

Using Asynchronous Discussion Forums to Enhance Engagement of Students in Online Teaching

Guanying Chu^{1*}, Yu Wang², Qinglei Bu¹, Bing Han¹, Fei Xue¹, Enggee Lim¹

¹Department of Electrical Engineering, Xi'an Jiaotong-Liverpool University, Suzhou, China

²Educational Development Unit, Xi'an Jiaotong-Liverpool University, Suzhou, China

*Correspondence: guanying.chu02@xjtlu.edu.cn

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ABSTRACT: The shift towards HyFlex learning in the post-pandemic era has introduced new challenges for higher education, particularly in maintaining student engagement and motivation in online learning environments. This paper examines the potential of anonymous asynchronous online discussion forums (AODFs) to enhance participation and engagement in large online classes. We propose a new model of forum management that integrates question-answering and peer-to-peer interaction, allowing students to post questions anonymously while responses remain non-anonymous. The study investigates the evolving roles of teachers and students in promoting and participating in forum activities, adopting a “students as partners” perspective. Data from the implemented AODF indicate increased student participation and motivation, with a substantial portion of non-academic questions addressed through peer discussion. Challenges such as lurking behavior and the limitations of relying solely on technology are also highlighted. The study underscores the critical role of instructors in evaluating and adapting emerging technologies to meet student needs and foster a sense of community in online learning environments.

KEYWORDS: HyFlex learning; online forums; anonymous; students as partner

1. Introduction

HyFlex learning, which combines real-time online teaching with traditional face-to-face instruction, presents unique challenges distinct from conventional classroom settings. While leveraging advanced technology, this approach can inadvertently create a more impersonal learning environment. According to [1], HyFlex is a course design model that offers flexibility, enabling students to attend sessions in the classroom, participate online, or engage in both modes. However, the limitations of online platforms make it difficult for instructors to accurately gauge student engagement and presence. Students may appear present online without actively participating, while camera-mediated interactions limit the instructor’s ability to convey enthusiasm and energy—key factors in fostering student motivation [2]. Reduced non-verbal cues can create a disconnect between instructors and students, potentially diminishing the learning experience [3]. This lack of immediate feedback hinders instructors’ ability to adjust teaching pace and style in real time, increasing uncertainty about instructional effectiveness. Furthermore, the reduced opportunities for spontaneous interaction can decrease

student motivation and engagement. Students in HyFlex courses have reported feeling less connected to peers and instructors compared to traditional face-to-face settings [4]. Limited access to informal feedback also constrains the development of effective formative assessment strategies, which are crucial for continuous learning. Without ongoing engagement and formative feedback, students may focus primarily on summative assessments, potentially neglecting the learning process itself. Collectively, these challenges threaten the overall quality of education in HyFlex environments (Figure 1).

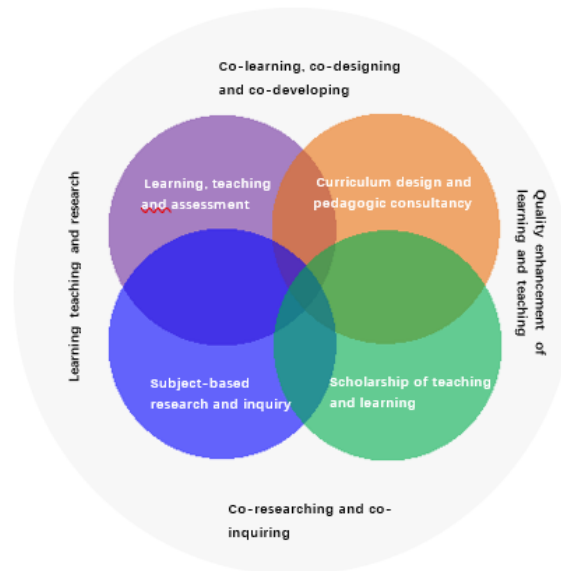


Figure 1. Ways of engaging students as partners in higher education.

To address these challenges, instructors and institutions must develop innovative strategies to enhance engagement, foster connections, and maintain effective feedback loops in both the online and face-to-face components of HyFlex courses. This may include leveraging interactive technologies, implementing frequent check-ins, and designing activities that encourage active participation across all instructional modes. By adopting such approaches, educators can mitigate potential drawbacks of HyFlex learning while harnessing its benefits to create a more inclusive and effective learning environment. One practical approach to achieving this is the Students as Partners (SaP) model within engagement pedagogies. SaP promotes collaboration between students and staff for the mutual benefit of teaching and learning. There are four primary methods in the SaP model [5], illustrated in Fig. 1. SaP can be conceptualized as both a process and a framework that fosters partnership learning, helping to build a cohesive learning community [6]. As noted in [7], the most effective higher education environments are those in which students actively participate as members of a learning community. However, building such communities is not instantaneous; they emerge over time through collective participation.

To facilitate this, the present study develops an Asynchronous Online Discussion Forum (AODF), offering students a constructive and flexible platform for professional learning and support, empowering them as co-producers of knowledge. AODFs are widely used in e-learning systems, leveraging asynchronous communication to allow students adequate time to reflect and formulate responses, while instructors can monitor learning activities effectively [8]. Well-designed AODFs promote reflective learning, knowledge sharing, and idea exchange, serving as a valuable tool for fostering student connections. The use of anonymous AODFs

further enhances this learning environment. Anonymity provides students with a safe space to express ideas and opinions, reducing the stress and hesitation often associated with face-to-face participation [5]. Such anonymity has been shown to significantly boost student motivation and willingness to engage [9].

In addition to anonymity, AODFs support peer-to-peer interaction, which is especially important in large classes, such as those exceeding 600 students. While responding to every post can be burdensome for instructors [10], encouraging peer-to-peer discussion can reduce instructor workload and strengthen student learning communities [11]. Although a forum module is embedded within our university's e-learning system (Learning Mall), usage has been low among both students and instructors. This is counterintuitive, as AODFs offer flexible learning opportunities, equal access to discussions, and the ability to subscribe and respond to posts. Therefore, this study focuses on leveraging asynchronous discussion forums to enhance student engagement in online teaching, addressing both motivational and practical challenges in large, hybrid learning environments.

2. Methodology

2.1. Reflection.

Understanding why students hesitate to utilize the forum is essential before implementing changes. Observations and literature analysis indicate two main reasons. First, instructors often ignored the AODF in the Learning Management Online (LMO) system. Questions posted by students were left unanswered, signaling that the forum was not a valid channel for discussion or sharing experiences. Instructor engagement is therefore critical to successful AODF implementation. Second, most forums are real-name rather than anonymous. Posts display student identities, which can discourage participation. Students may fear that questions appear “low-level” or worry about peer judgment, as well as potential criticism from instructors [5]. When these expectations are not met, student satisfaction declines, leading to disengagement. Students may then rely solely on face-to-face interactions or email to communicate with instructors, resulting in an “atomized” learning pattern (Figure 2).

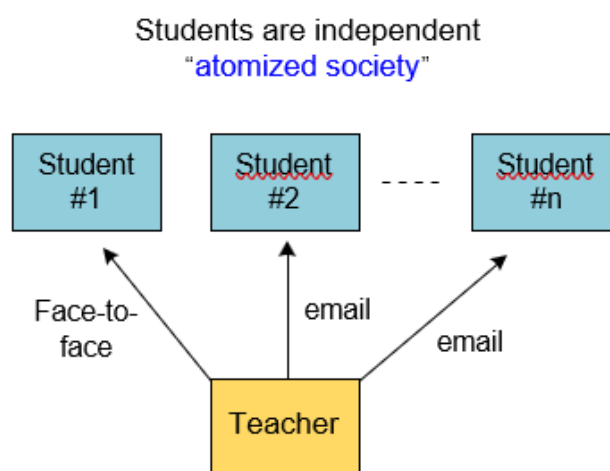


Figure 2. The teaching pattern of the course before.

This atomized pattern is influenced by several factors:

- Inertia: Students view instructors as the primary source of knowledge, limiting peer-to-peer interaction.

- Introversion: Pandemic-related changes have intensified introversion, reducing spontaneous study group formation.
- Role identity: Students internalize the passive recipient role, perceiving dual engagement (with peers and instructors) as burdensome.

2.2. Action.

To address these issues, a learning community was formed through an anonymous online discussion forum (AODF), illustrated in Figure 3. This forum enables students to share ideas and communicate freely, fostering engagement and peer collaboration.

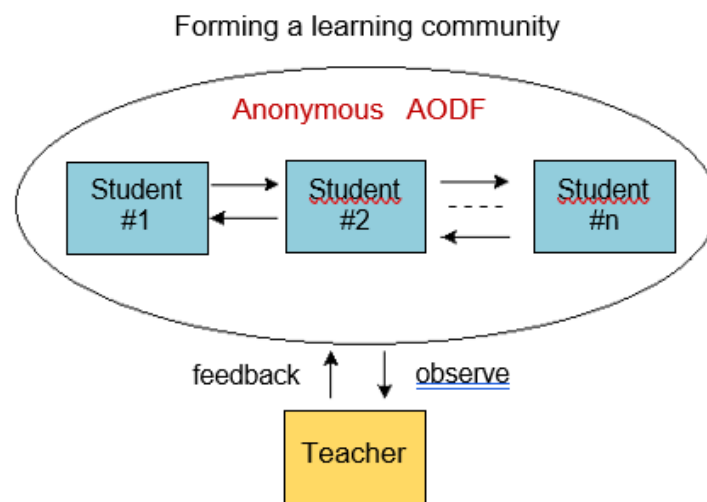


Figure 3. The teaching pattern in this research work.

A new forum management model was developed to provide timely formative feedback by tightly integrating in-class and after-class activities (Figure 4). The AODF employs a hybrid anonymity approach: students posting questions remain anonymous, while those responding are identified by name. Allowing anonymous posting reduces social anxiety and encourages participation, especially for hesitant students. Conversely, the real-name response system promotes accountability, supports community building, and allows instructors to monitor engagement and understanding [12–14]. The combination of anonymous questions and identified responses balances openness with structured interaction, supporting collaborative learning. The instructor’s role includes collecting questions, providing answers, and transforming frequently asked questions into lecture-based multiple-choice exercises.

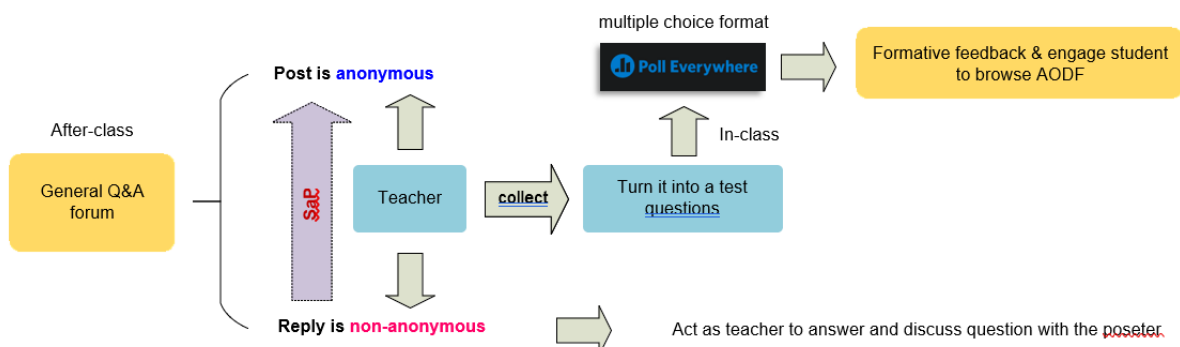


Figure 4. The whole architecture and technical route of the proposed anonymous AODF,

2.3. Challenge and solution.

Implementing an anonymous online discussion forum (AODF) presents several challenges, as the success of such programs largely depends on the skills and engagement of the instructor [15]. Relying solely on the merits of the forum is insufficient to attract student participation, particularly because learning patterns are often inertial and slow to change. In many cases, previous attempts failed because instructors did not actively promote or manage the forum. To address this, clear rules and guidelines must be communicated to students, including how to post questions anonymously and how to engage with formative feedback. The architecture and workflow of the proposed AODF are illustrated in Fig. 4. The forum integrates both in-class and after-class activities, providing a structured environment where students can post questions anonymously, receive formative feedback, and browse peer discussions. Instructors collect forum posts, transform frequently asked questions into multiple-choice exercises for lectures, and respond to posts where necessary. Replies are non-anonymous, allowing accountability, discussion, and targeted feedback. Architecture and workflow of the proposed anonymous AODF, showing hybrid anonymity, formative feedback, and integration with in-class and after-class activities.

In the first lecture, students were introduced to the functions, purpose, and rules of the AODF. They were encouraged to use the forum instead of email for questions, emphasizing that anonymity protects privacy and promotes participation. If a question had already been posted, students were directed to the relevant post; if not, instructors provided an answer and encouraged students to add it to the forum to enrich content and create a knowledge repository. A second challenge is maintaining forum activity. Active engagement in online forums is often difficult to achieve [16,17], and many students may read posts without contributing—a phenomenon known as *lurking* [18]. While lurking might appear as inactivity, it can still indicate engagement [19]. For example, some students respond briefly to indicate their question has been resolved, while others provide additional helpful information without fully engaging in discussion. Monitoring such behaviors can be challenging, but system logs from the LMO platform provide insights into participation, such as the number of visits to each post, allowing instructors to gauge engagement even when students do not actively reply. By addressing these challenges with structured guidance, clear rules, hybrid anonymity, and monitoring tools, the AODF creates a supportive environment that encourages participation, facilitates peer learning, and enhances the effectiveness of online teaching in large classes.

3. Results Analysis

The implementation of the anonymous asynchronous online discussion forum (AODF), featuring hybrid anonymity, has shown promising results in enhancing student engagement and participation throughout the 14-week semester. This section presents a detailed analysis of forum activity, peer-to-peer interaction, and student participation trends.

3.1. Forum activity over time.

Figure 5 illustrates the weekly number of posts on the AODF from week 1 to week 14. Forum activity remained consistent throughout the semester, with two notable peaks corresponding to the midterm and final exam periods. This suggests that students find the forum particularly valuable during high-stakes assessments, supporting findings from previous research showing

increased forum activity during exams [20]. The anonymity feature of the forum created a more inclusive environment, particularly encouraging participation from shy or introverted students who might otherwise remain silent in traditional classrooms [21]. Furthermore, the asynchronous nature of the forum allowed students to contribute at times convenient to them, aligning with principles of self-paced learning and enhancing student satisfaction and learning outcomes [22].

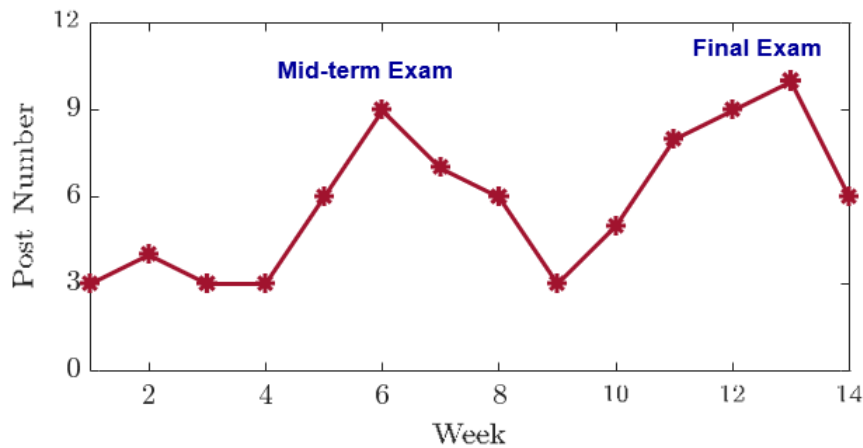


Figure 5. The activity of the forum.

3.2. Comparison with previous year.

Figure 6 compares the current implementation with forum activity from the previous academic year. Posts increased from 9 in the previous year to 82 in the current 14-week period, indicating a significant improvement in student engagement. Moreover, 63% of questions were resolved through peer discussion, demonstrating the forum's effectiveness in fostering collaborative learning. This outcome aligns with the Students as Partners (SaP) framework, emphasizing student-led learning and peer support [5]. The high level of peer-to-peer interaction suggests that students are taking an active role in their learning, which can promote deeper understanding and better learning outcomes.

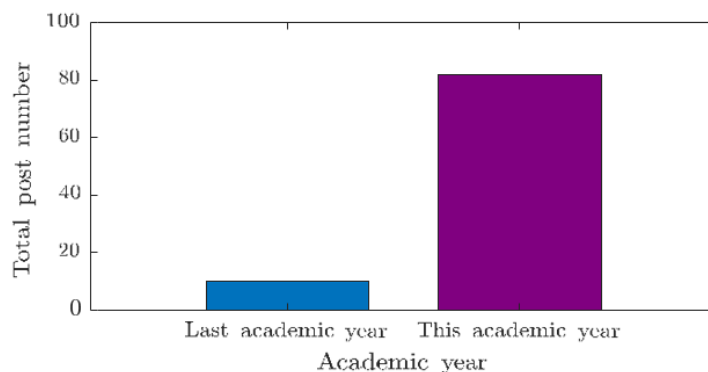


Figure 6. The activity of the forum.

3.3. Nature of questions and peer engagement.

Analysis of the forum revealed that students primarily engaged with non-academic queries, such as assignment deadlines or submission formats, while leaving academic questions to instructors. This trend may indicate a lack of confidence in addressing academic content or a

perception that expert knowledge is required, consistent with previous research on higher-order thinking in online discussions [23]. To encourage engagement with academic content, future iterations could introduce peer-review processes, scaffolding of complex questions, or incentives for high-quality responses. Instructor oversight and endorsement of student responses to academic questions could also build confidence in peer-to-peer academic support.

3.4. Student participation metrics.

In addition to posts, the study tracked student participation in forum discussions. Non-anonymous responses were counted to avoid double counting, as shown in Figure 7. A total of 164 instances of student participation were recorded over the semester, including repeated contributions. Importantly, 115 unique students participated at least once, indicating broad engagement across the student body. This level of unique participation demonstrates the forum’s ability to attract and maintain student interest over time, highlighting its effectiveness in fostering an inclusive and active online learning community.

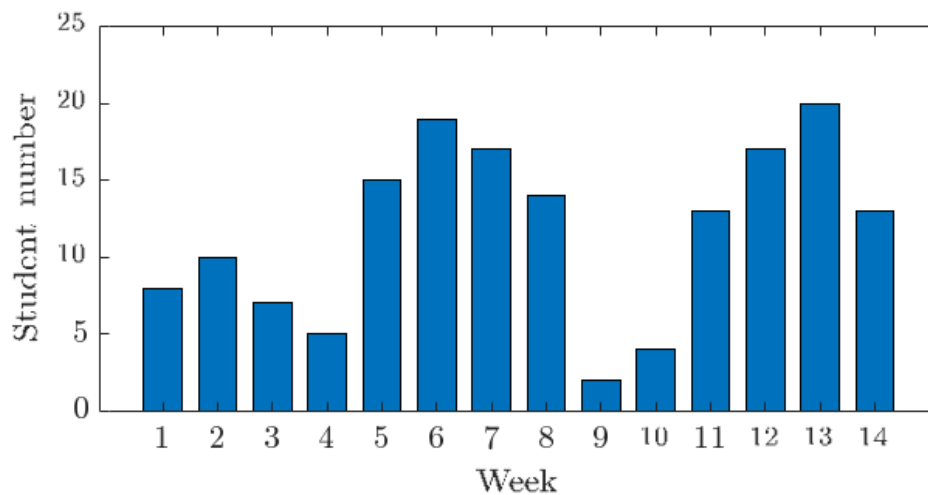


Figure 7. The activity of the forum.

4. Conclusion

The combination of the terms “*hybrid*” and “*flexible*” captures the essence of HyFlex learning, while the implementation of anonymous online discussion forums (AODFs) aligns closely with these core principles. Hybrid learning blends synchronous and asynchronous approaches, and AODFs serve as a key component in the asynchronous domain, fostering students’ motivation and engagement in discussions. The inherent flexibility of AODFs, unconstrained by time, location, or participant requirements, provides both instructors and students with ample opportunities for meaningful interaction, ultimately enhancing the quality of HyFlex learning. This study examined the effectiveness of anonymous forums in boosting student motivation and engagement. Data and observations indicate that AODFs can significantly enhance participation and foster a collaborative learning environment. The instructor’s role remains critical, encompassing forum management, monitoring, feedback provision, and promotion. Clear rules and continuous encouragement are essential to ensure smooth operation, especially considering the resistance of students’ learning patterns to rapid change. The study also highlights broader reflections on online technology in education. While digital tools like

AODFs have the potential to improve learning outcomes, they may inadvertently create distance between students and the learning process. The debate around anonymity versus real-name posting underscores the importance of protecting student privacy while promoting accountability and community. Regular communication with students and active incorporation of feedback remain effective strategies for navigating the complex dynamics of online learning environments.

Competing Interests

The authors declare that they have no competing interests.

Author Contributions

Guanying Chu, Yu Wang, Qinglei Bu, Bing Han, Fei Xue, and Enggee Lim all contributed equally to conceptualization, methodology, data analysis, manuscript drafting, and review.

Data Availability

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request. The AODF activity logs, student participation records, and aggregated forum statistics can be provided while maintaining student anonymity.

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