



Effect of multimedia on achievement in social sciences in relation to gender at secondary school level

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ABSTRACT

The present study was conducted to explore the effect of multimedia on achievement in social sciences in reference to gender at secondary school level. The procedure was executed by employing pre-test and post-test with reference to group i.e. control group and experimental group. A sample of 100 students of IX class was taken from IX class social science students affiliated to C.B.S.E. To measure the achievement, an achievement test in science was used as research tool. The study was delimited to IX class secondary school students affiliated to C.B.S.E only. Experimental group was taught science with multimedia, the control group was taught science through conventional method. The data was analyzed with the assistance of statistics namely descriptive statistics, inferential statistics and graphical representation. The results of the data revealed that there is a significant effect of interaction between multimedia and gender on achievement in science of secondary school students.

Short Communication

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INTRODUCTION

Nowadays, the stereotyped traditional teaching methods and environment are unpopular while multimedia technology featuring audio, visual animation effects naturally and humanely makes us more access to information besides, with such characteristics as abundant – information and crossing time and space, multimedia technology offers a way of reality and functions alright, which greatly cultivates students' interest and motivation in study and their involvement in school activities. Multimedia promotes students communication capacity, improve teaching effect. It also widen students' knowledge to realize an insightful understanding to Western culture, provide flexibility to course content & improve the interaction between teacher and student (Patel, 2013; Sarowardy and Halder, 2019). Multimedia classroom provide the scholars chances for interacting with diverse texts

that give them a solid background within the tasks and content of mainstream courses. The involvement of technology within the classroom can't be denied giving positive point to improving the standard of teaching and giving more various techniques in teaching. Though the media the teacher could give more opportunity to students to precise their opinions and luxuriate in during the course (Joshi, 2012).

There are many advantages in applying multimedia in education. One among it's that multimedia enable students to represents information using several different media. This proves to be helpful when students got to do their project. By using multimedia, students can represent their project in much creative ways. Moreover, multimedia approach also provides flexibility of where and once they can learn. This is often because by using multimedia approach like audio and video, student can record or make reference to each other for

discussion or taking note of previous topic that they will record. Multimedia approach also helps the scholars to develop a better order thinking skills. By using the multimedia, students use their own idea and creativity to mix the weather of multimedia to supply something fresh and new. Furthermore, multimedia approach also is far more engaging compare to the normal one. With multimedia, interactive learning are often through with live-action video, feedback, questions and answers to stay the scholars interested and help enhancing their skills. Next, with multimedia simulation technique are often effectively applied. By using simulation, student can grasp a far better understanding about the step and producer to form or do a particular project. This will improve their understanding and also help improving their skills (Linda, 2018).

Students' progress need to be achievement with the new advancement within the field of education like internet technology. Within the age of technology, education requires variety, novelty, harmony, interesting and wonderful strategies within the teaching-learning process. According to Akinoso (2018), multimedia positively influenced the tutorial performance of scholars. The results of the study, it had been established that the utilization of multimedia can improve the training of scholars to a particular level. The school rooms have diverse learner's setting so teachers need to face some problem of teaching through traditional method. There should be change and present the knowledge to other ways to teaching. The classrooms have individual differences among the scholars using same method isn't impactful for learning. Therefore the teachers need to adapt the new strategies and new techniques in classroom teaching. Consider the multimedia approach within the classroom for teaching and learning process to urge better learning outcome for college students. Multimedia will provide multi-sensory experience and attain mastery over the pc science content and subject. Multimedia generate tons of pleasure as learning it crosses traditional boundaries of faculty , work place and enabling students choose their learning materials in their own time and at their own pace (Indira and Dhanalakshmi, 2018). Akinbadewa and Sofowora (2020) supported that multimedia enhanced the attitude of students. It

had been concluded that students developed positive attitudes toward learning after using the multimedia packages which multimedia instructional packages are a stimulating and artistic method of teaching, learning and enhancing positive attitudes towards learning among lyceum students.

In this era of technology, it's becoming an important to our lifestyle. Even kids lately as young as three to four years old have skills to use an iPad or mobile or laptop. Society has made use of technology we've today for learning. In December 2019, the coronavirus disease 2019 (COVID-19) was emerged, spread worldwide within a couple of months and declared an epidemic by the planet Health Organization on March 11th 2020. Universities across the world were closed immediately. In 2020, the campuses got down and altered all the tutorial programmes online. All institutions need to prepare themselves for this type of move from conventional teaching approach to completely multimedia teaching approach.

Objective of the study

To study the interaction between multimedia and gender on achievement in social science of IX class secondary school students

Hypothesis

There is no significant effect of interaction between multimedia and gender on achievement in social science of IX class secondary school students.

Delimitation

The present study was delimited to IX class secondary school students affiliated to C.S.E.B. in the subject of social science only.

■ METHODOLOGY

The experiment procedure was executed. One experimental group and one control group was formed. The multimedia group as experimental group was taught social science with the supplement of video technology, the control group was taught social science through conventional method.

Design

The design was applied by dividing three stages of testing. The first stage was involved pre-testing of all the students into two groups on achievement in social science. The second stage was involved treatment of 60 working days. The treatment was coined of teaching social science to IX class secondary school students with multimedia to experimental group and through conventional method to control group. During the third stage, the students were post-tested on achievement in social science just after the treatment so as to determine the effect of treatment. The content was taught to both groups.

Sample

The present study was conducted on the IX class Secondary School Students affiliated to C.B.S.E. One private school was selected for sample. The investigator put 50 students in the experimental group and 50 students in the control group. The total sample of 100 students was selected from IX class secondary schools. This selection process fell in the category of randomized sampling. The sample on the basis of gender is described in Table 1.

Table 1. Sample description for experimental study

Group Gender	Experimental Group	Control Group	Total
Boys	27	21	48
Girls	23	29	52
Total	50	50	100

Research tool used

In this study the investigator used Achievement test in Social Science developed by [Singh and Kaur \(2017\)](#) and [Gandhi \(2017\)](#).

RESULTS AND DISCUSSION

Analysis and interpretation of the data was calculated with the help of descriptive statistics namely mean, standard deviation and inferential statistics namely t-test and analysis of variance (one-way and two-way) and graphical representation was used to study the effect of multimedia on achievement in social sciences in relation to gender at secondary school level.

Analysis of Interaction between treatment and gender on achievement in social science of IX class students

The second objective was to study the interaction of treatment and gender on achievement in social science of IX class students. There were two levels of treatment i.e. multimedia and conventional method. There were two categories of gender namely male and female. The data were analyzed with the help of 2×2 factorial design of analysis of variance. The results are given in Table 2.

Table 2. Summary of analysis of variance for the interaction between multimedia and gender on achievement in social science of IX class students

Source	Sum of Squares	Df	Mean Square	F-value
Treatment	2980.10	1	2980.10	57.80**
Gender	186.40	1	186.40	3.61
Treatment Gender	287.08	1	287.08	5.56*
Error	4949.48	96	51.55	
Total	157269.00	100		

* $p < 0.05$, ** $p < 0.01$.

Effect of treatment on achievement in social science

The table 2 shows that F value for significance for the main effect of treatment on achievement in social science of IX class students came out to be 57.80 which is significant at 0.01 level. It means that the mean score of achievement in social science of students taught social science through multimedia and those taught the same topics through conventional method differ significantly. In the light of this, the hypothesis that there is a significant effect of treatment on achievement is accepted. It can be concluded that the multimedia was found to improve achievement in social science significantly higher in comparison to conventional method.

Effect of gender on achievement in social science

From table 2, it is evident that the F-value for the main effect of gender on achievement in social science of IX class students turned out be 3.61, which is not significant even at 0.05 level. It means that the mean score of achievement in social science of males and females did not differ significantly. The mean score of

male is 44.19 and the mean score of female is 43.52 In the light of this, there is no significant difference on gender in achievement in social science of IX class students in social science is accepted. It can be concluded that both male and female students do not differ significantly on achievement in social science of IX class students.

Effect of interaction between treatment and gender on achievement in social science

It has been revealed that table 2, F-value for interaction between treatment and gender on achievement in social science is 5.56, which is

significant at 0.05 level. It indicates that there was a significant interaction between treatment and gender on achievement in social science of IX class students. It means that there is a significant difference in achievement in social science of experimental and control group of IX class students across the male and female. In the light of this, the null hypothesis that there is no significant interaction between multimedia and gender on achievement in social science of IX class students is rejected. It can be concluded that gender may be kept in mind while selecting the strategy of teaching social science.

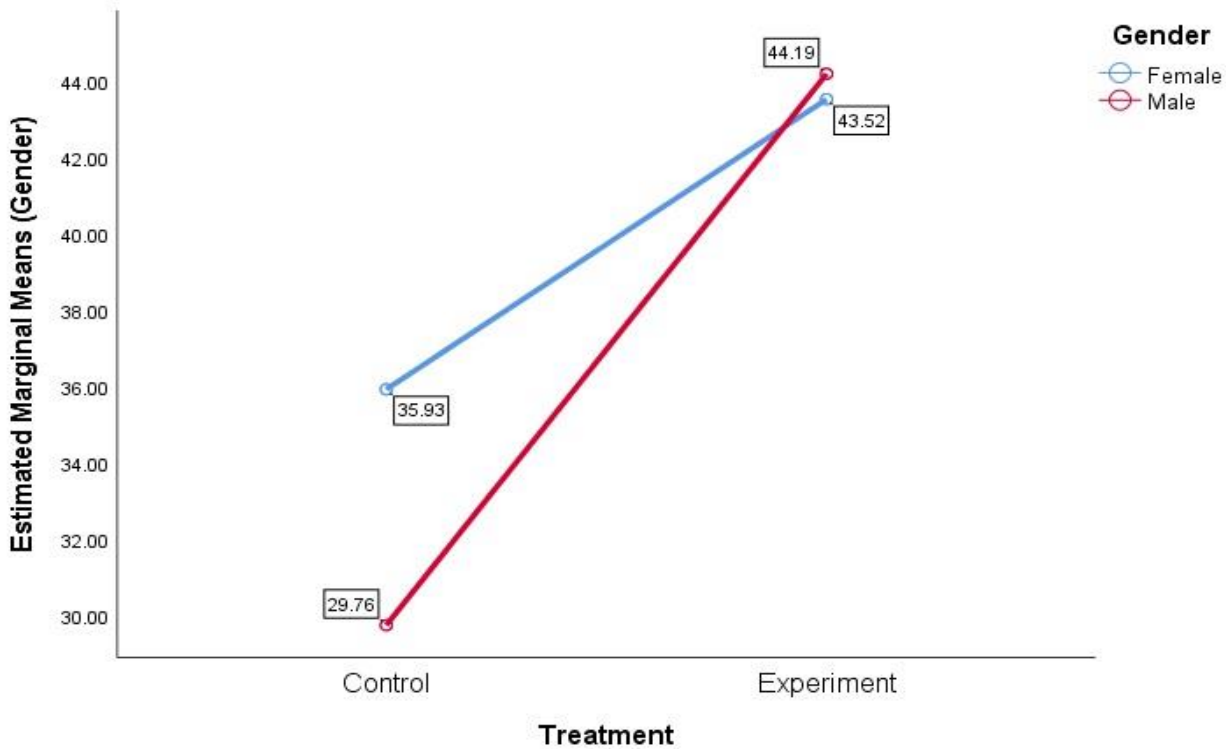


Figure 1. Graphical representation of estimated marginal means of gender with respect to treatment

CONCLUSION

The results of present study discussed about the effect of multimedia on achievement in social sciences in relation to gender at secondary school level. The findings of the study revealed that multimedia approach improve the achievement in social science higher in comparison to conventional approach. There is a significant effect of interaction between

multimedia and gender on achievement in social science of secondary school students. The results of the study revealed that multimedia significantly enhance social science achievement of students, so it suggested that with the implementation of multimedia in classroom, the students will develop keen interest in their course of study and will be able to explore their abilities. The multimedia makes teaching-learning process interesting and enjoyable.

❏ DECLARATION

Competing interests

The authors declare that they have no competing interests.

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