

Students' Perceptions of Classroom Interaction in Online Synchronous Learning and Face-to-Face Learning

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Abstract

Real-time interaction is a key component of learning; however, students may perceive differences between online synchronous learning and face-to-face classes. This study examines students' perceptions of interaction in online synchronous learning compared with face-to-face learning, and whether these perceptions influence their willingness to participate. Students enrolled in the Introduction to University Study module at the University of Reading Malaysia in the July 2025 cohort were invited to complete a survey comprising closed and open-ended questions ($n = 40$). Although engagement strategies were implemented to promote interaction in the online sessions, the findings indicate that students generally perceive face-to-face classes as more interactive and report a stronger preference for in-person interaction.

Keywords

Online synchronous learning, face-to-face learning, student interaction, higher education

Introduction

Interaction is essential in classroom learning (Hanum, 2017). Tsui (2001) defines classroom interaction as the exchanges that occur between teachers and learners, as well as among learners, during teaching and learning. Interaction is widely seen as important because it supports clear communication, improves the flow of instruction, strengthens learners' communication skills, and helps reduce the distance between teachers and students (Hanum, 2017). Furthermore, student engagement is developed through interaction, making it a critical component of online learning (Martin & Bolliger, 2018).

During the COVID-19 pandemic, teaching and learning shifted from physical to online modes. Many higher education institutions in Malaysia adopted online synchronous and asynchronous learning. Online synchronous learning (OSL) allows instructors and students to learn at the same time in different locations using video-conferencing platforms such as Zoom

Submission: 30 March 2026; **Acceptance:** 21 September 2026; **Available online:** October 2026



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(Amiti, 2020; Shlomo & Rosenberg-Kima, 2024). In this way, OSL is similar to face-to-face (F2F) learning, but it does not require students to be physically present in a classroom. With this advantage, OSL can bring together learners from different geographical areas while keeping key features of live teaching, potentially offering a more comfortable learning environment for students who face challenges in traditional classrooms (Amiti, 2020).

Studies comparing interaction in F2F and OSL have reported mixed results. For example, Gao and Shi (2023) found that university students in Australia reported more opportunities to interact with teachers and peers in F2F classes than in Zoom-based classes. Jin (2022) found that while students enjoyed active learning in both settings, some felt in-person group work was more interactive and enjoyable.

At the University of Reading Malaysia (UoRM), the Global Academy offers a single fully online module, “Introduction to University Study”, which is delivered each July. This short, four-week intensive course provides an academic “head start” to help students transition into university life (University of Reading Malaysia, 2025). However, limited empirical research exists regarding student perceptions of interaction in short, intensive online modules during early university transition. To address this gap, this study answers two primary research questions:

1. How do students perceive classroom interaction in OSL compared to F2F learning?
2. How do these perceptions influence their willingness to participate?

Methodology

This study utilized a mixed-methods cross-sectional survey design. It was conducted among participants from the *Introduction to University Study* module from the July 2025 cohort. Throughout the module, instructors employed established engagement strategies as recommended by Moser and Smith (2015), as cited in Amiti (2020) and Martin and Bolliger (2018), to maximize interaction within the OSL environment. This approach aimed to make the online experience as interactive as possible, replicating the high levels of engagement typically found in F2F settings.

Participants were students who were enrolled in the module for the July 2025 intake. All participants were Malaysian and had experienced both OSL and F2F learning prior to joining the course. Informed consent was obtained directly from all participants prior to data collection. In the final two weeks of the module, students were informed about the study and invited to complete a survey with closed- and open-ended questions adapted from Gao and Shi (2023).

The survey was created and distributed using Microsoft Forms. The survey link was shared during a live class, and students who were absent received it by email to ensure equal opportunity to participate. In total, 40 responses were collected from 54 students, resulting in a response rate of 74%. Participation in the survey was voluntary and anonymous. Participants were informed of the purpose of the study before completing the questionnaire. The study complied with the university's policies governing the collection and use of student data for research purposes, including procedures applicable to students below 18 years of age.

For data analysis, the quantitative closed-ended responses and qualitative open-ended responses were extracted and analyzed directly via Microsoft Forms. The closed-ended responses

were analyzed using descriptive statistics, specifically frequencies and percentages, to identify patterns and trends in students' perceptions of interactions in online and F2F learning environments. The open-ended responses were analyzed using thematic analysis, whereby participants' comments were reviewed, coded, and grouped into recurring themes. This process identified key factors influencing students' interaction preferences and experiences across the two learning contexts.

Results and Discussion

The survey results indicate a clear preference for F2F learning for interaction and feedback. Most students reported that F2F classes offer more opportunities to interact with the teacher (80%) and peers (72.5%), and that teacher feedback is received more quickly (77.5%). In the open-ended responses, students described F2F interaction as more "natural" because it offers easier access to the teacher, clearer eye contact, and the ability to ask follow-up questions immediately. In contrast, OSL was often characterized as "quiet", particularly when microphones and cameras were turned off.

Table 1. Students' perceptions of interaction, feedback and motivation in OSL vs F2F

Item no	Item	Response choice	Frequency	Percentage
1	Where I have more opportunities to interact with the teacher	F2F	32	80%
		OSL	3	7.5%
		Both	4	10%
		Not sure	1	2.5%
2	Where I have more opportunities to interact with my peers	F2F	29	72.5%
		OSL	1	2.5%
		Both	10	25%
		Not sure	0	0%
3	Where I can receive feedback from the teacher more quickly	F2F	31	77.5%
		OSL	0	0%
		Both	4	10%
		Not sure	5	12.5%
4	Where I feel more motivated to ask and answer questions	F2F	28	70%
		OSL	6	15%
		Both	6	15%
		Not sure	0	0%
5	Where I feel more motivated to interact with my peers	F2F	32	80%
		OSL	1	2.5%
		Both	7	17.5%
		Not sure	0	0%

A similar pattern was observed for motivation. Overall, students reported being more willing to participate in F2F lessons, particularly when speaking up (asking and answering questions) and engaging with peers. Although a smaller group preferred OSL for asking questions, F2F remained the dominant context for peer-related motivation. Students commonly explained that F2F feels "less awkward" and supports quicker responses and clearer non-verbal cues (e.g.:

facial expressions). Taken together, the findings suggest that the social presence of F2F settings supports confidence and energy for participation. At the same time, the comments indicate that OSL can feel less intimidating for some students (especially when asking questions) because participation can be managed with lower visibility and reduced social pressure (e.g., using the chat function or keeping the camera off).

Table 2. Students' Interaction Preferences in OSL vs F2F

Item no	Item	Response choice	Frequency	Percentage
6	I like to interact with my lecturer and peers in F2F classes.	Yes	40	100%
		No	0	0%
7	I like to interact with my lecturer and peers in online synchronous classes.	Yes	20	50%
		No	20	50%
8	I like to interact with my group members and peers in online synchronous classes.	Yes	31	77.5%
		No	9	22.5%

Discussion of Open-Ended Responses

Students' written responses to items 6, 7, and 8 show a clear pattern in how they view F2F versus online interaction, and online group work versus pair work. To evaluate these responses systematically, we conducted a basic thematic analysis, reviewing and coding the raw text to identify common patterns. Although individual experiences varied, several recurring points were raised, including communication clarity, emotional comfort, social dynamics, and technological constraints.

Across all three questions, students emphasized the need for clear and immediate communication, especially in F2F settings. They noted that physical classrooms allow them to receive direct feedback from teachers, which supports understanding and allows quick clarification of doubts. This contrasts with online sessions, where delays in unmuting, hesitation to use the microphone, and reliance on typed responses can interrupt the flow of conversation. For many students, real-time exchange increased confidence and willingness to participate.

A second recurring point was the value of non-verbal cues. Students explained that eye contact, facial expressions, and body language help them interpret teachers' and peers' reactions. These cues provide reassurance, show engagement, and support a sense of connection. Students reported uncertainty and discomfort, and lower motivation to participate, when cameras were turned off during OSL. These findings align with Gao and Shi (2023), who also found that students perceive greater opportunities for organic, multi-sensory interaction in traditional F2F classrooms compared to Zoom-based environments.

Another common view concerned emotional comfort and social ease. Many students described F2F interaction as "natural", "less awkward", and "more lively", while online participation was often described as silent, pressured, or intimidating. Some students were reluctant to unmute because they worried about being unheard, ignored, or judged, while others

felt uncomfortable speaking into what seemed like a “silent room”. In contrast, physical classrooms appeared to reduce hesitation and create a more supportive space for interaction.

Students also highlighted relationship-building and social bonding. F2F settings were seen as more supportive of forming friendships, collaborating with peers, and building rapport with teachers. The spontaneity and informality of in-person communication were viewed as important for developing a sense of community. By contrast, participants often described online environments as less personal and more fragmented. This observation is consistent with literature emphasizing that social presence and community-building require more deliberate engagement strategies in OSL than in F2F settings (Martin & Bolliger, 2018).

For group interaction in OSL, students reported different preferences linked to social and emotional factors. Those who preferred group or pair work noted that these interactions generate more ideas and reduce pressure on individuals. Students who preferred pair work emphasized lower anxiety and easier communication. Some also said pair work in OSL helps students who felt intimidated in larger groups.

Finally, technological constraints were consistently mentioned as a barrier to effective online interaction. Students reported unstable internet connections, audio problems, lagging video, and difficulty confirming whether others could hear them. These issues not only disrupted communication but also increased awkwardness and reduced engagement. Prior studies have often cited such technological barriers as a primary deterrent to effective communication in synchronous online learning (Amiti, 2020).

Overall, the responses suggest that students value interaction that is immediate, socially rich, emotionally supportive, and supported by reliable technology. While OSL offers convenience and may reduce pressure for some learners, F2F remains the preferred setting for meaningful communication, relationship-building, and active participation.

Conclusion

This study explored students’ perceptions of interaction in online synchronous learning (OSL) compared with face-to-face (F2F) learning in the *Introduction to University Study* module at the University of Reading Malaysia. Consistent with Gao and Shi (2023), the findings indicate a clear preference for F2F classes, which students perceive as providing more immediate, natural, and motivating interaction with lecturers and peers.

Students associated F2F learning with quicker feedback, clearer communication, and a richer social presence through non-verbal cues (e.g., eye contact and facial expressions), which increased their confidence to ask questions and participate. In contrast, OSL was often perceived as quieter and less socially connected, particularly when cameras and microphones were turned off or when technical issues disrupted communication.

Although engagement strategies were implemented to enhance interaction (Moser & Smith, 2015, cited in Amiti, 2020; Martin & Bolliger, 2018), students still perceived in-person

classes as more effective for communication and relationship-building. Nevertheless, the results also suggest that OSL may support participation for some students by reducing visibility and social pressure through features such as text chat and smaller interaction formats (e.g., pair work). For educators, these findings present a practical implication: online modules must be intentionally designed with structured pair work and deliberate community-building activities to mitigate the anxiety and isolation students experience in digital spaces. However, these results should be interpreted cautiously, as the study is limited by its single-module setting, small sample size, and reliance on self-reported perceptions rather than observed behavioral data.

Overall, the study highlights that while live online lessons can replicate aspects of real-time teaching, students' willingness to participate is strongly influenced by social presence and ease of interaction, which are more consistently supported in F2F environments.

Acknowledgements

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors

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