

Engagement in Blended Learning and Academic Performance Among Secondary Level Students

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ABSTRACT

Education is the utmost importance for personal development, societal progress, and economic growth. Effective teaching methods are essential in providing quality education and ensuring students' acquisition of knowledge and skills. In recent years, innovative teaching methods and approaches have gained attention, such as blended learning, flipped classrooms, and project-based learning. These methods aim to enhance student engagement, promote active learning, and foster creative thinking, problem-solving abilities and skills. In this study, the researcher used the survey method to analyse the effect of student engagement in blended learning on academic performance among secondary school students in Jammu and Kashmir. Probability sampling types was used to collect the data from 400 secondary level students. To collect the data a self-developed questionnaire was used in this study. Frequency, range, percentage, mean average, product moment correlation, and paired sample t-test were used as statistical techniques. The results of the study reveal that a significant effect of engagement in blended learning on academic performance is found among secondary school students. The findings of the study show that students who are actively engaged in the learning process are more likely to be motivated, focused, and invested in their education. By employing various teaching methods and embracing innovative approaches, educators can create engaging and impactful learning experiences that empower students to succeed in an ever-changing world.

Keywords: Students Engagement, Blended Learning, Academic Performance, Jammu and Kashmir

Education plays a vital role in shaping individuals and societies. It is essential for personal development, social progress, and economic growth. The importance of education lies in its ability to empower individuals with knowledge, skills, and values, enabling them to lead fulfilling lives and contribute to their communities. Education equips individuals with critical thinking, problem-solving, and communication skills, preparing them for future challenges and opportunities. Effective methods of teaching are crucial to ensuring quality education. Teachers play a central role in facilitating learning and creating engaging and meaningful experiences for students. The methods of teaching employed by educators significantly impact on students understanding, retention, and

application of knowledge. Various teaching methods exist, including traditional lectures, interactive discussions, hands-on activities, collaborative projects, and technology-enhanced approaches such as the flipped classroom, virtual reality, augmented reality, and blended learning. The International Commission on the Development of Education states that "educational technology is the cognitive and operational power that arranges, re-arranges, and systematizes the application in a scientific way of the institution's apparatus and materials to enhance the teaching and learning process". In

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educational technology, there are many approaches and techniques of learning such as, online learning, web-based learning, virtual classroom learning, flipped learning, ICT-based constructivist learning, cooperative learning, online collaborative learning, project-based learning, and one of them is blended learning

Blended Learning

According to the Oxford Dictionary definition, “blended learning is a style of education in which students learn via electronic and online media as well as traditional face-to-face teaching”. Blended learning is an approach that removes barriers to equity and enables students to control the where, when, and how of their own learning. It is a mixed method of learning where students learn face-to-face and through online teaching resources without any hesitation. It is a combination of traditional classroom and online learning where students are physically present. Blended learning is a very effective strategy in the educational landscape.

In blended learning, students and teachers learn together using a mix of traditional and digital tools, such traditional teaching with projectors, smart boards, laptops, desktops, mobile phones, tablets, etc. Blended learning environments give students and teachers a lot of options for teaching and learning, which can help students improve their skills, abilities, interests, aptitudes, and ways of learning. Blended learning is a way of learning in which students learn both in the classroom and through electronic or virtual media.

Blended learning is a plan or set of strategies for concentrating on improving the student’s achievement, potential, attitudes, aptitudes, skills, creative thinking, capability, and interest in the teaching and learning environment and optimizing the learning objectives by spreading them over the personal learning technology at the right time and place. Blended learning extends instructional time, personalizes learning progress, empowers students, and increases engagement. Blended learning gives opportunities for collaborative learning, logical thinking, reflective learning, and practical learning.

Engagement of students in blended learning

Blended learning, is a mix up of the traditional teaching and online learning, has gained significant

attention in recent years as an innovative approach to education. One crucial aspect of blended learning is student engagement, which refers to the active involvement, interest, and motivation of students in the learning process. Engagement of students in blended learning is a topic of growing interest among educators and researchers. It involves understanding how students interact with online resources, participate in virtual discussions, collaborate with peers, and engage in various learning activities within the blended learning environment. It offers a variety of instructional strategies, such as multimedia presentations, interactive simulations, and virtual labs, that can enhance student engagement and promote active learning.

Moreover, the flexibility of blended learning allows students to access learning materials at their own pace and convenience, fostering a sense of autonomy and motivation. However, it is essential to understand the factors that influence student engagement in blended learning and how it relates to their academic performance. This understanding can inform instructional practices, curriculum design, and the effective integration of technology in education. By exploring the engagement of students in blended learning, educators and policymakers can develop strategies to maximize student participation, motivation, and achievement in this instructional model. By examining the relationship between student engagement and academic outcomes, we seek to provide valuable insights for educators, policymakers, and researchers in enhancing the effectiveness of blended learning programs. Understanding student engagement in blended learning is crucial for creating engaging and effective learning experiences that meet the diverse needs of students in today’s digital age. Blended learning is a big part of the way that education is changing from a traditional way of learning to a way of learning that is based on technology. Some of them are listed below:

- ❑ Blended learning includes digital tools such as notebooks, assignments, practical sheets, and presentations.
- ❑ It also includes the internet connectivity, Wi-Fi, and online resources etc.

- ❑ This new way of teaching helps students learn the skills they need to be successful in the workplace and in life.
- ❑ Blended learning gives students ideas for skill-based education, which helps them plan for the future.
- ❑ It gives freedom to the learner for self-learning, skill-based learning, self-motivating, engaging and future competencies.
- ❑ It gives better chances for team teaching and collaborative learning.
- ❑ It provides intellectual knowledge and critical thinking to learners.
- ❑ Enable students to access online materials at anytime and anywhere without any restrictions.
- ❑ BL increases learning capabilities in specialized subjects as well as in curricular and co-curricular activities.
- ❑ Provides digital learning skills and how to use digital infrastructure.
- ❑ Blended styles of teaching and learning make resources reliable, authentic, and reproducible.

Blended learning also a plan for concentrating on improving the student's achievement, potential, capability, and interest in the teaching and learning environment and optimizing the learning objectives by spreading them over the personal learning technology at the right time and place. It extends instructional time, personalizes learning progress, empowers students, and increases engagement. Blended learning gives opportunities for collaborative learning, logical thinking, reflective learning, and practical learning. Moreover, in a blended learning environment, teachers serve as mentors, coaches, and knowledge providers. Teachers play an active and effective role in the teaching and learning process, facilitating how to apply knowledge from theory to practice. A teacher in a blended classroom is known as a facilitator, counsellor, team leader, and resource person in the educational process. Similarly, as compared to the role of the teacher, learners also play a significant role in the blended learning classroom.

Review of related literature

Amit Mahajan and Dharendra Sharma (2012) conducted a study on "Strengths, Weaknesses,

Opportunities, and Threats Analysis of Information and Communication Technology Infrastructure and Services in Jammu University". In this study, the researcher revealed that the university has better ICT infrastructure and services for the students. The results of the study show that most institutions want better facilities in ICT for the teaching and learning process, just as the University of Jammu has better facilities and wants to develop an institution in information and communication technology.

Syed Noor-Ul-Amin (2013), a study on "an effective use of information and communication technology for education and learning by leveraging worldwide knowledge". In this study, the researcher identified and assessed significant strategies in national as well as international research and effective use of ICT for education with respect to the teaching and learning process, Usage of ICT was very helpful in the educational process, which enhanced the teaching strategies.

Ishtiaq *et al.* (2017) conducted a study on "the effects of information and communication technology on the students' academic achievement and retention in chemistry". Experimental methods were used for the study. In this study, 50 students from the 9th grade were chosen at randomly. Mean average, standard deviation, and t-test were used for analyzing the data through statistical analysis. In this study, the researcher found that information and communication technology had a positive effect on students' academic performance and retention, and ICT was found to be more effective, interesting, and motivating for the students as well as the teacher.

Mushtaq Ahmed Patel (2020) conducted a study "on open educational resources as a teaching-learning tool in the times of COVID-19 in India". In this study, the researcher found that open educational resources are an innovative approach to the teaching and learning process. OER assist both students and teachers in easily and quickly accessing material. The teacher and student can access the material through some electronic devices such as, computer, mobile phone, desktop, smart phone, tablet, etc.

Vallee *et al.* (2020) "Blended learning compared to traditional learning among medical students". In this study, the researcher discovered that blended learning is more effective than traditional learning.

In a systematic and meta-analytical study, the researcher selected a total of 9943 students with a medical background. The methods of the study depend on a systematic and meta-analytic review. In this study, the researcher further found that out of 56 studies, 3 supported offline education, 7 supported digital support, 34 supported online education, 8 studied computer-assisted learning, and 5 supported virtual blended learning. The researcher analyzed all the data pooled from the study and found that blended learning is more effective as compared to traditional learning.

Dziubanet *et al.* (2018) A study on “the new normal and emerging technology”. This study explores the many outcomes, implications, and possibilities of future conditions for blended learning in education at all levels, but specifically at the higher education level. In this study, the researcher used CART methods to analyze data in SPSS. In this study, the author opposes blended learning because it is associated with access, success, and students’ awareness of their learning environment. According to the study’s findings, blended learning is at the forefront of modern innovative technologies and their developments. It will be intimately specific to modern evidence and communication technology that are similar to some features of human thought and processes.

Anthony *et al.* (2022) “Blended learning adaptation and implementation in higher education”. In this study, the researcher found innovative learning techniques and rapid modification in the teaching learning process and further found, through a systematic review, how blended learning was implemented and adopted and what the requirements for the blended learning classroom were. According to the researcher, systematically analyzing the reviews and meta-analyses of 94 studies that are from 2004 to 2020 found that the factors that influence students, teachers, and administrators for adopting a blended learning environment. For the adaptation of blended learning, infrastructure is more important, and the cooperation of the school management committee or higher authority should be required. The result of the study reveals that the learner, teacher, and administration roles are very essential for the implementation of a blended learning approach.

Bouilheres *et al.* (2020) “Students learning experiences through blended learning”. This study is based on quantitative in nature and online survey that was used to collect the data from 66 students, the researcher found that the learning contents and learning activities in the teaching and learning process were tracked via a learning management system. Education through blended learning is very effective in promoting interactions between students, teachers, peer groups, course materials, etc. In this study, the researcher analyzed four dimensions of the scale, such as online learning experience, self-confidence, flexibility in the teaching and learning process, and engagement of the students. The result of the study reveals that there is a significant difference between all the dimensions.

Mushtaq and Banwaree Lal (2022) conducted a study on “Blended Modes of Education and Their Relevance in the Teaching-Learning Process.” In this study, the researcher tries to find out the emergence of technology in the educational process. The result of the study reveals that blended learning is the combination of learning where students learn through offline mode (physical presence) and online tools in the teaching and learning process. Blended learning is more effective, interesting, and motivating for the students as well as the teachers and enhances the learning potential, curiosity, and motivation. It also removes the relationship gap between teacher and student and gives students more freedom. The implementation of blended learning needs better infrastructure, well-trained teachers, experts, and a better system of technology for an effective and interesting teaching and learning process. In this study the researcher selected the students from only border district of Poonch in Jammu and Kashmir. The students of border areas have lots of issues and challenges, such as, due to network connectivity, cease fire violations, cross-border firing, no basic facilities for education, online resources, WIFI, internet, and especially transport systems for border area students. If the proper facilities were provided to those students, their engagement level in blended learning and their academic performance would be high.

Significance of the study

By understanding the relationship between student engagement in blended learning and academic success, educators and policymakers can develop effective strategies to enhance engagement and improve academic performance. The study also contributes to the development of personalized learning approaches by exploring how engagement in blended learning can be adapted to meet the diverse needs and learning styles of secondary-level students. The findings of this study will inform instructional design and the implementation of blended learning programme, enabling educators to create engaging learning activities and select appropriate online resources. Moreover, the study has implications for resource allocation decisions, allowing schools and educational institutions to allocate resources effectively to maximize student engagement and subsequently improve academic performance. The policy implications of this study highlight the potential for adopting and integrating blended learning approaches in secondary education, with policymakers using the findings to develop guidelines and policies that support effective implementation.

Statement of the problem

The present study aims to explore the relationship and effect of student engagement in blended learning on academic performance. The majority of the students at Mankote School are from the border district of Poonch in Jammu and Kashmir. The selected students for the present study have many issues and challenges such as, due to network connectivity, cease fire violations, cross-border firing, no basic facilities for education, online resources, WIFI, internet, and especially transport systems for border area students. In these circumstances, the researcher felt a need under the title "*Engagement in Blended Learning and Academic Performance Among Secondary Level Students*".

Objectives

1. To find out the level of student's engagement in blended learning among secondary level students
2. To find out the level of academic performance among secondary-level students

3. To know the relationship between student engagement in blended learning and academic performance among secondary level students
4. To know the effect of student's engagement in blended learning on academic performance among secondary level students

Hypothesis

- H_{01} : There is no significant relationship between student engagement in blended learning and academic performance among secondary-level students.
- H_{02} : There is no significant effect of student's engagement in blended learning on academic performance among secondary-level students.

Methodology

In this study, the researcher selected the survey method of research under descriptive types for analyzing the relationship and effect of student engagement in blended learning on academic performance among secondary-level students. The present study is quantitative in nature. The study includes government higher secondary school Mankote as the population of the study. On the basis of population, the researcher selected 11th and 12th grade students for the study. In this study, 200 students were selected by using probability sampling techniques. For the collection of data, the researcher developed a scale for students' engagement with blended learning for the study. Moreover, the researcher chooses the yearly examination marks for analyzing the data. For the finding and interpretation of data, the researcher used the mean average, frequency, percentage, product moment correlation, and paired sample t-test as a statistical technique.

Analysis and interpretation

Objective 1: To find out the level of student's engagement in blended learning among secondary level students. To analyze the level of student's engagement in blended learning the researcher used range, frequency and percentage, the analyzed data are shown in table 1.

The above table 1 shows the range, frequency, and percentage of the level of engagement of students

Table 1: Showing the level of the engagement level of students in blended learning

Variables	Range	Level	Frequency	Percentage
Student's Engagement in Blended Learning	63 and above	High	109	54.5%
	30-62	Average	80	40%
	29 and below	Low	11	5.5%
Total			200	100%

in blended learning among secondary level students in Jammu and Kashmir. Out of 200 students, 109 (54.5%) have a high engagement level in blended learning, 80 (40%) have an average engagement level in blended learning, and 11 (5.5%) have a low level of engagement in blended learning. So therefore, it can be concluded that the majority of the students, 109 (54.5%), have a high level of engagement in blended learning among secondary-level students in Jammu and Kashmir.

The results of the study indicates that the majority of the students have a high level of engagement in blended learning. Students who are actively engaged in the learning process are more likely to be motivated, focused, and invested in their education. Blended learning provides students with a variety of interactive and multimedia resources, allowing them to have a more personalized and engaging learning experience. The flexibility of blended learning, where students can access materials at their own pace and convenience, may also contribute to higher engagement levels. Educators and policymakers should consider implementing strategies to further enhance student engagement, such as incorporating more interactive activities, fostering collaboration among students, and providing timely feedback and support.

The small percentage of students (5.5%) with a low level of engagement highlights the need to identify and address the factors that may hinder student engagement in blended learning. It is crucial to understand the reasons behind this low engagement level and develop interventions to support these students. This could involve providing additional resources, offering extra guidance, or implementing targeted interventions to address specific barriers to engagement. Overall, the findings suggest that the majority of secondary-level students in Jammu and Kashmir are highly engaged in blended learning. This is a positive indication of the effectiveness of blended learning in promoting student engagement.

Objective 2: To find out the level of academic performance among secondary level students. To analyze the level of academic performance, the researcher used range, frequency and percentage, the analyzed data are shown in table 2.

The table 2 shows the range, frequency, and percentage of the level of academic performance among secondary-level students in Jammu and Kashmir. Out of 200 students, 99 (49.5%) have a high level of students' academic performance, 81 (40.5%) have an average level of academic performance, and 20 (10%) have a low level of academic performance. So therefore, it can be concluded that the majority of the students (99), that is, 49.5%, have a high level of academic performance among secondary-level students in Jammu and Kashmir.

The findings indicate that a significant proportion of the students have achieved a high level of academic performance. This is a positive outcome and suggests that the blended learning approach implemented in Jammu and Kashmir is active in supportive student learning and academic achievement. The high level of academic performance observed among the majority of students (49.5%) can be attributed to various factors. Blended learning provides students with a range of resources and instructional approaches that cater to different learning styles and preferences. This flexibility allows students to continuously involve with the content in ways that are most effective for their individual learning needs, thus enhancing their academic performance.

Moreover, it is worth noting that a substantial number of students (40.5%) achieved an average level of academic performance. While this is still a satisfactory outcome, it indicates that there is scope for improvement in terms of enhancing academic performance among these students. Educators can further adapt instructional strategies and provide additional support to help these students reach higher levels of achievement.

Additionally, the presence of a small percentage

Table 2: Showing the level of academic performance among students

Variables	Range	Level	Frequency	Percentage
Student’s Engagement in Blended Learning	63 and above	High	99	49.5%
	30-62	Average	81	40.5%
	29 and below	Low	20	10%
Total			200	100%

Table 3: Showing the relationship between student engagement in blended learning and academic performance

Pair of Variable	N	df	‘r’ value	p- value	Remarks
Student Engagement in Blended Learning and Academic Performance	200	198	0.708	1.302	Not Significant at 0.05 level

*Significant at 0.05 level.

of students (10%) with a low level of academic performance highlights the need to address the factors that may hinder their learning and achievement. Identifying and addressing these challenges can help improve academic performance for these students. This could involve providing targeted interventions, personalized support, and additional resources to address their specific needs.

Furthermore, the findings suggest that the majority of secondary-level students in Jammu and Kashmir have achieved a high level of academic performance. This indicates the effectiveness of the blended learning approach in supporting student learning and success. By further enhancing instructional strategies and providing personalized support, educators can help all students reach their full potential and improve overall academic outcomes in blended learning environments.

Objective 3: To know the relationship between student engagement in blended learning and academic performance among secondary level students. To test the null hypothesis “ H_{01} There is no significant relationship between student engagement in blended learning and academic performance among secondary-level students” the researcher used product moment correlation as a statistical analysis. The analyzed data shown in table 3.

The table 3 reveals the coefficient of correlation between students’ engagement in blended learning and academic performance among secondary school students in the Jammu region of Jammu and Kashmir. The table 3 indicates that the r-value of both variables is 0.708 and the p-value is 1.302 with

198 degrees of freedom. So, it can be concluded that there is no significant relationship between students’ engagement in blended learning and academic performance in secondary school. Hence, the null hypothesis, “There is no significant relationship between student engagement in blended learning and academic performance among secondary-level students,” is not rejected.

The p-value of 1.302 is greater than the conventional level of significance (usually set at $p < 0.05$). Therefore, we can say that there is no major linear association between these two variables among secondary school students in the Jammu region.

Furthermore, based on the findings presented in the table 3, there is no statistically significant relationship between students’ engagement in blended learning and their academic performance among secondary-level students in the Jammu region of Jammu and Kashmir.

Objective 4: To know the effect of student’s engagement in blended learning on academic performance among secondary level students. To test the null hypothesis “ H_{02} There is no significant effect of student’s engagement in blended learning on academic performance among secondary-level students” the researcher used mean average, standard deviation and paired sample t-test as a statistical analysis. The analyzed data are shown in table 4.

Table 4 indicates the effect of student’s engagement in blended learning on academic performance among secondary-level students in Jammu and Kashmir. The mean average of student’s engagement in blended learning on academic performance is

Table 4: Showing the effect of student’s engagement in blended learning on academic performance among secondary level students

Pair of Variable	N	Mean	SD	df	‘r’ value	‘t’- value	p- value	Remarks
Student Engagement in Blended Learning	200	78.5	8.86	198	.178	8.545	*0.00	Significant at 0.01 level
Academic Performance	200	67.98	8.24					

*Significant at 0.01 level.

78.5 and 67.98, and the standard deviation of both variables is 8.86 and 8.24, respectively. The r-value is 1.78, and the t-value is 8.545 with 198 degrees of freedom. Therefore, from the table, 4 it can be concluded that there is a significant positive effect of student’s engagement in blended learning on academic performance among secondary-level students. Hence, the null hypothesis, “There is no significant effect of students engagement in blended learning on academic performance among secondary-level students,” is not accepted.

These findings suggest a significant positive effect of student’s engagement in blended learning on academic performance among secondary-level students in Jammu and Kashmir. The high correlation coefficient of 1.78 indicates a strong positive relationship between these two variables. Additionally, the t-value of 8.545, with a large degree of freedom, indicates a significant effect.

Moreover, the results suggest that there is indeed a significant positive effect of student’s engagement in blended learning on their academic performance. It is important to consider the practical implications of these findings. The mean averages of 78.5 and 67.98 indicate that, on average, students who are more engaged in blended learning tend to have higher academic performance. This suggests that incorporating blended learning methods, which combine online and traditional classroom instruction, can be beneficial for secondary-level students in Jammu and Kashmir.

However, based on the findings there is a significant positive effect of student’s engagement in blended learning on academic performance among secondary-level students in Jammu and Kashmir. These results suggest that incorporating blended learning methods can be beneficial for enhancing students’ academic performance. Blended learning extends instructional time, personalizes learning

progress, empowers students, and increases engagement. Blended learning gives opportunities for collaborative learning, logical thinking, reflective learning, and practical learning.

CONCLUSION

The aims of the study is to explore the relationship and effect of engagement in blended learning on academic performance among secondary-level students. The result of the study indicates that the majority of the students have a high level of engagement in blended learning and academic performance among secondary-level students in Jammu and Kashmir. The above finding indicates that there is no significant association between engagement in blended learning and academic performance among secondary-level students. Furthermore, reveals a significant positive effect of student’s engagement in blended learning on academic performance among secondary-level students in Jammu and Kashmir is found.

Additionally, the study also shows a significant positive effect of student’s engagement in blended learning on academic performance among secondary-level students in Jammu and Kashmir. This implies that, while engagement in blended learning may not be directly associated with academic performance, it still has a positive impact on academic outcomes. If the better facilities, good trained teacher and better online resource will be provided to the students in blended learning environment the quality of education would be increased and also it effects academic performance on the students.

Overall, this study contributes to the existing literature on blended learning and academic performance among secondary-level students in Jammu and Kashmir. The students of border areas having a lot of issues and challenges such as, due

to network connectivity, cease fire violations, cross-border firing, no basic facilities for education, online resources, WIFI, internet, and especially no transport systems for border area students. The government of India and Jammu and Kashmir government should pay special attention to those students whose are suffering such types of problems. It sheds light on the need for comprehensive approaches to education that go beyond engagement in blended learning and consider other influential factors. These findings can inform educational stakeholders in designing effective strategies to enhance academic performance among secondary-level students. there is a need for the betterment of resources in school education department and specifically in government higher secondary school Mankote.

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