

Technology-Enhanced Collaborative and Blended Learning

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I. INTRODUCTION

Collaborative and Blended learning is an instructional methodology, a teaching and learning approach that combines face-to-face classroom methods with computer mediated activities to deliver instruction. This pedagogical approach means a mixture of face-to-face and online activities and the integration of synchronous and asynchronous learning tools, thus providing an optimal possibility for the arrangement of effective learning processes. Blended learning is the term given to the educational practice of combining digital learning tools with more traditional classroom face to face teaching. In a true blended learning environment, both the student and the teacher should be physically located in the same space. Despite this, the digital tools used should be able to be utilised by the students in order to enforce some control over the speed or topics of their learning.

The flipped classroom model is a similar program that aims to utilise technology in order to rearrange the learning experience and maximise the effectiveness of valuable face to face time in the classroom. In a flipped classroom programme, students would be encouraged to access digital learning materials via a cloud-based learning platform during their own time.

1.1 Need for the Change

The National Education Policy has given a rare glimpse in what can be achieved through the transformation of education. The new NEP clearly states that it is time to take on a policy that is undoubtedly student centric, or what can be safely put down as Education 4.0! The time has indeed come to recognize the fact that the student is the main stakeholder and that efforts must be taken to make the system respond to their dreams and aspirations. In this line of thinking the new policy gives the acceptability of many modes of learning including that of face to face learning, online learning and distance or virtual mode. It also promotes use of vocational courses, multi-disciplinary courses and multi-modal approaches there by focussing on Blended teaching-learning.

Blended Learning (BL) is not a mere mix of online and face-to-face mode, but it refers to a well-planned combination of meaningful activities in both the modes. The blend demands consideration of several factors, mainly focusing on learning outcomes and the learner-centred instructional environment. Given the emergence of digital technologies and the emerging importance of leveraging technology for teaching-learning at all levels from school to higher education, the NEP 2020 recommends for use of blended models of learning. The NEP-2020 states that while promoting digital learning and education, the importance of face-to-face in-person learning is fully recognized. Accordingly, different effective models of blended learning will be identified for appropriate replication for different subjects.

The important features of Blended Learning environment are:

1. Increased student engagement in learning.
2. Enhanced teacher and student interaction.
3. Responsibility for learning.
4. Time management and flexibility
5. Improved student learning outcomes
6. Enhanced institutional reputation.
7. More flexible teaching and learning environment
8. More amenable for self and continuous learning
9. Better opportunities for experiential learning

1.2 Recent Research identifies the following key Benefits of BL

1. Opportunity for collaboration at a distance: Individual students work together virtually in an intellectual endeavour as a learning practice.
2. Increased flexibility: Technology-enabled learning allows for learning anytime and anywhere, letting students learn without the barriers of time and location but with the possible support of in-person engagement. (Any speed, any mode, any language)
3. Increased interaction: BL offers a platform to facilitate greater interactivity between students, as well as between students and teachers.
4. Enhanced learning: Additional types of learning activities improve engagement and can help students achieve higher and more meaningful levels of learning.
5. Learning to be virtual citizens: Learners practice the ability to project themselves socially and academically in an online community of inquiry. Digital learning skills are becoming essential to be a lifelong learner, and blended courses help learners master the skills for using a variety of technologies.
6. Making BL Work Technology integration in itself is not necessarily BL.
7. BL provides making learning resources and experiences repeatable, reliable and reproducible.

Online mode of learning refers to several synchronous and asynchronous learning activities such as:

- Accessing Resources, mainly in the form of Open Educational Resources (consisting formats such as text, graphics, animations, simulations, gaming, interactive multimedia, etc.) uploaded on LMS by the instructor
- Accessing links, eResources, digital libraries suggested by the instructor as well as explored individually or in groups.
- Studying MOOCs/ SMOCs, etc. by the learner as per guidelines by the instructor (e.g. Instructor may connect students to a successful ongoing MOOC but plan several on-campus activities alongwith it.)
- Performing individual or group activities using any ICT tool or platform
- Participating in the workshops/webinars as per suggested by the instructor related to the curriculum
- Completing assignments and uploading on LMS / submitting to the instructor using other ICT platforms
- Attempting tests/quizzes etc.
- Physical labs, hackathons, working in maker spaces, etc.
- Appearing for periodical assessments, summative tests on-campus, etc.
- Any instructional activity for which students and teachers physically meet on the campus or else out of campus in the same geographical environments in the light of learning outcomes.

II. IPSIT Indian Framework for BL

BL has been implemented across the world successfully. Several models are so far proposed and researched for BL implementation. We propose IPSIT Model for the higher education institutes in India. We propose that every higher education teacher planning to offer his/her course in BL Mode should necessarily follow all phases of the IPSIT Model. IPSIT Stands for: Identify Resources and Learner-centred Activities Provide resources and announce activities on LMS Scaffolding and Support to learners Identification of learning gaps and feedback Testing.

Collaborative learning can occur peer-to-peer or in larger groups. Peer learning, or peer instruction, is a type of collaborative learning that involves students working in pairs or small groups to discuss concepts or find solutions to problems. Similar to the idea that two or three heads are better than one, educational researchers have found that through peer instruction, students teach each other by addressing misunderstandings and clarifying misconceptions.

2.1 Why use Collaborative Learning?

Research shows that educational experiences that are active, social, contextual, engaging, and student-owned lead to deeper learning. The benefits of collaborative learning include:

- Development of higher-level thinking, oral communication, self-management, and leadership skills.
- Promotion of student-faculty interaction.
- Increase in student retention, self-esteem, and responsibility.

- Exposure to and an increase in understanding of diverse perspectives.
- Preparation for real life social and employment situations.

Considerations for using collaborative learning

- Introduce group or peer work early in the semester to set clear student expectations.
- Establish ground rules for participation and contributions.
- Plan for each stage of group work.
- Carefully explain to your students how groups or peer discussion will operate and how students will be graded.
- Help students develop the skills they need to succeed, such as using team-building exercises or introducing self-reflection techniques.
- Consider using written contracts.
- Incorporate self-assessment and peer assessment for group members to evaluate their own and others' contributions.

For larger group work projects, here are some strategies to help ensure productive group dynamics:

- Provide opportunities for students to develop rapport and group cohesion through icebreakers, team-building, and reflection exercises.
- Give students time to create a group work plan allowing them to plan for deadlines and divide up their responsibilities.
- Have students establish ground rules. Students can create a contract for each member to sign. This contract can include agreed-upon penalties for those who fail to fulfill obligations.
- Assign roles to members of each group and change the roles periodically. For example, one student can be the coordinator, another the note-taker, another the summarizer, and another the planner of next steps.
- Allow students to rate each other's quality and quantity of contributions. Use these evaluations when giving individual grades, but do not let it weigh heavily on a student's final grade. Communicate clearly how peer assessment will influence grades.
- Check in with groups intermittently but encourage students to handle their own issues before coming to you for assistance.

“Collaborative learning” is an umbrella term for a variety of educational approaches involving joint intellectual effort by students, or students and teachers together. Usually, students are working in groups of two or more, mutually searching for understanding, solutions, or meanings, or creating a product. Collaborative learning activities vary widely, but most center on students' exploration or application of the course material, not simply the teacher's presentation or explication of it. Collaborative learning represents a significant shift away from the typical teacher centered or lecture-centered milieu in college classrooms. In collaborative classrooms, the lecturing/ listening/note-taking process may not disappear entirely, but it lives alongside other processes that are based in students' discussion and active work with the course material. Teachers who use collaborative learning approaches tend to think of themselves less as expert transmitters of knowledge to students, and more as expert designers of intellectual experiences for students-as coaches or mid-wives of a more emergent learning process.

III. COLLABORATIVE LEARNING APPROACHES

Collaborative learning covers a broad territory of approaches with wide variability in the amount of in-class or out-of-class time built around group work. Collaborative activities can range from classroom discussions interspersed with short lectures, through entire class periods, to study on research teams that last a whole term or year. The goals and processes of collaborative activities also vary widely. Some faculty members design small group work around specific sequential steps, or tightly structured tasks. Others prefer a more spontaneous agenda developing out of student interests or questions. In some collaborative learning settings, the students' task is to create a clearly delineated product; in others, the task is not to produce a product, but rather to participate in a process, an exercise of responding to each other's work or engaging in analysis and meaning-making.

1. Collaborative learning approaches have a positive impact, on average, and may be a cost-effective approach for raising attainment.
2. Pupils need support and practice to work together; it does not happen automatically. Professional development

can support the effective management of collaborative learning activities.

3. Tasks and activities need to be designed carefully so that working together is effective and efficient, otherwise some pupils may struggle to participate or try to work on their own. It is important to ensure that all pupils talk and articulate their thinking in collaborative tasks to ensure they benefit fully.
4. Competition between groups can be used to support pupils in working together more effectively. However, overemphasis on competition can cause learners to focus on winning rather than succeeding in their learning.
5. The most promising collaborative learning approaches tend to have group sizes between 3 and 5 pupils and have a shared outcome or goal.

Though there has been always resistance to any change in any field, technology enabled teaching learning process cannot be bypassed these days. We all should support the new methodologies which are mostly research oriented and designed for the routine needs in the field of education.

REFERENCES

- [1]. Barkley, Elizabeth F., Patricia, K. Cross, Claire Howell Major, Collaborative Learning Techniques: A Handbook for College Faculty, Wiley, 2012.
- [2]. Cindy Hmelo-Silver, Clark Chinn, Carol Chan, Angela O'Donnell, The International Handbook of Collaborative Learning, 2013, Routledge.
- [3]. Amalia, Eka. Collaborative Learning: The Concepts and Practices in the Classroom. 10.31219/osf.io/xn67t., 2018.
- [4]. Laal, Marjan & Laal, Mozghan, Collaborative learning: What is it?. Procedia - Social and Behavioral Sciences. 10.1016/j.sbspro.2011.12.092, 2012.
- [5]. <https://teaching.cornell.edu/teaching-resources/active-collaborative-learning/collaborative-learning>
- [6]. <https://www.evergreen.edu/sites/default/files/facultydevelopment/docs/WhatisCollaborativeLearning.pdf>
- [7]. https://www.ugc.ac.in/pdfnews/6100340_Concept-Note-Blended-Mode-of-Teaching-and-Learning.pdf