



We started off with a simple question – What can we do to improve learning in (university) classrooms? As university students ourselves, any roadblocks to learning impacts us personally; any improvements would not only benefit NUS but also benefit Singaporean universities and even universities worldwide.

This problem is, of course, a complex and multi-faceted problem that can never truly be solved, but this doesn't stop us from trying to tackle one or two specific aspects. So, as we were going through the flow of a typical lesson, something stood out to us – how professors or teaching assistants (thereafter collectively referred to as “teachers”) handle questions from and gauge the understanding of students in the seminar/lecture/tutorial etc.

In an offline class, the teacher might try and *guess-timate* the overall “vibe” of the class via their facial expressions; a pace too fast and the class might appear confused or “blank”, too slow and the teacher might be faced with a wall of bored faces. This was, naturally, decent enough to gauge the overall sentiment of the class, yet it is prone to missing out on the small number of stragglers who were most definitely *not* comprehending the content. Of course, decent teachers will take periodic pauses to ask “is everyone okay?” or “does anyone have any questions” instead of rambling on and on, but this has its flaws too. As any teacher will know, whenever they try to engage the students by asking a question and waiting for the answer, they are typically met with an awkward silence (assuming no class participation marks are given) that drags on until someone steels themselves to answer the question. In essence, students are generally averse to asking questions or showing that they're having trouble following, due to a combination of shyness, peer pressure (“if no one else has doubts then maybe I should just keep quiet as well and try to understand it later”), not wanting to “stand out” in the class, or even a fear of being wrong as well as appearing “stupid”.

All this changed, however, when the COVID-19 pandemic ravaged the world in 2020 (and 2021, and half of 2022). Education, in particular, was forced to move online; university professors and teaching assistants had to administer lectures and tutorials online over Zoom – a far less effective medium of teaching. Students, on the other hand, griped about “Zoom university”; it was missing much of what made university worth attending in the first place.

That said, if there was one silver lining, it was that teachers inadvertently gained a convenient tool for obtaining feedback, clarifying doubts and gauging understanding – Zoom chat and reactions. Confused about a certain topic (as a student)? Simply “raise hand” in Zoom and the teacher can clarify doubts at convenient timings; it being a virtual hand means that it is much less disruptive than in an actual class, where a hand being raised typically requires the teacher to interrupt teaching and address the concern then and there (or tell the student “I'll come back to you later”). It also goes without saying that raising a virtual hand is much easier than actually raising your hand in class, both in terms of physical and mental effort required. In the same vein, asking a question also becomes less daunting and much more frictionless when you can simply type the question into the chat box and wait for the teacher to address it when convenient, instead of having to wait until the teacher decides to take questions.



Yet, as the world gradually returns to normalcy and face-to-face classes resume, teachers and students are no longer using Zoom in class; after all, why turn on the online session if everybody's already present in-person? While this is mostly a good thing in terms of lesson quality and engagement, the benefits of the "silver lining" we've been talking about above also vanishes. Now, it's back to the archaic system of waiting for the teacher to ask "any doubts?" before having the question answered, or even for a student to avoid asking questions due to the reasons outlined prior. *Not ideal.*

Hence, our goal was to capture the frictionless-ness as well as immediacy of Zoom reactions/chat, and amalgamate these into a simple yet powerful tool that helps streamline the process of learning in class, while simultaneously boosting lesson interactivity and student engagement.

As such, we are proud to introduce "Confused", a real-time question-asking and student reaction app, to be used synchronously with an offline class. It is designed as a mobile-centric web application to not only allow convenient access (every student will surely bring their phones to class but not everyone will bring laptops) but to also allow seamless integration into existing classes. No app to download, no lengthy sign-up process required (*from students' point-of-view*), no passwords to remember – just scan the QR code (or enter session code), set a display name and you're good to go! For the teacher, it is easy-to-setup, easy-to-use, and enables easy sharing of the link – no more having to email lengthy Zoom links to the whole class.

In a nutshell, "Confused" is all about streamlining and reducing friction wherever possible. We do this by including a feature set that is fully functional yet without the bloat and frill. This enables a user experience that is simple and devoid of confusing settings/configurations. We facilitate communication and feedback between students and teachers; no more, no less. Sometimes, that is all we need.

Simple and no-frills, however, does not mean that our app is "boring" or "utilitarian". Quite the contrary, in fact. Providing a fun and enjoyable user experience was one of our key design principles right from the start, and this is readily apparent right from the instant one launches "Confused". This fun permeates throughout the UI/UX, even when in a class/session.

This pitch, however, is too short for us to properly describe its delightfulness. You can find a more detailed walkthrough of the elements ever so carefully designed to invoke fun and enjoyment in our milestones report. Alternatively, just try it for yourself! *Who says class has to be boring and stale?*