Are MOOCs More Effective than Conventional Classrooms for B.Ed. Pupil Teacher's?

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ABSTRACT

Massive open online courses, or MOOCs, have emerged as one of the most notable innovations in higher education. Unlike a conventional classroom, MOOCs provide open access to everyone, video-based instructional content and forums are made available to an infinite number of learners via an online platform, and knowledge is imparted with asynchronous mode. This study compares conventional and MOOC approaches to academic achievement and retention among B.Ed. pupil teachers in Delhi at Kamal Institute of Higher Education and Advanced Technology affiliated to GGSIPU. This research is performed on 60 B.Ed. pupil teachers an experimental research design was adopted by the researcher. Two groups were formed experimental named as Group A and control named as Group B. The experimental group gets instruction via MOOC while the control group through regular classroom settings. The experimental and control groups' pre-test and post-test academic performance differed significantly, according to the findings of the paper. The findings of this paper suggested that there is the significant difference in the academic performance of both the groups. Experimental group has more significant difference in their academic achievents and retention than the conventional group. MOOCs are expected to be more successful than traditional classrooms in terms of teaching and learning. The findings give educational communities important information on pedagogical and technological elements of how to effectively offer instruction for fruitful learning.

Keywords: Academic Achievement, Conventional Classrooms, Experimental Research, MOOCs, Retention.

INTRODUCTION

The field of higher education has seen significant change due to the rapid advancement of information, communication, and technology (ICT). The many features of online delivery that may be used to make lessons more engaging for students have piqued the curiosity of several academics and educators. The public and academic communities have taken a keen interest in massively open online courses (MOOCs), a relatively new online distribution or instructional tool. In the beginning, MOOCs were free to use for everyone with an internet connection. However, at the beginning of 2019, small fees were levied to pay for the expense of upkeep. Teachers are encouraged to create

and submit their lesson plans through MOOCs, which are independent online platforms that are put up by third parties. The classes

can accommodate a large number of students and encourage lifelong learning. Creating an engaging learning environment provides an unmatched classroom experience (Baturay 2014). This is accomplished using interactive mode to instruct while showcasing the multimedia content on an interface screen. Higher education is seeing an increase in the number of these online courses as many students are keen to understand the technology. Millions of students worldwide have enrolled in thousands of courses created through MOOCs to date. Since their creation in 2008, MOOCs have frequently emerged as one of the most notable developments in higher education, claim Olazabal Aga et al. (2016). MOOCs are one of the most well-liked, cutting-edge, and practical pedagogical tool applications available online thanks to the need for online learning platforms and the pervasiveness of information distribution methods. Even though MOOCs are favoured and supported by all facets of society, including in Malaysia, many people continue to doubt their ability to effectively deliver educational content because, in practice, many obstacles and dangers could prevent them from succeeding (Zheng & Yang, 2017).

The impact of online learning vs traditional classroom instruction on students' learning outcomes has been the subject of a large body of study to date. Many studies reported no significant effects (McCutheon et al., 2015; Means et al., 2010), mixed or negative effects (Figlio et al., 2010; Xu & Jaggers, 2013), and significant positive effects (Bralic & Dvjak, 2018; Bowen & Ithaka, 2012; Deterding et al., 2011; Lack 2013; Kapp, 2012; Israel, 2015). It should be highlighted, nonetheless, that the majority of the aforementioned research has examined how well MOOCs perform in terms of learning outcomes when used as one of the online pedagogical and technological tools in place of traditional classroom instruction. There isn't much research looking at MOOCs concerning academic success. Learning outcomes are the knowledge and skills that students gain, whereas academic achievements show how well students perform in a course or program. following the conclusion of the program or course. Learning outcomes and academic performance are equally significant instructional instruments for evaluating how well students are learning. Since learning outcomes have been the subject of a large number of research, this one aim to close the gap by comparing the academic performance of two learning modalities: MOOCs and regular classrooms.

TRADITIONAL CLASSROOM

In traditional classrooms, knowledge is imparted through in-person interactions between an instructor and students in real "brick and mortar" settings (*Elisabeth A. Counselman Carpenter et al 2019*) Students, whiteboards, overhead projectors, and marker pens are crucial teaching aids used to transmit knowledge in conventional classrooms. However, the conventional classroom has begun to lose its monopoly as a site of learning as a result of the emergence of the information economy. Almost every aspect of teaching and learning has changed significantly as a result of the Internet to date (Nguyen, 2015). To date, many studies have examined the effects of online learning over traditional classrooms concerning learning outcomes. The results were found inconclusive due to their mixed findings (Bowen & Ithaka 2012; Deterding et al., 2011; Feeley & Parris 2012; Figlio et al., 2010; Kapp, 2012; Lack, 2013; McCutheon et al., 2015; Means et al. 2010; Nguyen, 2015; Xu & Jaggers, 2013) in an experimental study, Bowen and Ithaka (2012) split the students into two groups. The first group,

known as the experimental group, received instruction online, the majority of the work in this group was completed online second group through classroom instruction using traditional classroom settings. The second group was designated as the control group and placed in a conventional classroom. Feeley (2012) investigated how learning outcomes were. The study was carried out with the pedagogical course content. The course was attended by B.Ed. pupil teacher of KIHIET affiliated to GGSIPU. It was found that those who used MOOC platform have improved learning outcomes. The findings of the study, students who participated in MOOCs had a higher chance of achieving superior learning outcomes than those who attended regular classrooms. Figlio et al. (2010) used an experimental study to examine how learning outcomes were affected by online learning as opposed to typical classroom settings.
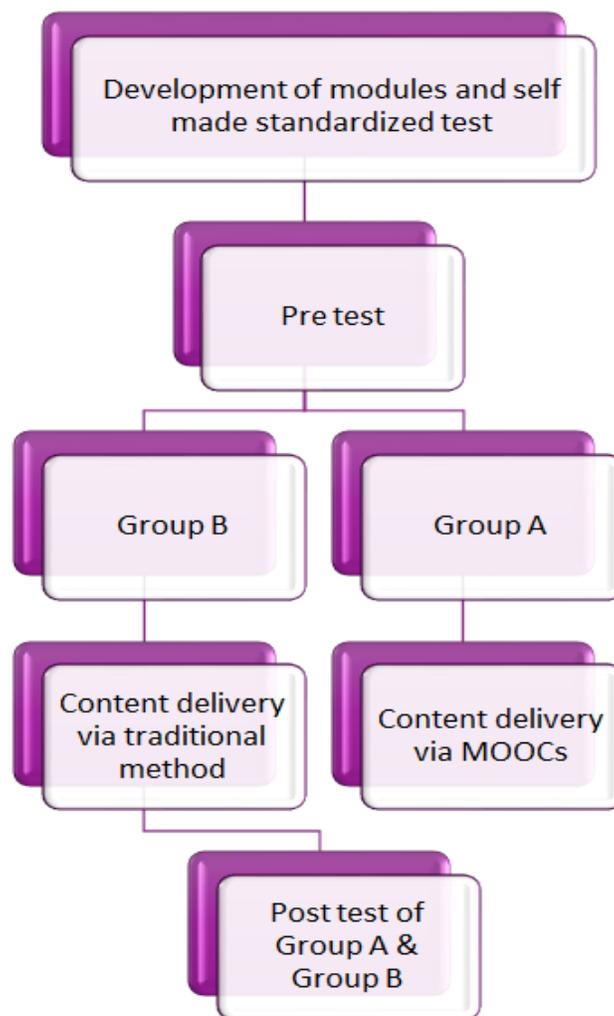
RESEARCH DESIGN OF THE STUDY

Figure 1: Design of the Study

For the study experimental research was used and dividing the class into two groups: the experimental group and the control group. While the second group received instruction in a conventional classroom, the experimental group's students received instruction online. Both groups' students received the same guidance. Even though numerous studies have demonstrated that online learning improves learning outcomes more than traditional classroom settings. (Bowen & Ithaka, 2012.et al) After reviewing the aforementioned literature, the following null hypotheses are formulated.

H01: There is no significant difference between pre-test and post-test scores of academic achievements in terms of MOOC approach among B.Ed. pupil teachers.

H02: There is no significant difference between pre-test and post-test scores of academic achievements in terms of conventional approach among B.Ed. pupil teachers.

METHODOLOGY

The study proposed an experimental method with two equal groups. The formation of two equal groups was done by considering the score of pilot testing of the test. Based on the score of pilot testing two groups were formed. One group was named as the experimental group (Group A) and the other group was named as the control group (Group B). Pre-test and post-test were the two instruments employed in this investigation. Before beginning treatment, both student groups had to take a pre-test (O). A four-page self-made standardized test with forty-six MCQ along with demographical questions was used which was based on the pedagogy of social science. Pupil-teacher of both groups is given a self-made standardized test before delivering any content to know the previous knowledge of the candidate which is known as a Pre-test. Marks would be provided based on the respondents' proper responses, with a maximum score of 46 and a minimum score of 0. The test contains basic demographic data and they were assured their data would be not disclosed to anyone. The data and personal details are fed into the Excel sheet. After the pretest group A was the treatment group which was given the content on Google Classroom by creating a link to the video, text, assessment, and discussion forum. Another group received the content by separating the selected candidates in a room. Overhead projector and classroom equipment and same module content which was developed by the researcher had used to teach the pupil teachers. The investigator had tried to follow the same teaching style, and examples to reduce the bias from the result. Content delivery took completely 28 days to deliver through both methods. After completion of content again the same test was given to both the groups named as Post-test to check the academic achievement of the B.Ed. pupil teacher. Before the teaching delivery began, the researcher gave the respondents an explanation of what MOOC meant and traditional classroom formats, methodologies, scopes, schedules, and session durations. It was assured that every respondent was fit to reply and in good health during the test periods. They were set up in a peaceful, comfortable environment free from disturbances.

The research design is displayed in Table 1.

RESEARCH STUDY DESIGN

	Pre-test	Treatment	Post-test
Experimental Group	O	X1	O1
Control Group	O	X2	O1

Table. 1

O = Pre-test of experimental and control group X1= content delivered through MOOC

X2= Content delivered in a traditional environment. O1=Post test of experimental and control group

T-test was used to analyze the pre-test and post-test scores to determine whether there were any notable differences between the experimental and control groups' scores, the t-test was employed.

HYPOTHESIS TESTING

According to the first hypothesis, there is a substantial correlation between the academic performance of the experimental group (EG), which was taught via MOOCs. The experimental group's pre-test and post-test mean scores were 16.36 and 21.83, respectively, and their corresponding standard deviations were 4.55 and 3.51. The paired samples' T-test results validated hypothesis 1, which showed that the EG's academic success scores were significantly impacted by the pre-test and post-test differences ($t = 5.23$, $p < 0.05$).

Test	N	Means	SD	t value	P value
Pre-test	30	16.36	4.55	5.23	0.000001
Post-test	30	21.83	3.51		Significant

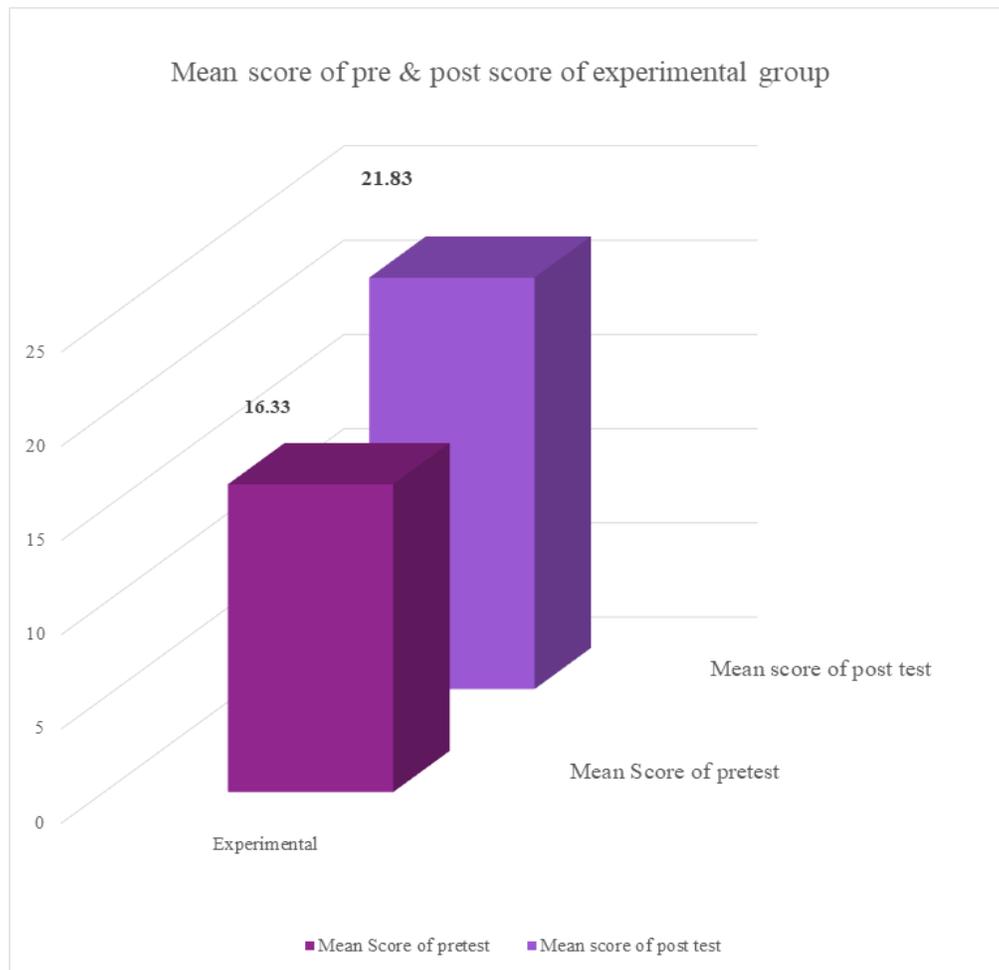Table 2: Scores of pre- & post-test scores of the experimental group

Figure 2: Mean score of pre & post score of experimental group

Hypothesis 2 According to the second hypothesis, the academic performance of the control group (those who received their education in a typical classroom). According to the results, the pre-test and post-test academic accomplishment mean scores were 16.36 and 20.56, respectively, and the corresponding standard deviations were 4.55 and 13.49 The findings of the T-test validated the hypothesis and showed that the mean score of control group success scores before and after the test differed significantly (t= 3.84, p < 0.05). The paired samples T-test for the control group, which received instruction in a conventional classroom, is shown in Table 3.

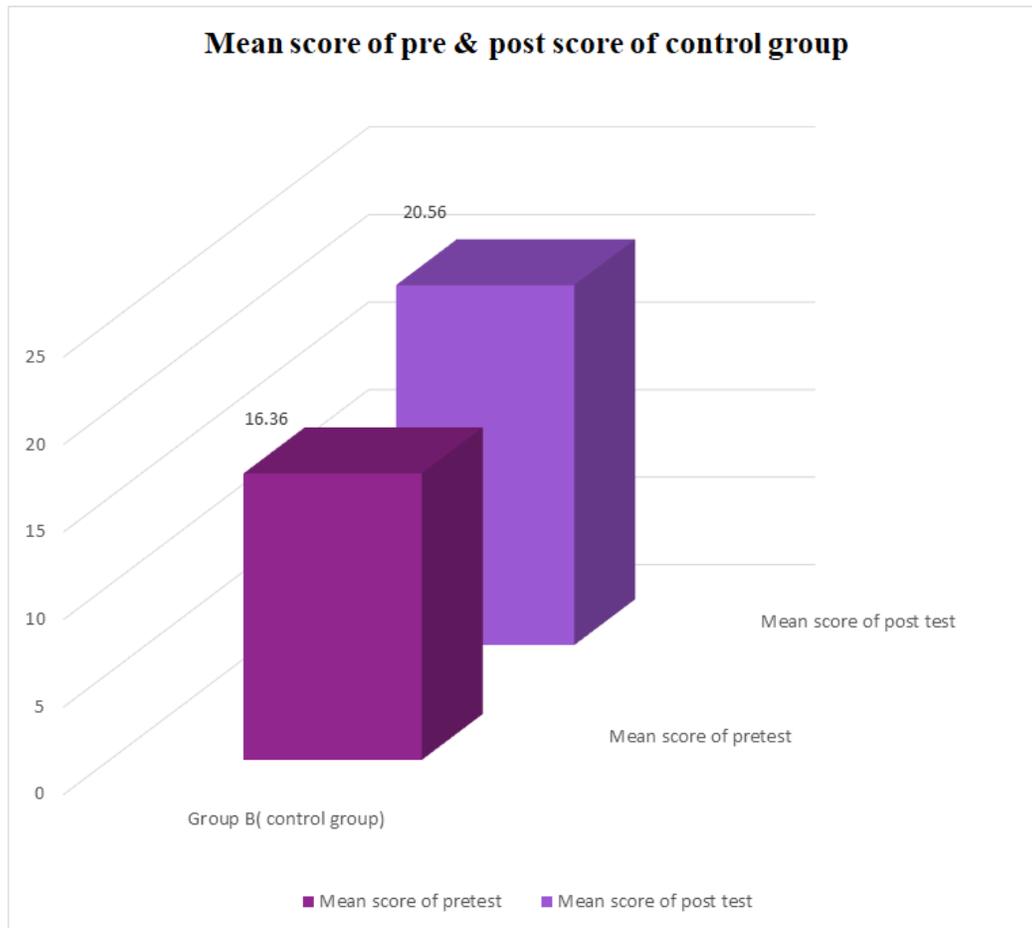| Test	N	Means	SD	t value	P value
Pre	30	16.36	4.55	3.84	0.0005
Post	30	20.56	13.49		Significant

Table 3

Figure 3: Mean score of pre & post score of control group

CONCLUSION

According to the study, studying through MOOCs as well as traditional classroom settings both improved students' academic performance. But the MOOCs impacts more significant than the conventional classroom. MOOCs are pedagogical innovations that will transform the concept of traditional learning and offer a fresh approach to information acquisition to satisfy the competency requirements of a knowledge-driven and digital society. Online learning reduces social contact between people, even if it is quite popular among tech-savvy individuals, and gives students the chance to learn in a virtual setting. The best of these two pedagogical approaches—which stimulate learners' interests in learning, boost motivation and self-esteem, expedite knowledge, and connect individuals both locally and globally—would be obtained by combining MOOCs in comparison with traditional classroom courses. Therefore, it is envisaged that MOOC learning would help students become ready for the future by making them more adaptable to deal with the problems posed by the rapid advancement of technology and enabling them to attain the greatest academic success.

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