Augmenting Teaching-Learning Process Through Discussion Forum and Padlet

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Abstract: Colleges and universities are facing new pressures to provide an educational experience that is engaging, motivating, and effective. Regardless of circumstances, effective learning shares many attributes like collaboration, exploration, and experiential techniques to foster student accountability for their learning. Engaging and providing stimulating tasks and activities to students are important and at the same time enunciate the need for the right approach, right technology usage, and relevancy. Collaborative learning not only helps to develop higher order thinking skills among students but also boosts their confidence, self-esteem, and understanding of diverse perspectives. Collaborative activities maximize educational experience by demonstrating content while also enhancing social and interpersonal skills. This paper focuses on the fundamentals of Discussion forums and Padlet as tools of best practices. Employment of these tools accelerates the learning process in synchronous and asynchronous environments thereby driving them toward success in this exponential landscape. In addition, these tools enhance student engagement through interactive, collaborative learning environments, fostering peer interaction, and feedback, ultimately improving retention and participation.

Keywords : Discussion forum, Padlet, tools for engagement

1. Introduction

Today's classrooms are very different from traditional ones, as the way of learning and educational landscapes have changed owing to the pandemic. Advocates of the Teaching-Learning process and the Indian Education System are reorienting teaching-learning models, pedagogies, and practices. To nurture a cohesive approach to learning, the partnership between key stakeholders: learners, educators, and parents plays a pivotal role. In the era of competition, collaborative learning not only assists academic orientation but also social and psychological development.

Many current studies have reflected that peer-to-peer learning is fun and engaging as students get involved, participate, and develop an understanding of the applications of theoretical concepts concerning real-world scenarios. Collaboration also aids in

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developing a social support system for learners and establishes a constructive and positive atmosphere. In contrast, competitive learning (rote learning) is the antithesis of collaborative learning. The primary drawback of competitive learning is that only one student emerges victorious thereby demotivating their peers. Additionally, stress and pressure resulting from this kind of competition can also lead to mental health issues which are detrimental to overall well-being.

Collaborative learning provides opportunities to share and care among peers as they appear to be on the same level, which helps build relationships, creating a conducive and stress-free learning environment. Hence, students are encouraged to be more receptive to feedback, leading to greater retention levels and helping us achieve higher-order thinking skills.

Evolving educational requirements accelerated the affectation of digital technologies to cater to the education needs of the learners. [1] mentioned that blended learning, flipped classrooms, various tools and platforms have become part and parcel of the teaching-learning process. Webinars, virtual classrooms, virtual labs, online exams, and assessments have become a common phenomenon. However, digital technologies would not ensure personalized learning, learner attention, meaningful peer-to-peer, and teacher interaction.

Interaction between students, instructors, and content fosters a conducive learning environment and they are the cornerstones of the learning process. A framework was proposed to ensure student interaction which highlights seven principles in the article titled "Seven Principles for Good Practice in Undergraduate Education" [2]. Learning outcomes for the course can be achieved by adhering to the following seven-point agenda.

• Improves interaction between students and faculty.

• Bestow opportunities for peer interaction.

• Foster student engagement by employing active teaching-learning pedagogies.

• Provide feedback at regular intervals addressing learning progression.

• Spend quality time on academic tasks.

• Institute high standards for academic work, and

• Addresses different learner styles and needs of learners during learning.

[3] Moore's three kinds of interactions ratify Chickering and Gamson's principles of good practice. The three kinds of interaction (Fig.1) to make the learning process effective are:

1) Learner-Learner
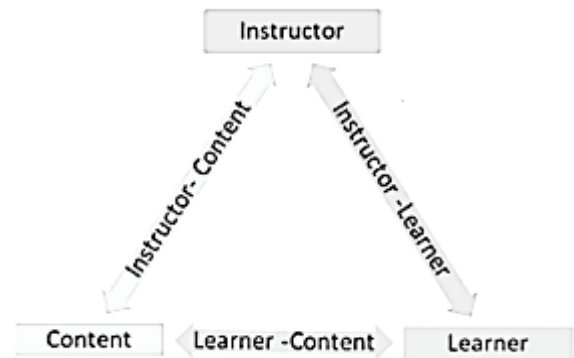
2) Learner-Instructor

3) Learner-Content

Fig.1: Moore's Framework of Types of Interactions

In a real-time learning environment, learner–learner interaction is nurtured through face-to-face interaction which plays a crucial role in fostering the cognitive development of learners. In virtual learning environments, learners feel disconnected from peers and instructors. Online mode of learning reduces the chances of cognitive development of learners. Instructors need to exert additional effort to facilitate learners' engagement to feel part of a community while keeping them motivated and engaged in the course. Two essential and user-friendly interactive platforms for digital engagement are Discussion Board and Padlet.

1. Platforms of Engagement & Interaction in Online Environments

Virtual learning tools have transformed communication and social interaction between students. Mentimeter, poll anywhere, answer garden, jam board, breakout rooms, chat function, socrative, and flip grid engage the learner for that class, but interaction will not transcend the classroom.

In a large class, the learner may feel lonely and isolated which leads to decreased motivation and

enhanced attrition. Discussion forums and Padlet both contribute to enhancing connectivity among students and enriching the learning experience.

A. Discussion Board

Discussion boards have evolved as centers of virtual classes. In an era of wall-to-wall media, it is easy for students to create or have a social presence in online learning environments and a sense of community. The way learners involve and indulge in the activities and discussion motivates participation, presence, and community relationships thereby fostering an emotional connection. The outcome of this asynchronous learning ethos improves student learning and provides satisfaction towards the course. Moreover, discussion forums also serve as platforms to create a feeling of togetherness and can promote feelings of self-efficacy.

Discussion board enhances learning through deliberations and peer learning as mentioned in Fig. 2. This process of participation in peer learning helps the students hone:

- Team-building spirit M o r e   s u p p o r t i v e relationships

- Greater psychological well-being

- Social competence

- Communication skills and self-esteem

- Higher achievement and greater productivity in terms of enhanced learning outcomes.

Students' participation and engagement in discussion forums (asynchronous/ synchronous) offer more prospects for active engagement among the learners and take responsibility and ownership of learning [4]. Participation of learners in the virtual conference maximizes learning by fostering students to actively engage with the course content, interact with their peers, and negotiate the meanings of the content. Learners construct knowledge through collaborative discussion by sharing their individual experiences. In discussion boards, students can react to peers' content, address challenges, teach each other, clarify assumptions, and hone or learn a new skill.

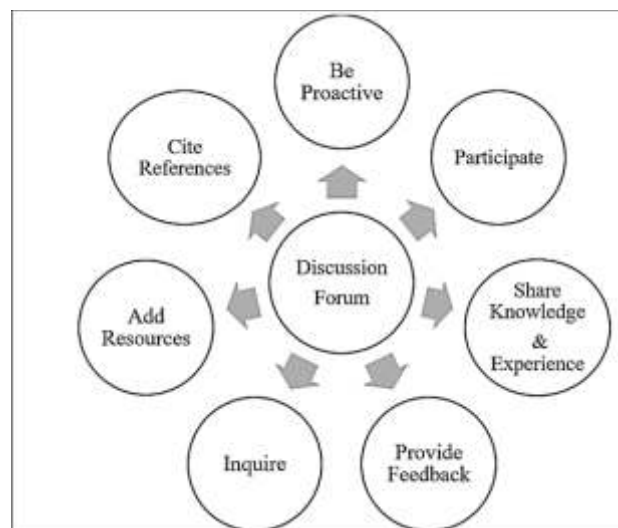Employing a discussion forum creates greater scope for learning among the students as it provides

Fig. 2: Importance of Discussion Board

individualization, critical thinking, autonomy, enhanced interaction time, time to formulate responses, flexibility, professional communication, and archiving of discussions for better implementation [5]. [6] asserts that participation is the need of the hour to facilitate interaction among content, peers, and instructors. Following these steps will guarantee healthy interaction among learners, resulting in active, relevant, and engaging discussions on the board.

DC Discussion 3

Carefully read the attached article (also posted in the module), *Collaborative learning practices: teacher and student perceived obstacles to effective student collaboration,* by Ha Le (Links to an external site.), Jeroen Janssen & (Links to an external site.) **Sept. 11**Theo Wubbels (Links to an external site.), and respond to the following prompt:

i) The above research paper talks about 4 obstructions that are commonly   faced in conducting collaborative activities.   Based on your personal experience of planning a collaborative activity (Flipped class & PSIS), share the relevance of these obstructions. Did you face any additional difficulties?

Your initial response must be posted by **Monday, April 01, (midnight).** The discussion would close on **Wednesday, April 03, (midnight).**

This is a graded discussion: 10 points possible*.*

Fig. 3: Discussion Forum Template

T Deepa

3 Apr at 16:08
Manage discussion entry

yes sir. Due to this poor communications among the group members it will affect the overall performance as well.

Gurudutt Ghadi

3Apr at 18:31
Manage discussion entry

Yes Sir, I agree with your observation about time constraints as this type of activities require more time for implementation.

A.Anjaline Jayapraba

3 Apr at 19:53
Manage discussion entry

I concur with what you've observed. Time constraints and communication clarity are additional causes of difficulties. Sometimes, due to a lack of time, we are unable to provide enough time to inspire and urge those members who don't contribute as much to engage.

Fig. 4: Responses of students in Discussion forum

The instructor initiated a discussion thread in an asynchronous class, as depicted in Fig.3, prompting students to share their opinions on the cited topic. The instructor also allotted marks for participation and students responded to the topic at their convenience. The instructor also allocated marks for participation, and students responded to the topic at their convenience and from remote locations. In this way, teachers can engage students to participate in discussions even outside the classroom and these kinds of activities will foster an environment where learners can come out of their inhibitions and participate in collaborative work.

The responses collected for the topic; Fig.4 reflect that the learners have different perspectives about the topic. This discussion forum encourages learners to know about various perspectives and stimulates them to think from a different perspective.

Discussion forum provides a venue for extending the topics beyond the classroom and students who hesitate to share their opinions in public would be motivated to participate in the forum which helps them to express and come out of inhibition.

Participative learning will assist them in exercising critical thinking skills, developing a learning community, and building a collaborative environment.

Rubrics for Discussion: A discussion rubric (Table 1) sets standards for students and motivates them to write original posts and answer the queries of other students. Simply mentioning agree or disagree to others' opinions will not foster higher-order thinking skills. It is crucial to employ identifiable features that reflect the exemplary contributions of the learners. Faculty or instructors depending on their topics, questions, and levels of thinking skills can create a rubric to assess the quality of the postings, responses, and comments of peers in the discussion.

Table 1 : Rubrics for Discussion Forum

Poor Participation (0Marks)	Average Participation (3 Marks)	Good Participation (4 Marks)	Excellent Participation (5 Marks)
Postings reflect no evidence of understanding of the concept.	Postings reflect the learner's understanding but fail to reflect in depth.	Postings add some value to the discussion.	A posting consistently adds value to the discussion and is focused.
Evidence indicates no value addition.	Evidence indicates that there is little value addition.	Evidence indicates the reading of the material, but the reflection and analysis are not on par with "excellent participation."	Evidence/proof of reading/underst anding of the concept.
No participation	Learners' comments are respectful of others and their views.	Learner's comments are respectful of others.	Learner's comments are respectful of others.

B. Padlet:

Padlet is another versatile and intuitive virtual post/bulletin board that provides a platform where teachers and students can reflect, collaborate, and share information, links, and pictures. It fosters a secure location that can be shared with the students either in class or as an extension of their learning. Padlet can be used as a discussion board by the teacher to pose a question for in-depth discussion and requires students to provide text evidence or other evidence of their claims. Students can also respond to each other's answers in the same window.

Padlet is a great resource for teachers and students owing to its interactive space, easy to use, and easily accessible from any web browser-capable device. Various Active learning strategies can be employed by the teachers like sharing a brainstorming board, live questions bank, etc. to motivate the learners to employ their imagination to grow in novel directions. Padlet also provides flexibility to integrate it with apps like LMS, Google Classroom and can be embedded on a blog or website.

Padlet can also be regarded as a digital notice board where images, links, videos, and documents can be collated on a "wall" and the tool also provides the facility to make a post public or private as mentioned in Fig. 5. This means that not only can teachers post on the wall but so can students too.

[7] claims that Padlet can be employed for collaborative group projects, as it eliminates the need to schedule time in advance for the group members to meet face-to-face. Learners can carry out their group assignments at their convenience and time; the tool also provides facility to observe all the changes made by their peers.
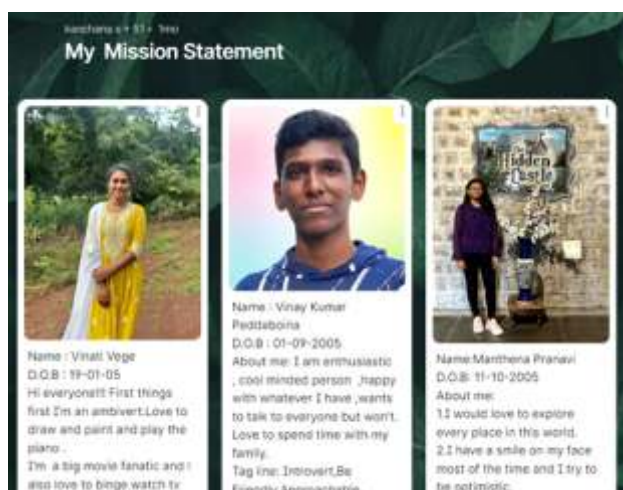
Furthermore, Padlet can be used to motivate students to ask questions in a class by breaking down barriers to participate and empowering them to step out of their comfort zones., Fig.6.
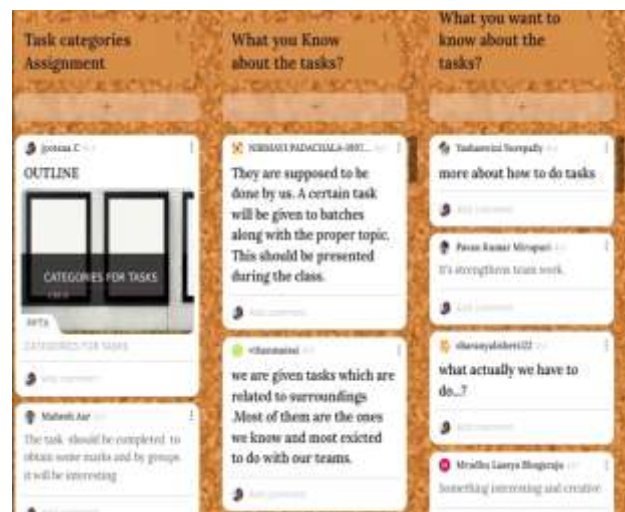

Fig. 6: Padlet for Task Categories

Above all, in an online learning environment, the gap between teachers and students (Fig.7) can be bridged by introducing oneself through an activity
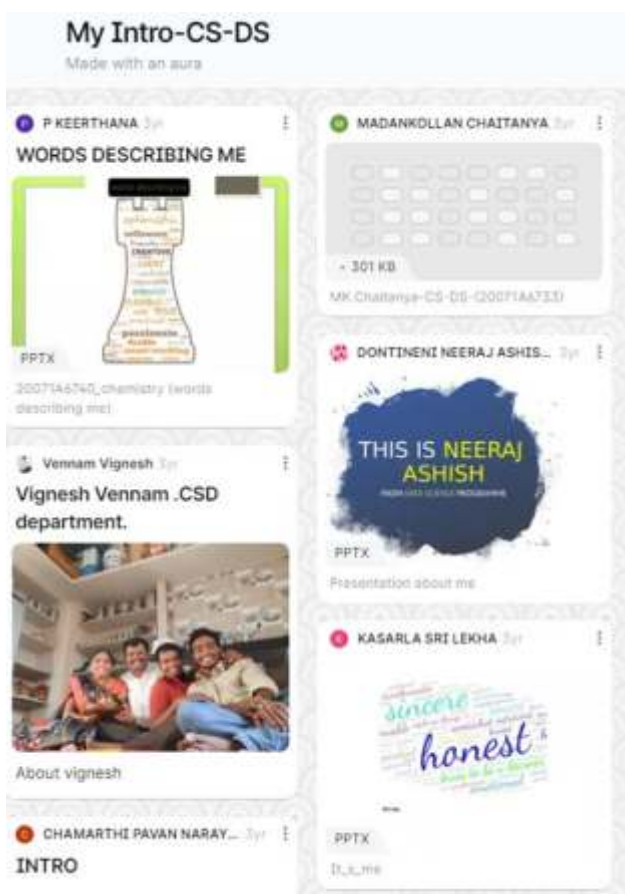

Fig.5: Padlet- My Mission Statement

2. Implementation/methodology

Padlet can be used depending on where students collaborate, brainstorm, and do a group activity. Teachers can use Padlet when they foster mediation and scaffolding. Teachers can use it at the beginning of class to introduce a new topic and test their prior knowledge about the concept. Padlet can be employed in a regular classroom as students are always glued to their mobile phones, so using the mobile phone for an activity will enable them to focus on the concept.

Fig.7: Padlet- Self Introduction of students

providing scope for informally sharing about oneself like hobbies, goals, and interests, and sharing photographs. The platform can be viewed by all classmates and allows interaction and learning about peers in remote environments.

Synergy of Padlet & the SAMR Model

Padlet's synergy with the SAMR(Substitution, Augmentation, Modification, and Redefinition) model is evident in its versatility, enabling educators to seamlessly integrate technology at different levels—from basic substitution to transformative redefinition of the learning experience. The platform's flexibility empowers educators to align technology use with instructional goals, fostering meaningful and transformative learning experiences in line with the SAMR model.

The SAMR Model was developed by Dr. Reuben Puentedura help teachers identify meaningful and useful ways to select and use technology in the classroom [8]. The use of the SAMR Model for technology integration will provide clarity in

effectively using the available technologies. Application of technology in classroom settings will enable the faculty to enhance the effectiveness of learning and foster active learning. The availability of various tools and technologies makes the process of selection and implementation of classroom technology confusing and challenging.

SAMR Model:

The SAMR model consists of four steps: Substitution, Augmentation, Modification, and Redefinition. In this model, the steps of Substitution and Augmentation are considered "Enhancement" whereas the steps of Modification and Redefinition are "Transformation" steps as mentioned in Fig.8.
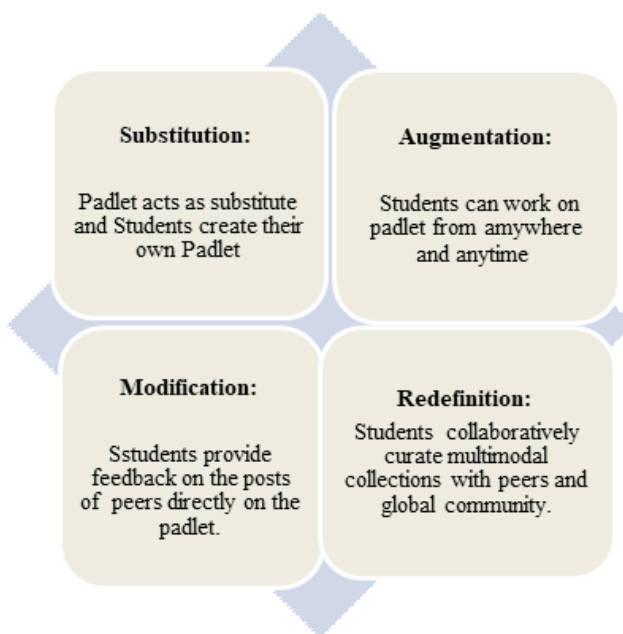

Fig 8: Padlet serves as an adept tool for integrating the SAMR model.

Substitution: In this stage, technology is used as a substitution for a more traditional teaching method. Teachers may include tools like Flipgrid, Keynote, PowerPoint, Prezi, Slides, or a similar program to present information. Even Padlet and Discussion forums act as direct tool substitutes and students create their own Padlet with text-based posts rather than lengthy notes.

Augmentation: The incorporation of various tools significantly enhances student's experience. Teacher plays a crucial role in analyzing whether technology increases or augments a student's productivity and potential in some way. Based on the analysis, teachers can adhere to or discard the technology. For example,

students can work on Padlet from anywhere and anytime to indulge in collaborative learning.

Modification: In this phase, the teacher progresses from enhancing lessons to achieving transformation. They enact substantive changes to the lesson's structure and learning objectives, resulting in a fundamentally different educational experience. The teacher must constantly answer the question of whether the incorporation of that technology is affecting the retention levels of learning and student participation. For example, students are allowed to provide feedback on their peers'/teacher's posts directly on the Padlet.

Redefinition: The last stage of SAMR model represents the results of the integration of technology in the classroom in transforming a student's experience. For example, students can collaboratively curate multimodal collections with peers and the broader global community creating a novel experience.

3. Learning Engagement In Synchronous & Asynchronous Classroom

In a synchronous classroom, the teacher can conduct group discussions and interact with students through various pedagogies like Think -Pair –Share, elicitation, etc. It is always believed that a synchronous classroom has higher engagement levels. So, teachers are forced to explore and experiment with tools to create interaction among peers and teachers. Tools like Padlet and discussion forums bridged the gap between remote and physical environments by facilitating better learning outcomes and addressing the challenges of attentiveness of the students during the class.

A survey was carried out to gauge the effectiveness of Discussion forum and Padlet in Synchronous and Asynchronous classrooms. 120 students of Undergraduate engineering courses participated in the survey. The survey reflected that the interaction with teachers, interaction with peers, retention level, engagement, and clarity of threshold concept is more in asynchronous class when compared to the synchronous class (Fig 9)

The survey results indicate that the platforms Padlet and discussion board have improved learner engagement, interaction among peers, and interaction with teachers. The percentage of clarity of the
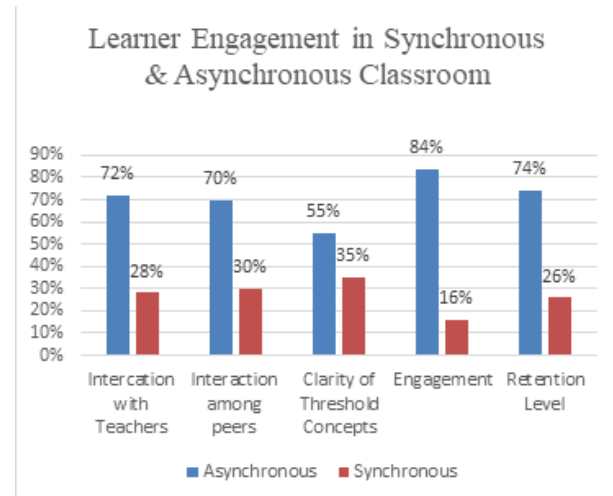
Fig 9: Survey of Learner Engagement in Synchronous & Asynchronous Classroom

threshold concept reflects that the platforms helped in providing more clarity as the learners can revisit the videos and explore the content many times. From Fig 9 it can be understood that the employment of tools has yielded better results in asynchronous class than in synchronous class. In addition, the higher engagement of the students and the higher retention level using these tools testifies that learning can happen beyond the classroom.

4. Conclusion

The quantitative survey findings show that using asynchronous tools like discussion boards and padlet has produced better results than in synchronous courses.

The majority of students reported increased levels of contact with peers (70%) and teachers (72%) indicating that the technologies offer a more favorable environment for students to actively participate in a synchronous class.

55% of students reported a better comprehension of threshold concepts in asynchronous learning settings, compared to 35% in synchronous class settings, indicating a significant increase in threshold concept clarity. These tools' versatility enables learners to delve deeper into the study and understanding of foundational ideas.

Asynchronous learning environments with Padlet and discussion forums improved retention as well as engagement rates. The bar graphs showed a 74% retention level and an 84% engagement rate, compared to 16% and 26% in synchronous classes,

respectively.

These findings derived from engineering undergraduate programs, attest their wider applicability in a variety of educational situations and their positive effects on students in a range of academic fields and educational levels. To maximize the benefits of synchronous learning and improve overall outcomes for learning, instructors and educational organizations must work towards integrating asynchronous learning tools into their teaching and learning processes.

Future research could delve deeper into specific mechanisms through which ICT tools can be imbibed to foster higher levels of engagement, interaction, and understanding. Additionally, exploring and embracing different instructional designs and pedagogical approaches in synchronous classes will address the challenges of the short attention span of the learners, These findings offer compelling evidence for the wider adoption of asynchronous methods in education, with implications for instructional practice and future research endeavors.

These novel platforms are successful in improving the digital learning experience and ensuring students see the ROI (Return on Investment). Augmenting the teaching-learning process with Padlet or discussion board and other tools breaks the stereotypes of traditional classes. The challenge of limited physical presence, time zones, disabilities, and quiet individuals who might hesitate to speak up in large groups can be addressed with the help of these tools. Augmenting these tools allows richer media integration including images, videos, and links. Learner engagement through polls, and mind maps in real-time can address the challenge of engagement of learners in a traditional class. The features of these tools like upvote, downvote, and vote, help facilitators to track the engagement and participation patterns that are missing in traditional classes.

By leveraging Padlet and discussion forums in synchronous and asynchronous classes, instructors can create dynamic, interactive learning environments that cater to diverse learning preferences and promote deeper engagement with course materials addressing higher-order thinking skills. Thereby, these tools facilitate collaboration, critical thinking, and knowledge construction, ultimately enhancing the overall learning experience for students.

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