Reimagining learning spaces: A hybrid collaborative learning classroom

- *Mr Henry Ngoh, Academic Resource Developer, Centre for Innovation in Learning*
- *Mr Rizal Bin Siam, Head, Infrastructure & Database and Service Management, Academic Computing and Information Services*

Background

In 2020, the National Institute of Education (NIE) initiated a significant shift in its academic courses, transitioning to online/blended learning in response to the challenges posed by the Coronavirus disease 2019 (COVID-19) Circuit Breaker. To facilitate this transition, NIE's classrooms underwent enhancements to support faculty and address emerging challenges. The intersection of educational and technological advancements has ushered in rapid changes, reshaping the landscape of teaching and learning. Central to this transformation is the reimagination of learning and educational spaces, with traditional environments making way for dynamic, technology-infused settings that are poised for the future. To ensure the NIE campus remains at the forefront of these advancements, continuous updates to learning spaces are imperative. Tutorial Room 206 (TR206) serves as an initial exploration into this endeavour.

Redesigning of Learning Spaces

Placing learners at the core of NIE's educational programs and pedagogical approaches, the creation of future-ready learning spaces necessitates the adept utilisation of technology. These spaces should be designed to seamlessly integrate diverse instructional practices, accommodating a spectrum of learning needs and pedagogies.In prioritising pedagogical affordances, the Academic Computing and Information Services (ACIS) places a premium on technology solutions that encompass a resilient wireless network, an immersive digital environment, and a platform-agnostic design.

TR206 may initially appear as a conventional classroom; however, upon closer examination, it reveals itself as a collaborative learning environment designed to foster optimal learning conditions.

Creating a Conducive Environment

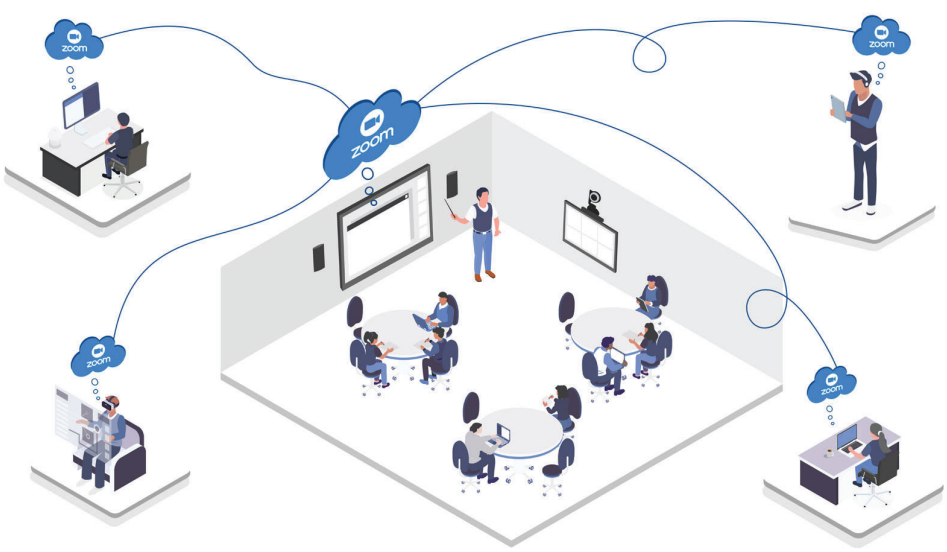
For instance, the walls are painted in a calming blue hue, a practice linked to enhancing both cognitive (Xia et al., 2016) and creative thinking.

Facilitating Collaborative Learning

The inclusion of configurable tables and chairs is deliberate and intended to facilitate collaborative, student-centered learning. This setup offers learners the flexibility to move around and engage actively in the learning process.

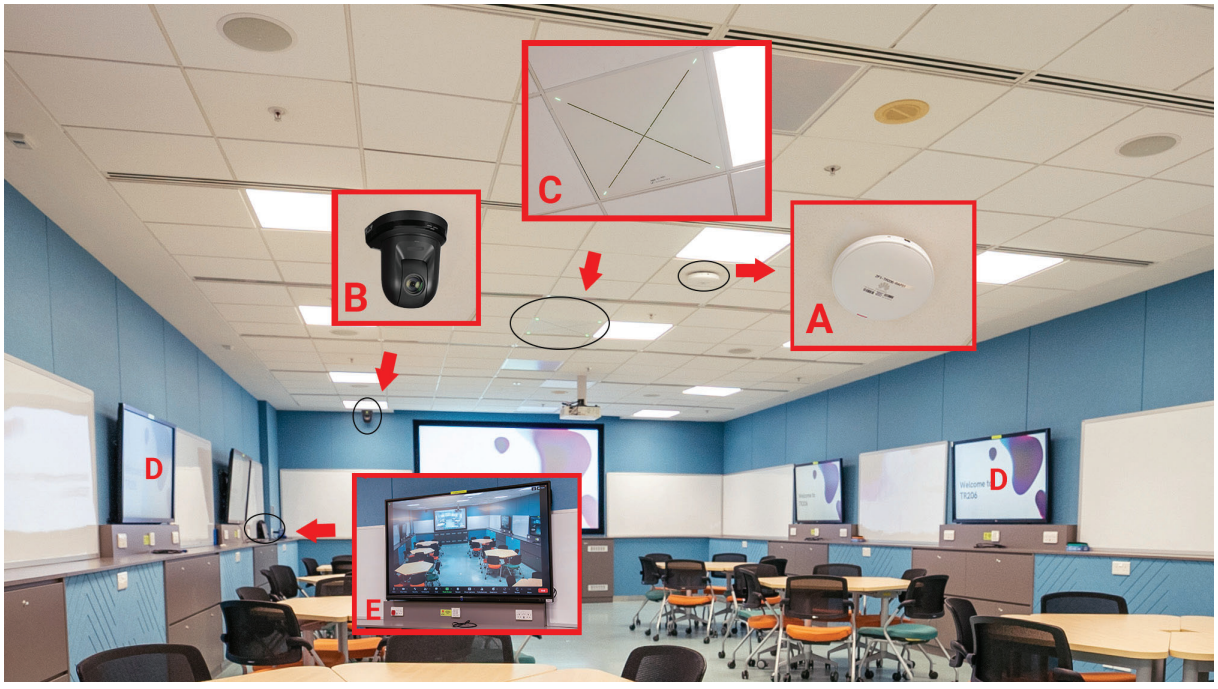
Blended Synchronous Learning

As noted earlier, the COVID-19 circuit breaker mandated the cessation of face-to-face classes, compelling faculties to adapt to the situation. In response, there was a surge in demand for blended synchronous learning (Hastie et al., 2010), emphasising the amalgamation of physical and online classroom settings through synchronous learning methods. This approach facilitates seamless connectivity for both teachers and students in the virtual realm. Broadly encompassing five essential components—the online classroom, the physical classroom, the teacher, the student, and the online student—blended synchronous learning emerged as a vital solution during this challenging period.



Hybrid Collaborative Learning Classroom TR206

TR206 underwent purposeful enhancements to transform it into a hybrid collaborative learning classroom conducive to blended synchronous learning. These improvements are manifested through the following:



A **The implementation of next-generation Wi-Fi 6** ensures smoother communication with minimal interruptions or lags. Tutors can seamlessly conduct live discussions, share multimedia content, and effectively engage with remote learners. This technological advancement opens up opportunities for students who might face physical constraints to attend classes, enabling them to participate remotely through the Internet. This inclusivity extends to international students residing and working in their respective countries.

Upon startup, the Pan-Tilt-Zoom (PTZ) camera provides an initial visual feed of the physical classroom. When activated, the PTZ tracking feature adeptly follows the tutor's movements, ensuring that interactions between the tutor and students in the classroom are visually relayed to online students. This dynamic feature fosters a heightened sense of connectedness for online students with their peers in the physical classroom. **B**

C **The wireless ceiling microphone** effectively oversees the audio dynamics within the classroom. Its high signal-to-noise ratio ensures clear and crisp audio transmission during communications, fostering an environment conducive to both class and small group discussions and encouraging active student participation.

Numerous expansive video displays strategically positioned within the classroom empower the tutor to seamlessly present slides, images, websites, videos, and other relevant materials during lessons. Some of the video displays have annotation tools for the faculty and also allow students to collaborate, as they discuss and work. **D**

E The Zoom video conferencing software, integrated into the tutor's laptop, acts as the central command center for live lessons, slide sharing, session recording for revision, and online communication through chat and audio/video features. Furthermore, readily available approved applications like Wooclap contribute to increased engagement for students both in the physical classroom and those participating online.

Moving Forward

As the demand for blended synchronous learning grows, so do the challenges and requirements for both students and tutors. For instance, tutors encounter the challenge of monitoring learner engagement, both for online learners and those in face-to-face settings as they implement various pedagogical practices. Likewise, students may experience difficulties effectively communicating with their peers in the classroom. Artificial Intelligence (AI) solutions will empower students and tutors with data and innovative features that will transform how collaborative blended synchronous learning will take place in the future classroom.

References:

Hastie, M., Hung, I.-C., Chen, N.-S., & Kinshuk. (2010). A blended synchronous learning model for educational international collaboration. *Innovations in Education and Teaching International, 47*(1), 9–24. https://doi.org/10.1080/14703290903525812

Xia, T., Song, L., Wang, T. T., Tan, L., & Mo, L. (2016). Exploring the effect of red and blue on cognitive task performances. *Frontiers in Psychology, 7*, 1-7. https://doi.org/10.3389/fpsyg.2016.00784