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Blended Learning: An Innovative Approach to Enhance Students Performance at Senior Secondary Level

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Abstract

This paper explores the development of teaching methods and approaches, particularly with a shift from traditional teacher-centered to innovative, student-centered learning approaches. Traditional approaches that used to emphasize rote memorization and passive students have been defined with creativity, technology, and interactive learning approaches. Among the innovations is blended learning, which becomes a transformative model in learning because it integrates face-to-face teaching with digital tools in a flexible, personalized, and engaging learning environment. Different types of blended learning models, namely station rotation, flipped classroom, and the flex model, are discussed in the paper, with their specificities and possibilities described. Blended learning for the benefit of senior secondary education highlights meeting diverse needs, personalization in instruction, and readiness to face the digital age. The research supports the value of blended learning in student academic performance, increased students' engagement, development of critical thinking, and better collaborative work between teachers and their students. It further talks about implementation strategies for blended learning in classroom setup, planning of lessons, organization of a digital space, and even techniques of assessment. Concluding the paper, blended learning is not just the future of education but necessity for survival in the changing scene of learning. It equips the student with the kind of skills that are desirable both for academic and professional excellence.

Key terms: *Blended learning, academic achievement, rotation model etc.*

Introduction

Initially, education within schools was imparted through traditional teaching methods. “The **traditional teaching method** involves communicating knowledge or information through lectures delivered by a teacher in a classroom setting. In this method, the teacher assumes the role of the sender, while the students act as receivers who are expected to memorize the information.” This method is entirely teacher-centric, with the teacher being the primary source of knowledge.

Considering the societal changes, technological advancements, and the evolving needs, abilities, and interests of students, education has undergone continuous modifications over time. These changes have led to significant transformations in teaching processes and methods. It is imperative to embrace innovative teaching methods to effectively impart education.

(Kalyani and Rajasekaran, 2018) said that The most difficult task for any educator is to hold students' interest

and convey concepts in a way that will stick with them long after class is over. Redefining the classroom environment and implementing creative ideas that improve teaching and learning strategies are necessary for this to occur.

“**Innovative teaching methodology** entails the utilization and integration of novel methods, techniques, and strategies for instructional delivery in classrooms.” Unlike the traditional teacher-centered approach, it emphasizes student-centeredness. This approach revolves around placing students at the core and employing new methods and techniques that cater to their capacities, abilities, and interests. In essence, innovative teaching methods involve integrating creativity and innovation into teaching practices, including the incorporation of information and communication technology.

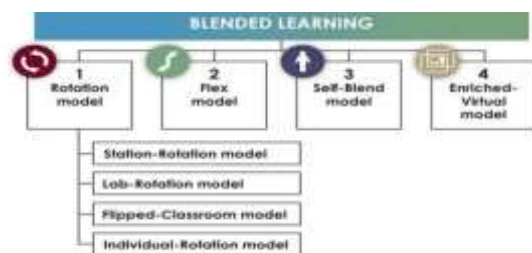
Innovative teaching methods encompass various types of instructional approaches. Given the significance of online education during the Covid-19 pandemic and the

enduring importance of face-to-face teaching, there has been a notable increase in the use of blended teaching methods.

Blended Learning

“Blended learning is an approach to teaching that combines traditional face-to-face teaching methods with the integration of technology.” This method preserves traditional teaching approaches while incorporating technology into the educational process. The term "blended learning" refers to a teaching and learning approach that combines in-person instruction with ICT-supported instruction. Direct instruction, indirect instruction, collaborative teaching, and individualized computer-assisted learning are all included in blended learning. **Lalima & Dangwal (2017)**. Blended learning is learning that combines face-to-face activities in class with learning activities using internet media. **Irwan et al., (2019)**

A 2011 report by **Horn and Staker**, titled *The Rise of K-12 Blended Learning*, presented a classification of six models of blended learning. This classification was later refined by **Staker and Horn** in their 2012 report, *Classifying K-12 Blended Learning*, which removed two of the six models and introduced a classification of four main models of blended learning.



Source: Classifying K-12 Blended Learning by Heather Staker and Michael B. Horn (2012)

Rotation Model

The rotation model of blended learning allows students to switch between different learning modalities, including online instruction, group projects, handwritten assignments, and individual tutoring. Most learning occurs on campus, except for homework assignments. This model includes four sub models. **According to (Ayob et al., 2020)** There should be at least one online learning station in each rotation model. Because students switch to different stations based on the teachers' preferences, the rotation approach is very adaptable.

Station Rotation Model

The model divides a class into small groups, each assigned to a station for a specific activity. These stations include online, teacher-led, hands-on, or paper pen assignments. After the fixed time, all groups rotate, encountering each station at least once.

In traditional brick-and-mortar institutions, the station rotation concept may offer an accessible option for students who lack convenient access to technology. **(Komur et al., 2022)**.

Lab Rotation Model

This rotation model is similar to the above model, but the online learning component takes place in a learning laboratory specifically designed for the online learning process (elearning). Students alternate between

classroom learning and e-learning laboratories. **(Dakhi et al., 2020)**

Flipped Classroom

"Online learning, offline application" is the model's motto. Lectures and hands-on homework are inverted in a flipped classroom. Before class, students study new material at home, and in-class time is spent actively learning and using the abilities they have acquired. Discussions, case studies, or project work can all be used to achieve this. It is the instructor's responsibility to assist the students in applying the course material and to respond to their inquiries. **(Sriraman, & Sundararasan,2023)**

Individual Rotation Model

The teacher selects learning modalities for each student, considering their unique needs. This approach differs from previous rotation models as students may not rotate to every available station. Teachers use learning laboratories, group projects, internet learning, and direct instruction to develop activities, with some students receiving direct instructions and returning for classroom-led practice. **(Sharma, 2021)**

Flex Model

a program where the teacher-of-record is present on-site, students follow a personalized, flexible schedule that alternates between learning mediums, and the majority of the content and teaching is provided online. Small-group instruction, group projects, and individual tutoring are just a few of the flexible and adaptive ways that the teacher-of-record or other adults offer in-person support when needed. While some implementations receive little support in person, others receive a lot. Some flex models, for instance, might supplement the online learning every day with in-person qualified teachers, while others might offer minimal in-person enrichment. Others might have different combinations of employees. When describing a specific Flex model, these variations are helpful modifiers. **(Staker and Horn, 2012)**

Self Blend Model

The "self blend" model allows students to customize their educational experience by choosing online courses to complement in-school training. The virtual teacher-of-record facilitates instruction in-person or off-site. This strategy is used when schools lack specific courses, such as Advanced Placement or language courses. Schools may also use labs or lounges for online learning if campus coursework is conducted. **(Beaver et al., 2014)**

Enriched Virtual Model

a whole-school program where students split their time between attending a physical campus and learning remotely via online content and instruction delivery for each topic (like math). Many enriched virtual programs started out as full-time online courses before evolving into blended learning programs that give students access to traditional classroom settings. Because students in Enriched-Virtual programs rarely visit the physical campus on weekdays, the paradigm is different from the Flipped Classroom. Because it is a whole-school experience rather than a course-by-course model, it varies from the Self-Blend model. **(Staker and Horn, 2012)**

Relevance of Blended Learning at the Senior Secondar Level

(a) Serving a variety of needs according to students

Users with severely restricted sight can use software for reading aloud content and dictation devices. Poor sight users can use screen magnifiers or keyboard functions like Ctrl+ and Cmd+. Learning disabilities users may use screen readers and dictation devices. Deaf users require captioning and transcriptions for audio/video. Fine motor impairments users may use keyboard commands and enabling technologies like speech recognition, mouth sticks, or head pointers.

In the study conducted by **Celestial et al., (2024)** results led the researchers to the conclusion that a careful and customized approach is necessary when teaching students with special needs in a blended learning setting. To guarantee that students with special needs receive the assistance they require to achieve, teachers should be adaptable, make use of technology, communicate frequently, integrate multisensory learning, give clear instructions and feedback, and work in tandem with special education specialists. Regardless of each student's unique skills and difficulties, teachers may establish an inclusive, stimulating, and productive learning environment for all students by following these steps.

(b) Opportunities for personalized learning

Technology is essential for implementing personalized learning. Tools from blended and online learning enable flexible pacing, tailored instruction, timely interventions, and learning anytime, anywhere. Understanding the distinctions between blended learning models and instructional designs is key to enabling personalized learning, which can drive innovative learning approaches. Blended learning combines face-to-face experiences with online platforms and tools to personalize instruction, serving as a pathway to shift instructional models toward true personalization. (**Patrick, 2013**).

Prepare students for digital age

Blended Learning involves integrating digital devices into classrooms to teach students essential 21st-century skills like critical thinking, collaboration, and problem-solving. By working digitally on core curriculum topics, students develop digital competencies that prepare them for the demands of a technologically advanced modern workforce. By utilizing technology effectively, students enhance their chances of future success, demonstrating the importance of incorporating digital resources into education. (**UNICEF, 2024**)

With the help of blended learning students improve their digital fluency and become more tech-savvy. (**Lalima and Dangwal, 2017**). Students with special educational needs are compelled to use digital and online technologies in blended learning settings, which organically increases their technical literacy and confidence in using new technology—two things that are crucial in the twenty-first century and beyond. (**Zavaraki and Schneider, 2019**)

Importance of Blended Learning

Enhanced academic performance

In the study of (**Ceylan and Kesici 2017**) they found that the experimental group who has studied in blended learning environment is academically more successful than the control group who has studied in present teaching environments. According to (**Tong et al., 2022**) Enhancing communication between professors and their classrooms is another feature of blended learning approaches that may help raise student accomplishment. Furthermore, they are better for teaching, easier to execute, and less costly. In the study of (**Alsalihi et al., 2019**) it was seen that Blended learning strategies enable students to achieve notable academic success by combining the benefits of synchronous and asynchronous learning processes.

Increased engagement and motivation

in the study of (**Arnesen et al., 2019**) discovered that preservice teachers felt more equipped to participate in personalized learning at the end of the course than they did at the start thanks to the course readings, the development of an online module based on blended learning pedagogies that included personalized learning experiences, and taking part in personalized course components. According to (**Omoni, 2019**) Combining the most effective aspects of online and in-person training increases student engagement and permits self-paced learning. Students are more involved in the learning process and interact with the learning materials more when using blended learning modalities, even though they may demand more work from the teacher (particularly in the beginning).

Development of critical thinking and problem solving skills

results of the study of (**Deechai et al., 2019**) show that In order to improve students' critical thinking at the PNI (modified) rate of 0.10 in the areas of critical thinking, study achievement, and learning management, educators and learners at vocational schools must create blended learning. (**Kurniawan et al.'s 2024**) study effectively demonstrates the value of the Digital Project-Based Blended Learning paradigm for enhancing college students' capacity for critical thought and problem-solving.

Better assessment opportunities with real time feedback

According to the study of (wang et al., 2024) The relationship between teachers and students is diversified when Rain Classroom is used for blended learning. In addition to giving feedback and assessments on learning during in-person class sessions, teachers can also give immediate feedback and evaluations on each student's participation and completion of pre-class talks and post-class activities.

(E) Enhanced teacher-student collaboration and communication

the results of the study (**Johler, 2022**) shows that In general, the teachers had positive opinions about how digital technology affected communication and teamwork. They discovered that students' collaborative learning and teacher-student communication have grown as a result of digital technologies. According to the

findings, there are three primary ways that digital technologies facilitate communication and collaboration in these blended learning settings: they were employed as a direct communication tool, as a mediator in group projects and educational procedures, and as a means of producing digital products as a group.

Implementation Strategies for Blended Learning

- **Setting up your blended classroom** - To enhance the success of your Blended Learning classes, ensure that your classroom and necessary tools are set up appropriately and actively consider the unique challenges of teaching in this space.
- **Physical and digital space considerations**
To regularly use Blended Learning in the classroom, create dedicated collaborative spaces for group projects and online content discussions, using resources like blackboards, whiteboards, and movable furniture for interaction. To ensure students have ample time to explore the Learning Passport, organize digital content logically and accessibly using clearly named categories, courses, and lessons. Set a rubric for consistency and ease of navigation in the entire Learning Passport.
- **Lesson planning for Blended Learning** - These are the essential components that are usually present in a successful lesson, while there is no one ideal method to write one and formats can differ greatly.
 - a) Objective or learning goal (b) introduction (c) prior knowledge activation
 - d) instructional input applying learning (e) independent practice (f) summary and closure.
- **Adjusting traditional plans for a blended approach** - Teachers often have a folder of lesson plans for each class group. By creative thinking, they can transform these plans into a blended approach, such as incorporating PowerPoint slides into the Learning Passport for Flipped or Station Rotation activities.
- **Managing a blended classroom** - To ensure smooth use of digital devices, plan ahead for tech support and establish a designated team for handling issues. Create a device checklist to cover common tasks like powering up, checking volume, and signing in. Regularly check devices for virus-freeness and any accumulated temporary content. Keep copies of the checklist with devices or display it on the classroom wall.
- **Classroom management techniques in a tech-infused environment** - Introduce the topic to the class, facilitate a session where everyone brainstorms key challenges for Blended Learning, divides the class into groups, and assigns equal challenges to each group. Each group must devise appropriate actions to mitigate each challenge. Capture all actions into a document, sign it, or read it aloud. The code of conduct should be in place, and students can refer to it whenever they act against it. Any unanticipated problematic activity can be a valuable learning point.
- **assessments** - Here are some ideas for quick formative assessment activities:
 - a) Quick checks or exit tickets, (b) Think-pair-share prompts, (c) One-minute papers, (d) Self-assessment checklists, (e) Interactive quizzes or polls (f) Classroom quizzes Conceptual puzzles or riddles.
- **Using digital tools for feedback and grading** - Audio and video feedback can be used for accessibility, while digital portfolios can be used for remote learning. Screensharing platforms like Teams, Zoom, or Google

Meet can be used for discuss the feedback with students. An Excel spreadsheet can be used for maintaining grades.

Conclusion

Education has transformed greatly from traditional teacher-centered approaches to new innovative student-centered ones using technology. Such transformation has been spurred by social, technological changes, and the diversity of students' needs. One of the leading innovative approaches is blended learning, where the traditional face-to-face method combines with digital tools for flexibility, personalization, and better engagement. Some models that can illustrate the idea of blended learning are station rotation, flipped classroom, and the flex model, as they help meet the various learning needs and styles.

Blended learning is especially relevant in senior secondary education, as it addresses diverse student requirements, fosters personalized learning, and prepares students for the digital age. It enhances academic performance, motivates students, and develops critical thinking and problem-solving skills. The integration of real-time feedback and collaboration tools further strengthens teacher-student relationships and supports active learning environments.

Blended learning requires thoughtful planning on physical and digital spaces, adaptations of lessons, and proper classroom management techniques. This approach will help in harnessing the usage of technology to enable a more vibrant and inclusive assessment and feedback system. Blended learning represents an innovative approach to education in that it equips the student and educator with all the skills and tools to succeed in the 21st century.

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