



## Effectiveness of flipped classroom approach among teacher trainees

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### Abstract

The present study aims to investigate the effectiveness of flipped classroom approach on teacher trainees. Sample included 48 teacher-trainees having Gender, School and Society of B.Ed II<sup>nd</sup> year course, divided in to two groups i.e. 24 in Experimental and 24 in Control Group, from Vaish College Education, Rohtak. For obtaining the data, self-constructed data was used. The findings of the study suggest that flipped classroom approach is more effective than traditional approach of teaching Gender, School and Society of B.Ed II<sup>nd</sup> year course to teacher-trainees.

**Keywords:** flipped class room, teacher trainees

### Introduction

We all are living in a transformation stage as everything is getting digitalized, on-line and ease to access has also enhanced in every field. Traditionally, schools and teachers were the main and reliable source for acquaintance of knowledge. To gather latest information was not an easy task previously rather it was time and energy consuming. But, now we all have entered in the electronic and digital era where the society has tremendous outburst of knowledge in every aspect of life. Electronic era commenced with the use of wireless electronic communication over 100 years ago. Initially, transmitting telegraph messages and the radio were among the important applications of this technology. The messages were passed through the air, invisibly, on radio waves. Since, then the technology use has moved from radio, to recordings, to movies, to television, to computers, to CDs, CD ROMs & the Internet (Wikramanayake G., 2005) <sup>[10]</sup>. In the same manner, the process of imparting education has also gone through major changes. Now days, technology has changed the scenario of schools as well where teachers are not the only source of knowledge but a good internet connection and a computer is required to assess the knowledge. Technology has opened up new avenues in education by breaking the barriers of time where information can be accessed and transferred to anybody, anywhere and by anyone. Access to education has risen all over the world and ICT has become the mandatory part of any kind of education. Technology is very useful in delivering urgent messages as well as making us aware of local, national and international news and updates. This can be used formally and informally to impart knowledge and education. There are number of technology components to build knowledge management systems (Saha B., 2005) <sup>[3]</sup>. Internets are the backbones of the applications built using software and tools allow collaborative intelligent access to knowledge (Wikramanayake G., 2005) <sup>[10]</sup>. Supporting technologies and applications like Relational Data Base Management System (RDBMS), Electronic Document

Management System (EDMS), Graphics, Animation, videos, search engines etc. assist in transformation of information in a very speedy manner. In this way, there is paradigm shift in the arena of education as techniques like e-mail, web notices, discussion forums and video conferencing permit the learners to access information without visiting the place physically but with the usage of internet/ intranets. Virtual access is achieved through Internet / Intranets.

### Flipped Classrooms

Flipped classrooms, an innovative way of imparting knowledge to the students, replacing the formal way of providing education by flexible mode with the help of supporting materials such as screen casts, videos etc. which the learner can access according to his/her comfort, ease and pace. It has shifted the four wall classroom to active hands-on learning. A flipped classroom is an instructional model that makes master learning manageable and sustainable for a large group of students (Bergmann & Sams, 2012) <sup>[1]</sup> causing improvement in predetermined targeted knowledge construction, competence and work skills among students. In terms of the pedagogical adoption of flipped classrooms, relevant studies have showed various applications of the flipping approach (Bull, Ferster, & Kjellstrom, 2012; Herreid & Schiller, 2013; Zhang, Wang, & Zhang, 2012) <sup>[4, 6, 12]</sup>. A simple flip is the most basic level-it is characterized by using online videos, digital textbooks or other forms of media to move lecture materials to a home-based learning environment (Nielsen, 2012) <sup>[7]</sup>.

### Significance of the study

Due to changing scenario in all the fields of life, including the educational era, it is the dire need of the hour to update and replace the conventional and traditional way of teaching and learning. Ozdamli & Asiksoy, (2016) <sup>[8]</sup> concluded that sometimes traditional approaches cannot satisfy teachers and learners needs to accomplish their targets in the modern era of

technology. In Flipped classroom, “students gain first exposure to new material outside of class, usually via reading or lecture videos, and then use class time to do the harder work of assimilating that knowledge, perhaps through problem-solving, discussion, or debates” (Brame, 2013, p. 1). Flipping a classroom accounts for this problem by allowing students to learn new material at their own pace: they can pause the video to take notes and process information; they can rewind and review the video if there is something they do not understand (Educause, 2012; Bergmann & Sams, 2012) [5]. The concept of Flipped classroom learning is spreading widely in the world, but is not well-recognized in our country. This strategy is generally used in Science stream but due to its unique characteristics, now days it is attracting educators and researchers of different streams and disciplines. Flipped classroom strategy has always showed significant results in the field of teaching and learning. Hence the awareness of flipped classroom technique/approach is very much needed for the learners and also for the teachers. There is dearth of studies which try to study the effectiveness of flipped classroom approach among teacher trainees. So, the present investigators visualized a need to study effectiveness of flipped classroom approach among teacher trainees. Intranets are the backbones. They provide transparent speedy transfer of knowledge among people and applications. Internet applications built using software and tools allow collaborative intelligent access to knowledge. Appropriate access and authentication layers ensure the security aspect of such systems. Data and document bases act as the repositories to generate the knowledge. Intranets are the backbones. They provide transparent speedy transfer of knowledge among people and applications. Internet applications built using software and tools allow collaborative intelligent access to knowledge. Appropriate access and authentication layers ensure the security aspect of such systems. Data and document bases act as the repositories to generate the knowledge. Intranets are the backbones. They provide transparent speedy transfer of knowledge among people and applications. Internet Applications built using software and tools allow collaborative intelligent access to knowledge. Appropriate access and authentication layers ensure the security aspect of such systems. Data and document bases act as the repositories to generate the knowledge.

**Objectives**

- To study the appropriate topics from the syllabus of Gender, School and Society of B.Ed II<sup>nd</sup> year course by implementing flipped classroom approach.
- To line up the program using flipped classroom approach for teaching the selected topics of Gender, School and Society of B.Ed II<sup>nd</sup> year course to teacher-trainees.
- To study the effectiveness of using flipped classroom approach for teaching the selected topics of Gender, School and Society of B.Ed II<sup>nd</sup> year course to teacher-trainees.

**Hypothesis**

- There is no significant difference in the mean scores of the post-tests of the experimental group using flipped classroom approach and control group using traditional

approach for teaching Gender, School and Society of B.Ed II<sup>nd</sup> year course.

**Methodology**

The study was taken to ascertain the effectiveness of flipped classroom approach for teaching, Gender, School and Society of B.Ed II<sup>nd</sup> year course to teacher-trainees. Experimental method was adopted for this purpose. Posttest only Experimental Group design was used to collect the data.

**Sample**

Through purposive sampling method, 48 teacher-trainees having Gender, School and Society of B. ED. II<sup>nd</sup> year course, divided in to two groups i.e. 24 in Experimental and 24 in Control Group, were selected.

**Tools:** The data was collected by using Self-Constructed Tool.

**Procedure**

Five topics from the syllabus of Gender, School and Society of B.Ed II<sup>nd</sup> year course were selected i. e. i) Equity and Equality; ii) Teacher as an agent of Change; iii) Family as a social institution; iv) Parenting Styles v) Socialization. Traditional method of teaching was used for control group where as flipped classroom approach was used for Experiment group. What’s app group was formed and email IDs were noted of Experimental group. Videos by using Screencast O’matic, Presentation Tube, You tube and some written material were prepared. Before the real classroom teaching, the prepared videos and text material was delivered to students through email and what’s app group. The students were instructed to watch videos and go through the text material and prepare their notes of the related concept. Next day, in the class room small groups of students were divided and were given group activities. Then students were asked to discuss the problem related to topic and find out the solutions in group, debate and group discussions on different topics. Cooperative learning approach like Think Pair Share, Round Robin etc. were used to complete the tasks. Post test scores of the groups, i. e. Experimental and Control group were analyzed after completion of the program.

**Data Analysis and Interpretation**

The data collected through Self- constructed tool was analysed through inferential statistics.

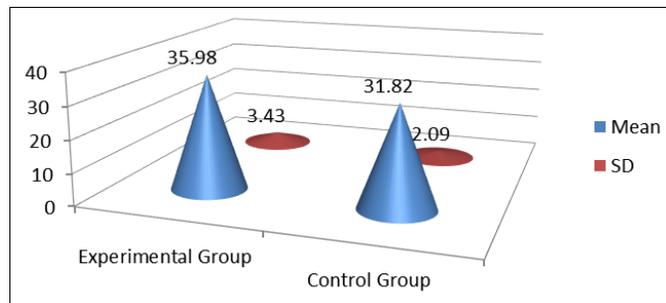
**Table 1:** Mean, S. D. and ‘t’-value of the Difference between Post-test scores of Experimental Group and Control Group

Groups	N	Mean	SD	t-value	Remarks
Experimental Group	24	35.98	3.43	5.07	P<.01
Control Group	24	31.82	2.09		

Table 1 reveals that significant difference existed between Post-test scores of Experimental group taught through flipped classroom strategy and Control group taught through traditional method of teaching. In the context of mean scores, it was found out from the Table -1 that the mean score of control group (31.82) is less than scores of Experimental group (35.98). Result shows that t- value is 5.07 and this value is significant at 0.01 level. Hence, null hypothesis is rejected

and can be reframed as that there exists significant difference in the mean scores of the post-tests of the experimental group using flipped classroom approach and control group using traditional approach for teaching Gender, School and Society of B.Ed II<sup>nd</sup> year course.

The difference between the Means and SD of the two groups is presented graphically in Figure 1.



**Fig 1:** Bar diagram showing the difference between the Means and SDs of two groups

### Findings

- Flipped classroom approach was found to be effective for the teaching the topics of Gender, School and Society of B.Ed II<sup>nd</sup> year course.
- Flipped classroom approach enhanced participation of teacher- trainees in group activities.
- Flipped classroom approach helps teacher-trainees to use technology in innovative manner.
- Flipped classroom approach is helpful by catering the self-learning on the part of the teacher-trainees.
- Flipped classroom approach helps the teacher-trainees to learn beyond the four walls of classroom as due to online availability of material outside the classroom.
- Flipped classroom approach helps in developing the cooperative skills among teacher-trainees as well.

### Recommendations

- Flipped classroom approach should be practiced more from lower to higher level of classes.
- Flipped classroom approach can be used for various subjects Sciences, Environmental Education, Mathematics and languages etc.
- The students should be provided deep knowledge and proper training to use the latest technologies.

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