

EFFECTIVENESS OF FLIPPED CLASSROOM IN LEARNING SOCIAL SCIENCE

Rev. Sr. L. Arul Suganthi Agnes¹

¹*Assistant Professor of Education*

St. Ignatius College of Education, Palayamkottai, Tirunelveli

DOI: <https://doi.org/10.34293/eduspectra.v5is1-may23.002>

Abstract

The purpose of the study was to find out the effectiveness of flipped classroom in learning social science in Higher Secondary Classes. The experimental method of research was employed to find the effectiveness. The design of this Experimental study was Pre-test Post-test equivalent group design. A sample of 60 III group History students was selected. The flipped classroom video lessons were used in the experimental group and the traditional lecture method was used in the control group. An achievement test was conducted to find the effectiveness of the flipped classroom. The findings revealed that learning through flipped classroom was effective in the attainment of objectives such as knowledge, understanding application and skill development when compared to traditional classroom learning through the lecture method.

Introduction

The COVID-19 pandemic impact left none of the fields untouched including education. When the physical meeting of teachers and learners became impossible, the institutions introduced many innovative teaching-learning methods that had been tried and followed. Some of the effective learning processes stuck around when the students returned to the physical classroom. One among them is flipped classroom which enhances students' learning experiences through active learning; peer collaboration and encouraged individualised learning to cater to the need and level of learning perception of the learners. The flipped classroom inverts the traditional classroom where teachers actively teach and learners passively listen. Flipped classrooms are interred lectures are shared for individual reviews as homework and classroom time is meant for class discussion and interaction with teachers and peers which promote active learning. It makes the classroom an active learning centre and enables the learners to learn at their own pace and gives the teacher more time to cater to individual care and attention to the learners. Together a flipped classroom typically involves a blend of online and face-to-face learning.

Background of the Study

In the flipped classroom the students can work out the learning as a workshop and they can test whether they can apply their knowledge through discussion with teachers and peers as opined by Chang and Hwang (2018). In the flipped classroom the teacher's role is changed. He is no more the instructor simply lecturing; he takes multiple roles as a content designer, motivator and facilitator for group discussions and also individual councillor. The majority of the students had a positive attitude towards flipped classroom the observation by Jalal Nouri (2016) since it largely uses multimedia

for the dissemination of content which always appeal to the learning styles of learners. Flipped classroom provides opportunities for the student to learn at their own pace and they enjoy learning through flipped classroom using various medium of instruction over traditional approaches. This fact was supported by many researchers (Butt, 2014; Davies et al., 2013; Larson & Yamamoto, 2013; McLaughlin et al., 2014; Roach, 2014; Gilboy et al., 2015). Love, Hodge, Grandgenett, and Swift (2014) of their observation that the students learning through flipped classrooms did their exams comparatively fairer than the students learning through traditional methods. McLaughlin et al. (2013) and McLaughlin et al. (2014) reported that the pharmacy students learning the contents through flipped classroom felt that they were more engaged and enjoyed their learning than the students learning through traditional mode. Davies, Dean, and Ball (2013) research was brought to the limelight right after comparing three different instructional strategies and found that students attending the flipped classroom expressed their satisfaction.

Significance of Study

In the traditional classroom, the gifted feel bored and the below-average students get nothing since the teacher teaches only to the average. Students listen and take notes, passively receiving the lecture information (www.studocu.com/). Learners learning through flipped mode can review the material given to them at any time and learning can take place part by part at their convenience. In flipped classrooms, the special needs of children with different learning styles are well taken care of in the self-pacing mode of learning. Learning at their convenience reduces anxiety in learning. In flipped learning the basic information is learnt by the learners at home and they come to the class for varied experiences related to the content they learnt at home. The teachers lead the students in their presentations and group discussions. Here in these active learning students apply their knowledge to attain higher cognitive abilities. When study materials are made available, students face the examination with confidence (Michelle Kaye, 2021). With more opportunities for interaction with the teacher, collaboration with other students, problem-solving practice, and self-paced learning, research shows students in flipped classrooms may have better outcomes. The results of the previous research showed that flipped learning, in comparison with traditional teaching, enhanced students' learning interests and motivation as well as promoted students' learning effectiveness; meanwhile, teachers and students presented a positive evaluation concerning the advantages of flipped learning (Chi-Pu Chou (2021). The results of the present study will conform to and support the previous studies in formulating theories related to the flipped classroom.

Statement of Problem

The investigator intended to find the effectiveness of flipped classroom in learning social sciences at higher secondary classes.

Objectives of the Study

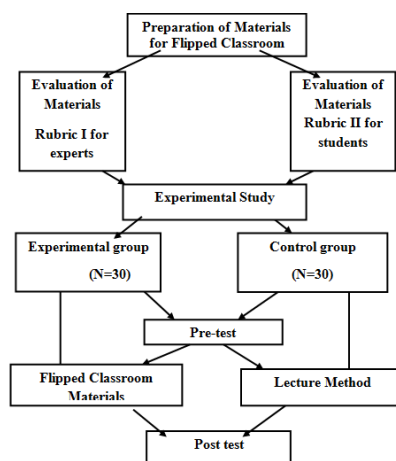
- To find out the significant difference between mean scores of the pre-test of control and experimental groups in their attainment of objectives such as knowledge, understanding, application and skill.
- To find out the significant difference between mean scores of post-test of control and experimental groups in their attainment of objectives such as knowledge, understanding, application and skill.
- To find out the significant difference between the mean scores of control and experimental groups in their gain scores.
- To find out the significant difference between the mean scores of control and experimental groups in their gain scores for the attainment of objectives such as knowledge, understanding, application and skill.

Methodology

The experimental method was mainly used for the study, for testing the effectiveness of flipped classroom in learning social science at the higher secondary level. The effectiveness of learning through flipped classroom was tested by comparing the achievement scores (Pre-test and post-test) of the experimental group (Students wholearnt through flipped classroom) and the control group (traditional lecture method). The two independent variables of the study were (i) Learning through flipped classroom and (ii) the Lecture Method of teaching social science. The Dependent Variable was the achievement in social science.

The Experimental study was conducted on a sample of 60 students from standard XI studying in the Government Higher secondary school, Reddiarpatti, Tirunelveli. (Experimental group-30; Control group-30) The following tools were used for the study. Video lessons (based on a lesson from class XI History Text Book), Video Lessons Evaluation Rubric I (for experts), Video Lessons Evaluation Rubric II (for students), Lesson Transcripts based on Lecture (for the same lesson from class XI History book) and Achievement test in Social Science were used.

Research Design



Experimental Design

The design of this Experimental study was as under: Pre-test Post-test equivalent group design.

$$\begin{array}{c} CO_1 X_1 CO_2 \\ \text{-----} \\ EO_1 X_2 E O_2 \end{array}$$

Where,

CO_1 and EO_1 are the pre-tests of the control and experimental group respectively.

X_1 and X_2 are the levels of the independent variables and

CO_2 and EO_2 are the post-tests of the control and experimental group respectively.

Controlling Variance

The main purpose of matching is to reduce the initial differences between the Experimental and Control group on the dependent variable. The extraneous variable like age was controlled by selecting the students from the same standard (plus one class) between the age groups of 16-17 years for both the experimental and control group respectively. The IQ level of the students had been set constant between 90-100 by scores of the Test of Intelligence, developed and validated by V.M. Kavitha and S. Francisca (2013). Based on the performance of the social science test students were divided into three groups such as low, average and high scorers. An equal number of students from each group has been placed both in the experimental and control groups respectively. To minimize the gender-based differences, the groups had been equalized with 15 boys and 15 girls in both experimental and control groups respectively. Thus variances were controlled.

Analysis of Data

Hypothesis 1

There was no significant difference between mean scores of the pre-test of control and experimental groups in their attainment of objectives such as knowledge, understanding, application and skill.

Table 1 Difference between Mean Scores of Pre-Test of Control and Experimental Groups in their Attainment of Objectives such as Knowledge, Understanding, Application and Skill

Objectives	Control		Experimental		't' value	Remarks
	Pre-test		Pre-test			
	Mean	S.D	Mean	S.D		
Knowledge	5.03	2.484	6.00	2.704	1.317	NS
Understanding	8.30	2.667	7.97	2.297	0.439	NS
Application	4.67	1.918	4.07	1.818	1.403	NS
Skill	1.97	0.890	1.53	0.860	1.987	NS

*Level of significance at 0.05, table value 2.042

**Level of significance at 0.01, table value 2.750

From the above table, it is inferred that there is no significant difference between mean scores of the pre-test of control and experimental groups in their attainment of objectives such as knowledge, understanding, application and skill. It is evident that both the experimental group and control group had achieved approximately equal scores in the pre-tests in the attainment of all the objectives.

Hypothesis 2

There is no significant difference between the mean scores of the post-test of control and experimental groups in their attainment of objectives such as knowledge, understanding, application and skill. Therefore the null hypothesis is accepted.

Table 2 Difference between Mean Scores of Post-Test of Control and Experimental Groups in their Attainment of Objectives Such as Knowledge, Understanding, Application and Skill

Objectives	Control		Experimental		't' value	Remarks
	Post-test		Post-test			
	Mean	S.D	Mean	S.D		
Knowledge	5.90	2.203	7.90	1.954	3.525**	S
Understanding	8.83	2.574	10.33	2.354	2.314*	S
Application	5.67	2.023	7.47	2.968	2.787**	S
Skill	2.23	0.728	4.57	0.898	10.536**	S

*Level of significance at 0.05, table value 2.042

**Level of significance at 0.01, table value 2.750

There is a significant difference between the mean scores of the post-test of control and experimental groups in their attainment of objectives such as knowledge, understanding, application and skill. Since the calculated 't' value is greater than the table value, the formulated null hypothesis was not accepted. Comparing the mean scores the post-test performance of the experimental groups was better than the post-test performance of the control group in the attainment of all the objectives

Hypothesis 3

There is no significant difference between the mean scores of the control and experimental group in their gain scores.

Table 3 Difference between the Mean Scores of the Control and Experimental Group in their Gain Scores

Group	Mean	S.D	't' Value	Remarks
Control	2.67	1.918	8.300**	S
Experimental	10.70	5.338		

*Level of significance at 0.05, table value 2.042

**Level of significance at 0.01, table value 2.750

From the above table, it is inferred that there is a significant difference between the control and experimental group in their gain scores. Since the calculated 't' value is greater than the table value, the formulated null hypothesis was not accepted. The experimental group's gain scores were better than the gain scores of the control group.

Hypothesis 4

There is no significant difference between the mean scores of the control and experimental groups in their gain scores for the attainment of objectives such as knowledge, understanding, application and skill.

Table 4 Difference between the Mean Scores of Control and Experimental Groups in their Gain Scores for the Attainment of Objectives Such as Knowledge, Understanding, Application and Skill

Objectives	Pre-test		Post-test		't' value	Remarks
	Mean	S.D	Mean	S.D		
Knowledge	0.87	1.074	1.90	2.123	2.531*	S
Understanding	0.53	0.860	2.37	1.956	4.704**	S
Application	1.00	1.597	3.40	3.276	3.616**	S
Skill	0.27	0.640	3.03	0.999	13.006**	S

*Level of significance at 0.05, table value 2.042

**Level of significance at 0.01, table value 2.750

From the above table, it is inferred that there is a significant difference between the control and experimental groups in their gain scores for the attainment of objectives such as knowledge, understanding, application and skill. Since the calculated 't' value is greater than the table value, the formulated null hypothesis was not accepted. The gain scores of the experimental group were better than the gain scores of the control group in their attainment of all the objectives.

Conclusion

The results of the study revealed that the flipped classroom learning of social science is a better way of learning than teaching the lesson through the lecture method by a teacher. The result of the study draws the support of Chi-Pu Chou (2021) found flipped classroom model seems to offer promising ways to engage students in more effective, supportive, motivating and active learning, especially for low achievers and students that may struggle with traditional lectures Jalal Nouri (2016) Campillo-Ferrer et.al (2021) concluded that students had a positive perception about the flipped classroom. Flipped learning, compared to traditional teaching, could enhance students' learning motivation and learning attitude and because of these reasons flipped learning is certainly worth attempting (Chi-Pu Chou,2021). Further Chi-Pu Chou (2021) is of the opinion that traditional learning also has some good features within it and the

institutions can blend along with flipped learning. Students feel that learning content is easier with flipped learning compared to traditional mode.

References

1. Butt, A. (2014). Student views on the use of a flipped classroom approach: evidence from Australia. *Business Education & Accreditation*, 6(1), 33–43.
2. Campillo-Ferrer, J.M., Miralles-Martínez, P.(2021). Effectiveness of the flipped classroom model on students' self-reported motivation and learning during the COVID-19 pandemic. *Humanit Soc Sci Commun* 8, 176 (2021). <https://doi.org/10.1057/s41599-021-00860-4>
3. Chi-Pu Chou, Kuo-Wei Chen, Chia-Jen Hung (2021). A Study on Flipped Learning Concerning Learning Motivation and Learning Attitude in Language Learning, *Frontiers in Psychology*, Vol. 12
4. Chang, S. C., Hwang, G. J. (2018). Impact of an augmented reality-based flipped learning guiding approach on students' scientific project performance and perceptions.. 125, 226–239. doi: 10.1016/j.compedu.2018.06.007
5. Davies, R. S., Dean, D. L., & Ball, N. (2013). Flipping the classroom and instructional technology integration in a college-level information systems spreadsheet course. *Educational Technology Research and Development*, 61(4), 563–580.
6. Gilboy, M. B., Heinerichs, S., &Pazzaglia, G. (2015). Enhancing student engagement using the flipped classroom. *Journal of nutrition education and behaviour*, 47(1), 109–114.
7. Jalal Nouri (2016) The flipped classroom: for active, effective and increased learning – especially for low achievers, *International Journal of Educational Technology in Higher Education*, volume 13, Article number: 33 (2016)
8. Larson, S., & Yamamoto, J. (2013). Flipping the college spreadsheet skills classroom: initial empirical results. *Journal of Emerging Trends in Computing and Information Sciences*, 4(10), 751–758.
9. McLaughlin, J. E., Griffin, L. M., Esserman, D. A., Davidson, C. A., Glatt, D. M., Roth, M. T., ...Mumper, R. J. (2013). Pharmacy student engagement, performance, and perception in a flipped satellite classroom, *American Journal of Pharmaceutical Education*, 77(9), 196.
10. Michelle Kaye (2021). The Good and Bad of Flipped Classroom Approach, https://uk.linkedin.com/in/michellekaye?trk=article-ssr-frontend-pulse_publisher-author-card
11. Roach, T. (2014). Student perceptions toward flipped learning: new methods to increase interaction and active learning in economics, *International Review of Economics Education*, 17, 74–84.