flipped learning classroom for a large class size may boost the students' academic attainment as it generally enables more focused teaching and learning to take place in the classroom despite the class size (Kachka, 2012).

Flipping a classroom gives more time in class to be spent on engaging activities (Crouch, & Mazur, 2001). Research revealed in June 2014 that there were 24 studies related to the flipped classroom. A number of those studies examined student performance. In conclusion to this study, the results are encouraging, but there is a need to look more into the influence of flipped classroom instruction on learning outcomes (Bishop & Verleger, 2013).

Reichmann and Grasha(1974) further contend that in the flipped classroom, technology is used to switch lecture to homework. Students watch recorded video lectures through media such as YouTube prior to class. Then during class, students complete works that are usually given as homework- for example review questions, lab reports or worksheets. When using the flipped classroom, instructors allow students to investigate the concepts introduced during the video lecture in the way that makes them comfortable- for example group work or independent reading, while focusing on gaining content knowledge (Lage, Platt and Treglia, 2000).

**LIMITATIONS OF THE FLIPPED LEARNING APPROACH**

An effective flipped learning classroom requires careful preparation and there is concern regarding the amount of time and effort the instructor has to put in. The out-of-class and in-class elements must be carefully integrated for students to understand the model and be motivated to prepare for the class. It takes effort, but planning, implementing and revising are all double tasks and each effort builds a block upon which the next can be built. The important component of this process is to develop high-level, engaging questions that serve to deepen students' thinking and to address misconceptions in the lesson (November & Mull, 2012).

For this, we need special training for teachers/Educators. But unfortunately, the process of updating teacher education has been very slow. It happens that the job of teacher educators is not to *train* the next generation of teachers but to *prepare* them. Teacher education institutes need to be seen as complex sites in which Teacher educators work simultaneously with prospective teachers on beliefs, teaching practices and creation of identities—their students' and their own. The shift away from training to formation is only to build the "capacity" of the candidate to be able to make seasoned professional judgments. But then what do the Teacher educators have to do in their classrooms? The Answer to this dilemma is "Flipped Learning Approach". To introduce Flipped learning approach to schools, we need to give its first hand experience, day to day Practical demonstration to Teacher Trainees. This idea leads to this present study.

**OBJECTIVES OF STUDY**

The Study was based on three focus Questions:

1. To what extent do the flipped learning approach leads to success in the Teacher Education course?
2. Does independent learning allow for students to complete work in class, thereby reducing workload and stress in the B.Ed classroom while having positive attitude towards Flipped Learning?

This leads us to following objectives:

- To examine the efficacy of Traditional and Flipped Learning approaches in B.Ed. Classrooms.
- To examine the perceptions, and academic results of the flipped learning model while using technology as a supporting tool.
- To examine the impact of Flipped learning on the workload and stress in the B.Ed classroom while still increasing content knowledge.

**Methodology**

The research will be a non-equivalent Quasi-Experimental Group Design study. A traditional B.Ed IInd year course (Code 216: Guidance & Counselling) was "flipped". Students were asked to opt for either Traditional or flipped courses. Classroom instruction being the independent variable with two options, traditional and flipped; whereas, Students' academic achievements, Assignment and Field work activities submitted for internal assessment by pupil teachers are the dependent variables. The cognitive level of questions asked by pupil teachers and teacher educators during class serves as a dependent variable that will gauge the level of student cognition. Perceptions of course format serve as a dependent variable that will provide insight into teacher and student preferences of learning method.

**Sample**

The effect of the flipped classroom on student achievement, attitude towards approach and stress levels was tested on 49 students (44 females,5 males) in the B.Ed IInd year course (Code 216 : Guidance & Counselling). Students were asked to opt for Traditional learning Group or Flipped Learning Group. The Experimental or Flipped Learning Group consisted of 29 students (27 females, 2 males) and the Control or Traditional Learning Group consisted of 20 students (17 females, 3 males).

**Process**

The Control Group was taught through Traditional approach for Semester IV duration of (January- April) i.e. 17 weeks. Similarly the Experimental Group was taught through Flipped approach for same duration of 17 weeks. Both the Groups were taught by same teacher i.e. the researcher herself.

Traditional Approach consisted of Lessons delivered in the class and Reading material or references, Project work as well as field work as Homework Assignments. Whereas, the Flipped Learning Approach consisted of videos, Lecture Notes, Reading material & References, by using technology as a supporting tool. Students were provided with an E-platform as a Google Group "Constructive Psychologists", where all the videos and reading material was posted. Students were responsible for watching videos or reading notes and submitting questions on the E-Group platform about concepts after watching the videos or a summary if they understood the lecture and had no questions. The questions or summaries were used to stimulate classroom discussions. The remaining classroom time was devoted to working on projects, group activities, discussions, readings, research and other assignments that may otherwise be assigned for homework.

T-L process was independent variable whereas the academic achievements & perceptions of course approach will be served as dependent Variable.

**Data Collection**

The Data was categorized into two themes based on the research questions:

1. Student Academic Achievement Data (Quantitative) .It is an Internal Assessment of 25 marks consisting of
    - Summative Assessment Record (i.e. Internal exam Marks) =10 marks
    - Assignment Assessment Record = 5 marks
    - Group Presentations Assessment Record = 5 marks
    - Field Work Assessment Record = 5 marks As per College Assessment Norms.
2. Student Attitude Data (Qualitative)
    - Self Prepared Questionnaire (Perceptions regarding T-L process) where students were asked to reflect on their learning and stress levels throughout the process.

| **Focus Questions** | **Data Source 1** | **Data Source 2** |
|---|---|---|
| To what extent does Flipped learning approach lead to success in the B.Ed classroom? | Student Academic Achievement Data | |
| Comparison between traditional & Flipped learning approach lead to success in the B.Ed classroom | Control Group & Experimental Group Academic Achievement Data, t test | |
| Flipped Learning allow for students to complete work in class with teacher assistance, thereby reducing workload and stress in the IB classroom? | | Self made Questionnaire |

**Data Analysis**

1. **From Students' Academic Achievement Record**:

| **Student Groups** | **Mean** | **Standard deviation** | **Sample size** | | **T-Value (For Post Test)** |
|---|---|---|---|---|---|
| **Experimental Group** | 7.27 | 4.10 | 29 | Pre-Test | 2.63 |
| **Control Group** | 7.67 | 4.97 | 20 | | |
| **Experimental Group** | 22.23 | 3.98 | 29 | Post-Test | |
| **Control Group** | 18.65 | 4.37 | 20 | | |

Results of repeated measures ANOVA showed a significant main effect of the test with $F$ (1,50) = 166.12, and Wilk's Lambda = .23, $p$ <.001. This means that the performance on the post-test was better than the performance on the pre-test for both Experimental and Control Group Students. The significant results of the tests of between-subjects effects, with $F$(1,50) = 5.20, $p$ <.05, suggested that the overall performance of Experimental Group was better than Control Group. The descriptive statistics shows that the mean improvement score (defined by the post-test score minus the pre-test sore) for both Experimental and Control Group Students was positive. This means that the students taught with Flipped Learning Approach showed more improvement than those taught with traditional Approach.

An independent samples t-test was conducted to compare the improvement scores of pre test and post test to check if there was a significant difference. The group statistics shows that t= 2.63 which shows significant change in post test results.

2. **For Self Prepared Questionnaire** (Perceptions regarding T-L process) where students were asked to reflect on their learning and stress levels throughout the process on rating scale 1-5 (ranging from Totally Disagree, Disagree, Neutral, Agree, Totally Agree).

| **Questionnaire Statements** | **Control Group (N=20)** **Average Score** | **Experimental Group(N=29)** **Average Score** |
|---|---|---|
| The Instructional Approach used in & out of Class helps me in deeper Conceptual Understanding | 2.1 | 4.3 |
| The Approach helped me in learning at my own pace. | 1.2 | 3.9 |
| The Approach was useful in Collaborative learning | 1.1 | 4.1 |
| The Home assignment was necessary part of learning. | 2.3 | 4.6 |
| Class work was interesting & stimulating | 2.5 | 4.2 |
| It made me started looking forward for next class. | 2.4 | 4.1 |
| It helped me in coming out of my shell and clearing doubts | 2.1 | 3.9 |
| It was an actual interactive two-way process. | 1.3 | 4.7 |
| Workload was manageable | 2.1 | 3.8 |

| | | |
|---|---|---|
| Assignments were stress free endeavours | 1.1 | 4.3 |
| Group Projects, Presentations & Discussions were very effective in in-depth Knowledge gains. | 2.1 | 4.1 |
| Will like to be taught with same approach again | 2.1 | 4.3 |

The Data showed that there is a very significant difference in the perception of students regarding traditional & Flipped Approach. Experimental Group was quite satisfied with the experience & outcomes of Flipped Learning. The In & out of Class activities, Group Collaborations, Workload & Stress levels etc. were satisfactorily handled by experimental group where as the control group was rather unsatisfied by components like pace, collaboration, interaction and stress.

**Conclusion**

The study aimed to check the efficacy of Traditional vs. Flipped Learning Approaches. The Study answered both of the research questions.

1. Students' Academic Assessment Scores were relatively higher in Flipped learning Approach rather than in Traditional Approach. Even the Quality of Field Work, Assignments, Projects and Group Presentations was significantly better in Flipped Classrooms. The Higher order Thinking Questions and discussion points raised by students in Flipped Classrooms were quite inspiring. Whereas the traditional Approach leads the students to routine performance.
2. The overall attitude of the student was quite positive and they participated very actively in the Flipped class.

By allowing students to complete work independently in class and with teacher assistance when required, student stress levels decreased. The majority of students in Flipped Class, 37%, ranked their stress in ESS as a two, on a scale of 1-5, while in Traditional Class stress level was ranked as a five by 47% of students. No students stated their stress level in Flipped Class as higher than four.

The feedback from the Flipped class was overwhelmingly positive. Throughout the process, students were open and honest about their feedback and provided great suggestions about how to improve the way the flipped learning Approach was working. Students appreciated the flexibility of the online video viewing and the value of interactive face-to-face case discussions. On the other hand, students were burdened by the amount of time spent on viewing the online videos thoroughly, by quizzes and examination dates in relation to the online video due dates, and by the time commitment of this course and others. Specifically, a

common complaint was the longer time required to view the videos than their actual lengths because of note-taking. This experience deserves close consideration as it exemplifies student limitations in self-regulated learning,– (ie, the ability and process of setting learning goals, planning ways to achieve those goals, self-monitoring and evaluating the progress, and modifying the plan when necessary) and perhaps indicate changes they needed to make to their study habits.

There is a deeper pedagogical issue associated with a flipped classroom that extends past student performance .It is the potential for a flipped classroom ,not only to improve students' command of the material at hand but also to create overreliance on teacher to lead students through the material and impede learning in the long term. Devoting more classroom time to activities requiring higher order cognitive thinking will reap rewards at the beginning of a course, but the technique can still promote students' ability to teach each other and themselves if class activities are performed with less and less direct instructor support as the semester progresses.

**References**

Alvarez, B. (2011). Flipping the Classroom: Homework in Class, Lessons at Home. Learning First Alliance. Retrieved January 15, 2015, from http://www.learningfirst.org/flippingclassroom-homework-class-lessons-home.

Bergmann, J., & Sams, A. (2012). Flip your classroom: Reach every student in every class every day. Eugene, OR: ISTE.

Bishop, J., & Verleger, M. (2013). The Flipped Classroom: A Survey of the Research. Crouch, & Mazur, 2001. Flipping the Classroom. (n.d.). Retrieved October 28, 2015, from http://www.cte.cornell.edu/teaching-ideas/designing-your-course/flipping-the-classroom.html

Flipped Learning Network (FLN). (2014) The Four Pillars of F-L-I-P from www.flippedlearning.org/definition.

Educause (2012). 7 Things You Should Know About Flipped Classrooms. Retrieved from http://www.educause.edu/library/resources/7-things-you-should-know-aboutflipped-classrooms.

Eunyoung Hong, C., & Lawrence, S. (2011). Action Research in Teacher Education: Classroom Inquiry, Reflection, and Data-Driven Decision Making. Journal of Inquiry & Action in Education, 4(2), 1- 17. Flipped Classroom Field Guide. (n.d.). Retrieved fromhttp://www.cvm.umn.edu/facstaff/prod/groups/cvm/@pub/@cvm/@facstaff/documents/content/cv m_content_454476.pdf

Gerstein, J. (2011). The Flipped Classroom Model: A Full Picture. Retrieved from http://usergeneratededucation.wordpress.com/2011/06/13/the-flipped-lassroommodel-a-full-picture.

Greitzer, F. L. (2002, September). A Cognitive Approach to Student-Centred e-Learning. In Proceedings of the Human Factors and Ergonomics Society Annual Meeting (Vol. 46, No.25, pp. 2064-2068). SAGE Publications.

Freeman Herreid, C., & Schiller, N. (2013). Case Studies and the Flipped Classroom. Journal of College Science Teaching, 42(5), 62-67.

Herreid, C. F., & Schiller, N. A. (2013). Case Studies and the Flipped Classroom. Journal of College Science Teaching, 42(5), 62-66.

Lage, M.J., Platt, G.J., & Treglia, M. (2000) Inverting the classroom: A Gateway to creating an inclusive learning environment. Journal of Economic Education, 30-43

Kachka, P. (2012). Educator's Voice: What's All This Talk about Flipping. Retrieved January 15, 2015, from https://tippie.uiowa.edu/faculty-staff/allcollege/kachka.pdf.

Leckhart, S., and Cheshire, T. (2012, April 16). University Just Got Flipped: How Online Video is Opening Up Knowledge to the World, The Wire. Retrieved fromhttp://www.wired.co.uk/magazine/archive/2012/05/features/university-just-got-flipped.

Ramsey Musallam: Flip teaching Part 1 (Video file). Retrieved January 15, 2015, fromhttp://www.youtube.com/watch?v=rub1VNq2NvM.

November, A., and Mull, B. (2012, March 9). Flipped learning: A response to five common criticisms. November Learning. Retrieved January 15, 2015, from http://novemberlearning.com/resources/archive-of-articles/flipped-learning-a- response-tofive-common-criticisms/.

Zappe, S., Leicht, R., Messner, J., Litzinger, T., & Lee, H. W. (2009). Flipping the classroom to explore active learning in a large undergraduate course. American Society for Engineering Education. American Soci