



Effectiveness of Online and Offline Teaching on Academic Achievement among Learners

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ABSTRACT

This study explored the impacts both online and offline teaching had on the academic performance of learners. This study, conducted in the Darbhanga District of Bihar, aims to understand the effect differing teaching styles, online and offline, has on the academic performance of students. The study used a quantitative research method and a comparative descriptive research design. The study's population were the secondary level learners of government and private schools within the Darbhanga District. A purposive sample of 120 was selected: 60 students who had received online teaching and 60 students who had received offline teaching. The researcher developed an Academic Achievement Record Sheet, and the analysis was done using students' examination scores. The data were analysed by using mean, standard deviation and t-test. The t-value (4.34) and p-value (0.00003) indicated that the two groups were significantly different on the academic achievement scores, and hence the null hypothesis was rejected. The study results prove that offline teaching is more effective compared to online teaching regarding academic achievement of learners. The study results also indicate that traditional classroom teaching and in-person, face-to-face methods are very important, while at the same time emphasizing the continued use of technology in teaching.

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Introduction

Education is essential for individual and societal growth in all aspects of life. The success of the academic system depends on how efficient the teaching-learning process is. Teaching has always happened through in-person interactions within a designated teaching-learning space. The rapid growth of communication technologies has changed the methods of teaching and brought about the first alternative, the online teaching system (Anderson, 2008). Online teaching is the use of communication technologies to send teaching and learning materials and enable the teacher and learners to communicate from different places. The developments in the Internet, the various learning management systems, and the numerous online teaching learning resources have brought more opportunities for online teaching and learning systems (Moore & Kearsley, 2012). Offline teaching, also referred to as the traditional teaching and learning process, incorporates face-to-face interaction, immediate feedback, and collaborative participation and engagement within a learning space. The different systems of teaching and learning have distinct uses and disadvantages that may affect the learning experience and academic performance of learners. After COVID the majority of the world to adopt online teaching and learning systems, forcing institutions to abandon in-person, traditional teaching and learning systems. The sudden shift to online systems to continue teaching and learning has shown the advantages and disadvantages of technological teaching and learning systems (Dhawan, 2020). After this, there has been a drastic increase in research interested in the different systems of teaching and learning to determine their contributions and advantages for learners.

Studies across various countries yield contradictory results regarding the impact and effectiveness of online versus offline teaching. There are studies that state the positive impact of online learning on the flexibility of students, the pace of learning, and the availability of learning resources. Positive academic results are derived from these (Means et al., 2013). Other studies highlight offline teaching and its impact on the engagement and motivation of the students, social learning, and the instant clarification of doubts and uncertainties (Garrison & Vaughan, 2008). Thus, studying the effectiveness of these two teaching methods is crucial. Particularly for India, the Digital India Program, SWAYAM, DIKSHA, and the National Education Policy (NEP) of 2020 have rapidly integrated technology into the education system. One of the emphases of the NEP of 2020 is the use of technology in education to enhance the teaching-learning process and improve access to quality education (Ministry of Education, 2020). During and after the pandemic, many Indian schools relied on the online teaching model, which calls for an assessment of the impact this has had on students. Indian studies state that although online teaching offers flexibility and the continuum of learning, poor internet connectivity, inadequate hardware, and a lack of teacher-student interaction negatively impact online teaching (Mishra et al., 2020). Academic achievement is a clear indicator of the



effectiveness of an education system and how well the desired goals of learning are met. Considering the current use of both online and offline teaching, it is important to assess the effectiveness of these two teaching methods to improve the education system and optimize teaching methods.

Review of Related Literature

Educational researchers from around the world are especially interested in investigating both online and offline teaching methods. Anderson (2008) addressed the online learning framework and the importance of using technology to offer flexibility in the design of learning systems. Moore and Kearsley (2012) described online learning as an avenue for self-directed learning and a means to access educational resources outside of the conventional learning environment. Garrison and Vaughan (2008) reviewed instructional methods and found that, regardless of the instructional method, interaction between teachers and learners is the foundation for positive learning outcomes. Means et al. (2013) used a meta-analytic research method to study online and blended learning environments and found that, when coupled with the right instructional methods, provision of online and blended learning can have a positive effect on learners' academic performance. Dhawan (2020) described the pros and cons of virtual learning in the COVID-19 pandemic, and found that, given the circumstances, online teaching was better than no teaching. Mishra et al (2020) did similar research on the teaching methods utilized in India and found significant problems concerning the internet, access to devices, and engaging learners. According to Vygotsky (1978), social interaction is key to the learning process, and students learn best when they are actively participating. Hattie (2009) described the things that improve student outcomes and listed teacher quality, the activity, and feedback in the classroom as the most important.

Literature describes several perks and drawbacks associated with offline and online teaching. For instance, flexibility and easy access complemented by technology are perks associated with online teaching. On the other hand, offline teaching provides opportunities for personal interactions and feedback, and fosters engagement within the classroom. Therefore, studying the effectiveness of offline and online teaching concerning learners' academic achievement is critical in the field of educational research.

Need and Significance of the Study

The advancement of information and communication technology has significantly influenced teaching and learning processes. After the COVID-19 pandemic, there has been a significant increase in the presence of online teaching. This advancement in teaching and communication technologies has altered the methods of teaching and learning. It has also come to the point that the effectiveness of various methods of teaching



needs to be assessed. The rapid adoption of online and offline teaching warrants the assessment of their effectiveness in relation to students' academic achievement. The importance of academic achievement at secondary school level cannot be overstated; students gain the foundational knowledge and skills necessary for their higher education and future professions. Assessing the effectiveness of online and offline teaching helps ascertain the teaching methods that foster and enhance educational outcomes. This study may help teachers, school heads, and educational policy and research practitioners in integrating various methods of teaching and technology. It may enhance the teaching and learning processes and improve the academic performance of learners.

Objectives

1. To study the academic achievement of learners taught through online teaching.
2. To study the academic achievement of learners taught through offline teaching.
3. To compare the effectiveness of online and offline teaching on the academic achievement of learners.

Hypothesis

H₀₁: There will be no significant difference in the academic achievement of learners taught through online teaching and those taught through offline teaching.

Methodology

Research Method

The researcher adopted a quantitative research approach using a comparative research design to compare the effectiveness of online and offline teaching in terms of learners' academic achievement.

Population of the Study

The population of the study comprised all students enrolled in government and private secondary schools in Darbhanga District, Bihar.

Sample of the Study

A sample of 120 students was selected for the study. The sample comprised 60 students who had received instruction through online teaching and 60 students who had received instruction through offline teaching.



Sampling Technique

The Researcher used Purposive sampling technique for the selection of the sample. The students were selected on the basis of their exposure to online and offline modes of teaching. This technique enabled the researcher to identify participants who possessed the specific characteristics required for the study.

Tool for Data Collection

An Academic Achievement Record Sheet prepared by the researcher was used for data collection. The academic achievement scores of the students were obtained from their recent school examination records and recorded systematically for analysis.

Statistical Techniques

Mean and Standard Deviation were used to describe learners' academic achievements with respect to the two groups differentiated by teaching modes. The Independent Samples *t*-test was employed to compare the academic achievements of the two groups and determine if the difference was significant.

Analysis and Interpretation of Data

The data collected from the sample respondents were classified, tabulated, and analyzed in accordance with the objectives of the study. The effectiveness of online and offline teaching on the academic achievement of students was examined using descriptive statistics (Mean and Standard Deviation) and the Independent Samples *t*-test. The results of the data analysis are presented in the following tables, along with their interpretations.

Objective 1: To study the academic achievement of learners taught through online teaching.

Table 1: Academic Achievement of Learners Taught through Online Teaching

Group	N	Mean	SD
Online Teaching	60	69.57	10.29

Interpretation

The academic achievement of learners taught via online teaching is presented in Table 1. The mean score of the students was found to be 69.57, with a standard deviation of 10.29. This indicates that learners, who were taught via online teaching, achieved a moderate level of academic achievement. The standard deviation reflects a moderate level of variation among the students' academic achievement scores.

**Objective 2: To study the academic achievement of learners taught through offline teaching.****Table 2: Academic Achievement of Learners Taught through Offline Teaching**

Group	N	Mean	SD
Offline Teaching	60	77.33	9.28

Interpretation

Table 2 details the academic success of students from secondary schools who were taught using offline methods. The mean and standard deviation of their scores were 77.33 and 9.28, respectively. The mean score suggests that students who were taught using offline methods reached a high degree of academic success. The value of the standard deviation indicates a moderate difference among the students' scores. Therefore, it can be concluded that learners who were taught using the offline method displayed a high degree of academic success.

Objective 3: To compare the effectiveness of online and offline teaching on the academic achievement of learners.

H₀: There is no significant difference in the academic achievement of learners taught through online teaching and those taught through offline teaching.

Table 3: Comparison of the Effectiveness of Online and Offline Teaching on Academic Achievement among Secondary School Student

Group	N	Mean	SD	t-value	p-value	Result
Online Teaching	60	69.57	10.29	4.34	0.00003	Significant
Offline Teaching	60	77.33	9.28			

Interpretation

Table 3 shows the effectiveness of online versus offline methods of teaching as they relate to the academic success of learners. The mean score for the academic success of students who were taught using the online method was 69.57 and their standard deviation was 10.29. The mean score and standard deviation of the students taught using the offline method was 77.33 and 9.28, respectively. The t value was found to be 4.34, and the p value (0.00003) was lower than the 0.05 level of significance. This indicates that the difference in



the academic success of students who were taught using the online and offline methods was statistically significant.

Because the score of the offline teaching group was higher than that of the online teaching group, offline teaching was considered to be more effective.

Testing of Hypothesis

The null hypothesis stated that there is no significant difference in the academic achievement of students taught through online teaching and those taught through offline teaching. Since the obtained p -value (0.00003) was less than the level of significance (0.05), the null hypothesis was rejected. Hence, it was concluded that a statistically significant difference exists in the academic achievement of students receiving online and offline instruction. The findings further indicated that students taught through offline teaching achieved significantly higher academic achievement than those taught through online teaching, suggesting that offline teaching was more effective in enhancing students' academic achievement.

Discussion and Conclusion

It was important for the research being done to assess the impacts that online and offline classroom teaching have on secondary school student academic achievement. The research being done shows that students in offline classrooms achieved higher academic achievement than students in online classrooms. The average score for the group that learned in an offline classroom ($M = 77.33$) was higher than that of the group that learned in an online classroom ($M = 69.57$). The offline teaching group t -value = 4.34 and was significantly different at the 0.05 level. There are many advantages to classroom teaching and many potential reasons why offline classroom teaching is superior. Offline classroom teaching is teaching that has the face-to-face contact of the teacher and the learners. Offline classroom teaching also has the potential for better teaching and learning through the direct interaction of the learners and the teacher. Teaching and learning is also more effective and efficient in an offline classroom setting through active engagement and collaboration. While online classroom teaching has many advantages that include teaching and learning at one's own pace, there are a number of challenges for online classroom teaching that include poor interaction, poor engagement, poor and distracting classroom environment, and poor technology. The challenges and disadvantages of online classroom teaching have a negative impact on teaching and learning achievements. The results of the study being done support the result of previous research that the interaction of the teacher and the learners has a tremendous effect on the achievement of the learners. The results also show that while



online classroom teaching is an effective and viable option classroom teaching is preferred and is the most effective for academic achievement.

The purpose of the study was to analyze the impact of online versus offline teaching methods on the academic performance of learners in the Darbhanga District of Bihar. The results indicated that students who learned via offline methods scored higher in academic achievement compared to those who learned via online methods. The study noticed the presence of a statistically significant difference between the two groups, and therefore, the null hypothesis was rejected. The study therefore, determined that offline methods of teaching are better than online methods of teaching to improve academic achievement for learners. The study found that due to the immediate feedback and interaction in teaching, along with participation in class and guidance of the teacher, resulted in a significant impact on student success. Although online teaching has its flexibility and accessibility, offline teaching methods cannot be fully substituted. The results of the study recommend that teaching methods that are based in the classroom continue to be improved and integrated with the online methods to enhance the learning process. The aim of the study was to achieve an optimal combination of offline and online teaching methods to improve the academic performance of students.

Delimitations:

1. This study is confined to secondary school students.
2. This study is limited to Darbhanga district only.

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