

Technology-mediated classroom management among novice and experienced EFL teachers: Beliefs and practices in online learning

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The growth of technology-mediated online learning has created new challenges for classroom management, particularly in English as a Foreign Language contexts, where interaction and participation are central to learning. Concerns have emerged that traditional strategies, such as maintaining eye contact and using physical proximity, are rendered ineffective. Adopting a sequential mixed methods design, this study examined whether novice and experienced teachers' classroom management beliefs differ and how these beliefs are enacted through technology-mediated practices. Survey findings from 135 Vietnamese English as a Foreign Language lecturers revealed no statistically significant differences in beliefs. However, interviews with 10 participants revealed notable differences in practice. Novice teachers reported broader use of technological affordances to support pre-class preparation, participation monitoring, instructional activities and behavioural management. Experienced teachers adopted technology more selectively and emphasised facilitative instructional approaches through teacher presence and learner autonomy. While technological affordances were closely associated with instructional and behavioural management, relational management relied primarily on interpersonal communication. The findings suggest that teachers' technology use reflects underlying pedagogical orientations and that the role of technology differs across classroom management dimensions.

Implications for practice or policy:

- Training programmes for technology-mediated classroom management should consider how pedagogical approaches and teaching experience may influence teachers' use of technological affordances.
- When selecting digital tools, teachers should prioritise how the technology supports instructional and behavioural management rather than the features of the tool itself.
- Teachers should recognise that effective technology use does not replace the need to practise relational management, which is built through trust, care and interpersonal interaction with students.

Keywords: classroom management, English as a Foreign Language (EFL), online learning, technology-mediated learning, instructional management, behaviour management, relational management

Introduction

Classroom management (CM) is an integral constituent of classroom environments, influencing teachers' well-being and the quality of teaching and learning (Egeberg et al., 2016). Contemporary perspectives extend CM beyond the management of disruptions to encompass teachers' sensitivity to students' academic needs and social emotional development (Cunningham et al., 2023). As teaching now extends beyond physical environments to digital platforms, CM requires attention because traditional cues such as eye contact and direct observation are reduced or unavailable. In virtual settings, teachers face various

CM-related challenges. Many have described feeling as though they were talking to the void when students kept cameras off, creating uncertainty about attention and participation (Toth et al., 2024). This uncertainty undermines teacher-student interactions, diminishes student engagement and contributes to educator demotivation (Hojeij et al., 2023; Toth et al., 2024). Similar challenges have been reported in Vietnam, where teachers struggled to monitor students' off-screen behaviours during online sessions (Nguyen & Kember, 2024).

Long recognised as a complex teaching aspect, CM now requires renewed attention as online and hybrid instruction continues to grow. This transition towards technology-mediated classrooms has reshaped CM practices, as reduced social and cognitive interactions (Göçer & Karabatak, 2026) have posed challenges to regulating student behaviour, managing disruptions and sustaining engagement (Alshammari & Alrehaili, 2025; Meinokat & Wagner, 2022). Yet, it has also facilitated the emergence of online learning environments characterised by increased flexibility, opportunities for self-paced learning and enhanced engagement, when students' psychological needs are adequately addressed (Alshammari & Alrehaili, 2025; He et al., 2025). In Vietnam, enrolment in online learning has nearly tripled over the past 5 years, accompanied by national initiatives promoting digital learning infrastructure and teachers' digital competencies (Government of Vietnam, 2025; Ministry of Education and Training, 2025). These developments reflect the growing need to understand how teachers manage and engage students in increasingly technology-mediated classrooms.

Studies have consistently pointed to distinctions between novice and experienced teachers in their pedagogical and technological knowledge. Regarding pedagogical knowledge in handling classroom situations, novices tend to rely on pre-service training and prior learning experiences, while experienced teachers draw on accumulated practice, reflective reasoning, and adaptive expertise to make real-time classroom decisions (Hogan et al., 2003; Wolff et al., 2021). In technology integration, novices often develop digital conceptions and skills more rapidly, whereas experienced teachers' beliefs remain more stable and grounded in pedagogical expertise (Englund et al., 2017; Nazari et al., 2019). These contrasts raise the question of whether similar developmental differences appear in CM beliefs and practices in technology-enhanced teaching contexts. These issues become more pronounced in English as a Foreign Language (EFL) contexts, where language learning depends significantly on sustained interaction and participation. Therefore, this study examined differences in novice and experienced EFL teachers' CM beliefs and practices in technology-mediated learning environments in Vietnam.

Literature review

Conceptual foundations of CM

Early conceptualisations of CM emphasised discipline and behavioural control through rules and punishment (Landrum & Kauffman, 2006). Later perspectives broadened CM to include the planning and organisation of learning processes and classroom environments, redefining teachers' role from rule enforcers to facilitators (Walter, 1986). More recently, CM has been reconceptualised as a social process in which teachers and students co-construct classroom norms through interaction (Daniels, 2002; Ngo et al., 2022). Early CM frameworks focused on teachers' orientations towards discipline and control, classifying approaches along a continuum ranging from highly controlling to minimally controlling practices (Glickman & Wolfgang, 1979; Johnson et al., 1994). From this groundwork, Martin and Sass (2010) proposed a framework distinguishing between instructional management (IM) and behaviour management (BM) (Figure 1). They developed an instrument to measure teachers' perceptions of their approaches to IM and BM that capture the organisation of instruction, classroom routines and the balance between teacher-directed and student-centred activities, and strategies to prevent and respond to misbehaviours.

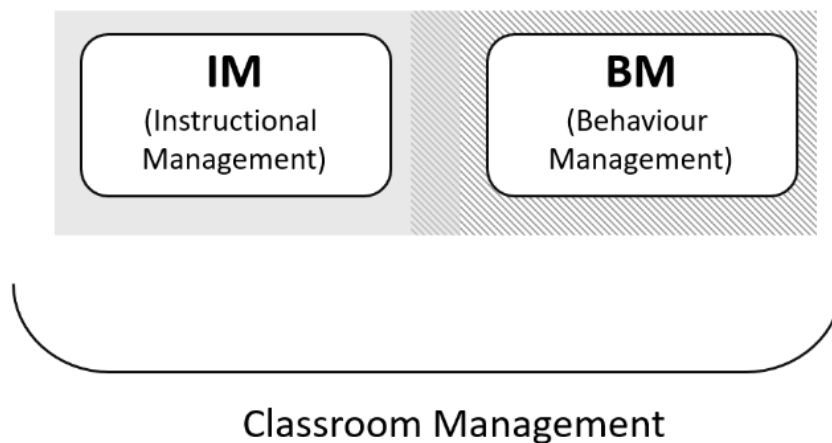


Figure 1. CM conceptual framework

CM in online settings and at tertiary level

Online learning refers to a mode of teaching and learning in which students are geographically separated from teachers and peers. While traditional instruction continues to play a central role, online learning has remained popular, with hybrid teaching widely adopted and potentially reshaping the educational landscape (X. Wang et al., 2024). Asynchronous and synchronous learning modes, facilitated by online platforms and learning management systems (LMSs), has redefined classroom interactions. For example, teacher-student interactions are primarily maintained via social media sites, while student-student interactions are fostered via online discussion forums (Le et al., 2022). Teachers' monitoring strategies have also shifted from walking around the classroom, observing students' conducts and initiating one-on-one discussions to assessing students' content understanding, well-being and motivation through polling systems, non-verbal cues, interactive multimedia content and real-time virtual check-ins (Tekir, 2025; van Leeuwen, 2023). These changes suggest that key CM functions, such as monitoring participation, facilitating interaction and sustaining engagement, are increasingly mediated through technological affordances rather than physical presence. This transition creates both opportunities and challenges, as online environments can support flexibility and self-paced learning while limiting physical interaction, hampering rule enforcement, delaying feedback and introducing technical barriers such as unstable Internet connections (Adsız & Dinçer, 2025; Larmer et al., 2016; Rufai et al., 2015; Salarvand et al., 2023).

In higher education, teacher-student interaction is typically characterised by limited direct oversight, necessitating students to take greater responsibility for regulating their learning (Kleimola et al., 2025). Online learning further intensifies demands for independence and motivation because of reduced interaction and individualised support (Karagul et al., 2021; Potts, 2019). Physical distance in virtual classrooms also contributes to reduced academic motivation and increased disengagement (Tekir, 2025). Although a growing body of research has examined student engagement, motivation and self-regulated learning in online higher education, considerably less attention has been paid to how lecturers manage technology-mediated online classrooms.

CM in online EFL contexts

Given that online learners are vulnerable to disengagement due to insufficient interaction with instructors, peers, learning content and technological constraints (Wang & Huang, 2024), EFL teaching presents additional concerns since it is widely recognised in the literature as relying significantly on sustained engagement and diversified instructional strategies. Teachers have frequently reported difficulties maintaining active participation in online classrooms, where reduced physical proximity limits the observation of learners' emotional and behavioural cues. Recent reviews in EFL have indicated that interactive elements such as feedback, rewards and quizzes contribute significantly to learner motivation, attitudes and participation (Zhang & Hasim, 2023; Zolfaghari et al., 2025). Poorly designed interactive

elements and limitations of online learning can undermine engagement (Zhang & Hasim, 2023; Zolfaghari et al., 2025), suggesting that online CM in EFL needs to extend beyond behavioural control to encompass instructional and emotional support.

In Vietnam, Pham and Vo (2021) proposed complementary models for effective online teaching that integrates asynchronous learning through LMSs and synchronous online meetings. Their models conceptualised online instruction as a sequence of pre-class, in-class and post-class activities, which indicates the major role of digital platforms in supporting preparation, teaching delivery, interaction and follow-up activities. Similar principles have been observed across online and hybrid learning contexts. Studies have reported the importance of pre-class preparation, structured learning activities during live instruction and follow-up support through digital platforms for effective learning environments (Hariharan & Merkel, 2021; Nguyen et al., 2022).

Proposed conceptual framework

Building on Martin and Sass's (2010) distinction between IM and BM, and drawing on Pham and Vo's (2021) conceptualisation of online instruction, this study adopted a three-construct framework for examining CM in technology-mediated environments (Figure 2): IM-pre (IM before class): preparation activities and instructional organisation prior to online lessons; IM-while (IM during online class): structuring and facilitation of learning activities during synchronous instruction; and BM-while (BM during online class): strategies used to monitor, regulate and respond to students' behaviours in real-time learning.

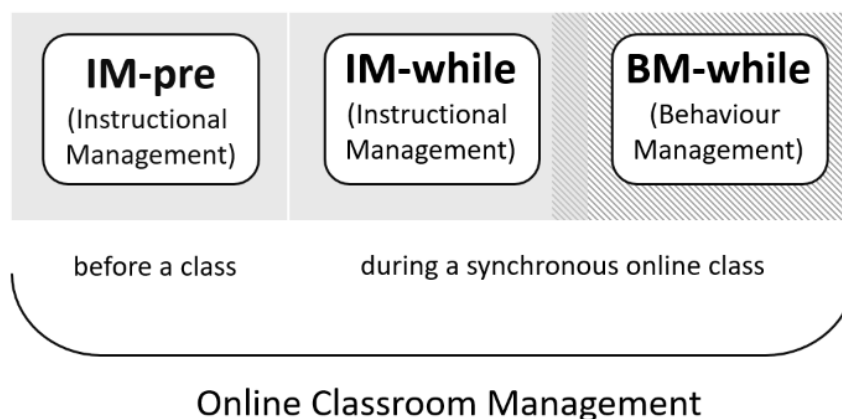


Figure 2. The proposed CM framework

The framework focuses on only the pre-class and during-class stages. This decision is consistent with the conceptualisation of technology-mediated CM as instructional and regulatory practices are enacted before instruction and during live learning interactions (Moorhouse et al., 2023; Tekir, 2025). Although Pham and Vo's (2021) models also incorporate post-class activities, these activities primarily concern teachers' reflection and instructional evaluation rather than the real-time management of classroom processes.

Empirical studies

Recent research has documented how teachers utilise chat functions, multimodal resources and platform-mediated interactional strategies to facilitate participation and engagement in online language classrooms (Dao et al., 2026; Ekin & Badem, 2026; Tontuş & Gönen 2026). These studies have suggested that online CM increasingly involves managing technology-mediated interactions. However, little is known about whether teachers at different developmental stages approach these practices differently in online EFL environments. Studies have reported differences between novice and experienced teachers in professional competence, instructional practices and classroom decision-making (Huang & Li, 2012;

Lucksnat et al., 2024; Sun & Zhang, 2022). Within CM research, experienced teachers generally demonstrate stronger preventive management practices, whereas novices tend to rely more on reactive responses to classroom issues (Karasova & Nehyba, 2025; Martin & Baldwin, 1994). Taken together, these findings suggest that differences documented in conventional teaching contexts may also extend to the technology-mediated management of online classrooms.

Research gaps and research questions

Earlier investigations largely emphasised behavioural control, with studies focusing on novice and experienced teachers' orientation towards discipline and responses to disruptive behaviours. More recent work has broadened CM to include IM as an integral construct (Martin & Sass, 2010). At the same time, digital transformation has prompted a re-examination of CM in non-traditional classrooms (Meinokat & Wagner, 2024), where interaction, monitoring and participation are increasingly facilitated through digital platforms and online tools. Although emerging research has documented technology-mediated practices facilitating interaction and engagement in online learning environments, little is known about how teachers at different developmental stages conceptualise and enact CM. In particular, empirical evidence regarding differences between novice and experienced teachers' CM beliefs and practices using technological tools in online EFL environments remains scarce.

To address this, the study examined the following questions:

- How do novice and experienced EFL teachers differ in their CM beliefs in technology-mediated learning environments?
- How do novice and experienced EFL teachers implement CM beliefs through technology-mediated practices in online classrooms?

Methodology

Research design

This study employed a sequential mixed methods design with data collected in two phases. In the quantitative phase, a new CM beliefs scale was developed by adapting the two-construct framework proposed by Martin and Sass (2010) and integrating principles for online teaching from Pham and Vo (2021). The instrument underwent validity and reliability analyses and was revised accordingly. The validated instrument was then administered in a 5-point Likert-scale survey to 135 university EFL lecturers in Ho Chi Minh City. In the qualitative phase, 10 survey volunteers participated in semi-structured interviews, which served as the main source of in-depth data to explore CM practices in technology-mediated online classes, enabling a deeper comparison between novice and experienced teachers.

Participation in both phases was voluntary. Participants were informed of the study purpose, assured of response confidentiality and informed that the data would be used solely for research purposes. Interview participants also provided consent for participation and recording.

Data collection and processing

Pilot test

A 10-item scale was developed based on three constructs: IM-pre, IM-while and BM-while. Face validity was first assessed by three university EFL teachers, who evaluated the items for clarity, relevance and instructional adequacy (Lim, 2024). Wording adjustments were made based on their feedback. Construct validity was then examined using exploratory factor analysis (EFA) with responses from 124 EFL lecturers who rated the items on a 5-point Likert scale (1 = completely disagree, 5 = completely agree). The sample exceeded the recommended threshold of 50–100 (Kline, 1994). The EFA revealed a clear factor structure, with one item reassigned to a different construct. Internal consistency was assessed using Cronbach's alpha. The revised scale demonstrated satisfactory reliability and was used in the quantitative phase.

Quantitative phase

Research has indicated that teaching competence develops substantially during the initial years of teaching, with a 5-year threshold commonly used to distinguish experience levels (Freeman, 2001). Similar distinctions exist in Vietnam, where teachers with 5 years or less of teaching experience are usually considered novices, as they are developing their professional competence and typically require continuous assistance (Ngo et al., 2022). Accordingly, teachers with more than 5 years of post-graduation teaching experience were classified as experienced, and those within their first 5 years as novices. A separate sample of 135 university EFL lecturers consisting of 75 novices and 60 experienced teachers participated in the main study. All participants were full-time lecturers who were either teaching online at the time of data collection or had done so within the previous 5 years.

The validated 10-item questionnaire from the pilot phase was administered over 1 month, with data collection ending on 20 October 2025. Recruitment was conducted through a Facebook-based community of over 10,000 EFL teachers and supplemented through snowball sampling via our professional networks.

Qualitative phase

The second phase involved semi-structured interviews with 10 participants who volunteered after completing the questionnaire. To facilitate comparison, five participants from each group were purposefully selected. All interviews were conducted online in English and lasted approximately 30 minutes. The participants taught EFL courses using institutionally provided LMSs alongside videoconferencing platforms. Reported class sizes ranged from 25 to 40 students, with most classes comprising 35–40 students. The courses served learners across proficiency levels from A1 to B2 (Council of Europe, 2001).

The interview protocol was adapted from Debreli et al. (2019) primarily for BM dimension and expanded to both IM and BM with four additional sub-dimensions derived from quantitative findings (see the Results section). The core questions are in Table 1.

Table 1

Interview dimensions and questions

Dimension	Sub-dimension		Questions
	Initial	Emergent	
IM-pre		Pre-class preparation	How do you prepare before every online class?
IM-while		Strategies for engagement	What digital features do you often use to manage your online class? How do you keep students engaged during online class?
		Proactive measures for disruptions	What strategies do you use to ensure effective, non-disruptive delivery during online class?
BM-while	Misbehaviour		What kinds of student misbehaviour do you often face during online class? What strategies do you use when you face misbehaviour?
	Preventive planning		How do you prepare for approaches to disruptive behaviour during online class?
		Degree of behavioural control	In what situations do you tend to be more or less strict about students' behaviour during online class?

Results

Pilot test

Validity

EFA was conducted using principal component analysis with varimax rotation to examine the instrument's factor structure. The data showed moderate suitability for factor analysis, with a Kaiser–Meyer–Olkin value of 0.683 and a significant Bartlett's test of sphericity ($p < 0.05$). Three factors with eigenvalues exceeding 1 (2.722, 1.356 and 1.176) were retained. Following rotation, the three factors accounted for 20.09%, 17.041% and 15.418% of the total variance, respectively, explaining 52.548% of the total variance overall and exceeding the commonly accepted 50% benchmark in social sciences (Williams et al., 2010). Communalities ranged from .339 to .726, indicating acceptable item representation. The resulting factor solution corresponded to the theoretically proposed dimensions of IM-pre, IM-while and BM-while. Item IM-while 5, initially intended for IM-while, loaded more strongly on IM-pre and was reassigned accordingly. The revised factor structure indicated that all retained items loaded most strongly on their corresponding factors, with primary factor loadings ranging from .527 to .816 and no substantial cross-loadings observed (Table 2). These findings supported the construct validity of the instrument. The full validated scale is presented in Table 3.

Table 2

Varimax rotated component matrix (n = 124)

Item	Component		
	1	2	3
IM-pre 1	-.239	.816	.064
IM-pre 2	.315	.622	.161
IM-while 5	.362	.641	-.061
IM-while 3	.612	.070	.193
IM-while 6	.593	-.041	.117
IM-while 9	.650	.041	.011
IM-while 10	.677	.363	.089
BM-while 4	.076	.237	.527
BM-while 7	.100	-.174	.714
BM-while 8	.128	.123	.814

Reliability

Cronbach's alpha coefficients were calculated for each construct, with values between 0.7 and 0.95 indicating high reliability and values above 0.6 considered satisfactory for newly developed instruments (Taber, 2018). All subscales demonstrated satisfactory reliability: IM-pre ($\alpha = 0.704$), IM-while ($\alpha = 0.703$) and BM-while ($\alpha = 0.690$), with a full-scale α of 0.824. Although the Cronbach's alpha for BM-while was marginally below the conventional 0.70 threshold, it was still considered acceptable.

Table 3
The validated scale

Initial item number	Post-EFA item number	Wording
IM-pre 1	IM-pre 1	Before an online class meeting, lecturers should demand that students spend time checking out the learning resources (if any) on the Learning Management System (LMS), such as pre-recorded video clips or a book chapter.
IM-pre 2	IM-pre 2	Before an online class meeting, lecturers should demand that students engage in discussion sessions (if any) on the LMS aimed at activating students' schemata and helping them gain student input.
IM-while 5	IM-pre 3	Before an online class meeting, lecturers should plan the conduct of activities for students to review their pre-class preparation or promote readiness for the upcoming content.
IM-while 3	IM-while 4	At the start of an online class meeting, lecturers should outline clear interaction and participation guidelines.
IM-while 6	IM-while 6	In an online class meeting, lecturers should encourage interaction among students by employing tools such as breakout rooms and interaction apps.
IM-while 9	IM-while 9	In an online class meeting, lecturers should provide clear instructions of problem-solving or quizzes, exercises, and homework, and they ensure that all students have a complete comprehension of the instructions.
IM-while 10	IM-while 10	At the end of an online class meeting, lecturers should demand that students do the quizzes (if any) on the LMS aimed at helping students review the lesson's core content.
BM-while 4	BM-while 5	At the start of an online class meeting, lecturers should establish a recognition/reward system.
BM-while 7	BM-while 7	In an online class meeting, lecturers should intervene when students talk on the microphone or type in the chat box at inappropriate times.
BM-while 8	BM-while 8	In an online class meeting, lecturers should enforce classroom rules to control students' behaviour.

Quantitative data

The Shapiro–Wilk test was applied to assess the normal distribution of each item. Since all 10 items violated the normality assumption ($p < .05$), Mann–Whitney U tests were used for group comparisons. Table 4 reports the Mann–Whitney U statistics and the corresponding unadjusted two-tailed p values. Although two items yielded statistically significant unadjusted p values (IM-pre 1, $p = .010$; IM-while 9, $p = .040$), none of the items remained statistically significant after Holm–Bonferroni correction for multiple comparisons, suggesting similar reported CM beliefs among novice and experienced teachers. Regarding the means, both groups showed moderate to high agreement with items on IM and BM, indicating generally consistent views. However, an examination of the standard deviations and individual item means revealed divergences to different extents.

Table 4
Group differences in CM beliefs

Item	Mann–Whitney <i>U</i>	<i>p</i>
IM-pre 1	1,693	.010
IM-pre 2	2,499	.255
IM-pre 3	2,352	.635
IM-while 4	2,610	.089
IM-while 6	1,876	.080
IM-while 9	2,657	.040
IM-while 10	2,095	.468
BM-while 5	2,015	.281
BM-while 7	2,498	.257
BM-while 8	2,163	.687

Table 5 presents descriptive statistics for the three dimensions. Although no statistically significant differences were observed, several descriptive patterns emerged. Novice teachers reported slightly higher ratings on pre-class preparation, digital tool use for engagement and recognition or reward systems, whereas experienced teachers reported higher ratings on instructional guidance and strategies for managing disruptive behaviours. These patterns suggest potential differences in pre-class preparation, engagement strategies, approaches to preventing and responding to disruptions and degree of behavioural control. Accordingly, the interview protocol for the qualitative phase was expanded to include four dimensions: pre-class preparation, strategies for engagement, proactive measures for disruptions and degree of behavioural control.

Table 5
Results for items across the three dimensions

Dimension	Item	<i>M</i>		<i>SD</i>	
		Novice (<i>n</i> = 75)	Experienced (<i>n</i> = 60)	Novice (<i>n</i> = 75)	Experienced (<i>n</i> = 60)
IM-pre	IM-pre 1	3.840	3.383	1.053	1.059
	IM-pre 2	3.093	3.300	1.105	1.109
	IM-pre 3	3.920	3.933	0.941	1.103
IM-while	IM-while 4	3.987	4.233	0.923	0.871
	IM-while 6	4.120	3.850	1.026	1.039
	IM-while 9	4.400	4.633	0.658	0.520
	IM-while 10	4.093	3.917	0.857	1.062
BM-while	BM-while 5	3.507	3.300	1.005	1.124
	BM-while 7	3.640	3.800	1.035	1.176
	BM-while 8	3.693	3.633	1.013	0.974

Qualitative data

A dual analytical lens was adopted, in which the same data set was examined from two perspectives: how teachers enacted CM and the technological affordances employed to support these practices. To examine teachers' CM practices, the data were analysed using a hybrid thematic analysis approach (Fereday & Muir-Cochrane, 2006), whereby inductive coding was followed by deductive coding to map the derived patterns onto the proposed constructs. Both of us independently coded the data and compared their initial codes, achieving 86% inter-coder agreement. In addition to the three proposed constructs, an emergent theme of relational management (RM) was identified, resulting in four final themes (Table 6).

Table 6
Themes and sub-themes with frequencies across interviewees

Theme	Sub-theme	Frequency (N = 10)	Representative codes
IM-pre	Students' preparation before class	3	Post classwork, check if students finish, prepare in advance
IM-while	Technological readiness	10	Zoom, Google Drive, Kahoot
	Active monitoring of students' participation	6	Breakout room, go around the rooms, divide the class
	Interactive activities and effective delivery of lesson	10	Diversify teaching activities, bring in games, engaging ways to deliver lessons
BM-while	Preparation and professional conduct	4	Maintain professional appearance, good facial expression, predict misbehaviours
	Reward scheme	6	Bonus point for participation
	Rules establishment and enforcement	9	Discuss rules, give warnings, give rules
	Students' autonomy and responsibility	6	Students as adults, stay loose with rules, not overly strict
RM	Relationship establishment and care	4	Build trust and intimacy, show care

To examine the technological affordances used to implement CM practices, both of us independently conducted descriptive coding. Codes were subsequently compared, resulting in an inter-coder agreement of 92%. The identified affordances are presented in Table 7. A binary coding scheme was adopted, whereby each participant was coded once for a given affordance.

Table 7
Technology-mediated practices associated with each CM theme

Theme	Technological affordance	Novice (n = 5)	Experienced (n = 5)
IM-pre	LMS use	5	5
	Pre-class content distribution	3	0
IM-while	Breakout room collaboration	4	2
	Real-time polling	2	1
	Game-based learning	3	1
BM-while	Interactive learning	3	2
	Camera-based monitoring	3	2
	Microphone control	4	2
	Chat-based monitoring	3	1
	Participation monitoring	3	1
	Progress tracking	2	2
	Shared-task monitoring	0	2
RM		0	0

Note. Values indicate the number of participants reporting the use of each affordance.

IM: Pre-teaching stage

Only novice teachers reported requiring students to prepare lessons in advance, as some required prior engagement with learning materials while others uploaded coursework and checked students' pre-class review. These practices were absent from experienced teachers' responses. A similar pattern emerged in their use of technological affordances. Although both groups reported using LMSs, only novice teachers ($n = 3$) described employing these platforms to support pre-class IM through the distribution of learning materials and monitoring of students' preparation.

IM: While-teaching stage

Both groups viewed IM during online lessons as closely linked to maintaining students' participation and engagement. They described monitoring group work, facilitating interaction and diversifying instructional activities as key to effective lesson delivery. However, novice teachers appeared more inclined towards active monitoring of participation, often linking engagement to attendance or participation marks. Experienced teachers, in contrast, described a more facilitative approach, monitoring students' progress while allowing greater autonomy, for instance, by "slipping into rooms without students noticing" during breakout room discussions. Regarding the technology-mediated implementation, four novices reported using breakout rooms to monitor collaborative work compared with two experienced teachers. Novices also described using polling functions to check understanding and gather responses during lessons ($n = 2$ vs $n = 1$), and game-based ($n = 3$ vs $n = 1$) and interactive platforms ($n = 3$ vs $n = 2$) for sustained participation and diversified activities. Beyond these differences in prevalence, novice teachers described a greater diversity of tools within each affordance category. Although some platforms were shared across groups, novices reported a broader range of technologies, including Kahoot, Quizizz and Padlet, to support instruction and engagement.

BM: While-teaching stage

Novice teachers described a more control-oriented approach to BM. They emphasised establishing rules at the outset of a course: "You have to prepare a set of rules beforehand, rather than reminding them when something happens". Experienced teachers, in contrast, preferred a more collaborative approach by involving students in formulating classroom rules: "I also discussed and finalised the rules with my students". Both groups emphasised rule enforcement to maintain a productive learning environment. However, novice teachers focused on proactive prevention: "I preferred preventive measures. I would predict what kinds of misbehaviours I might encounter". Experienced teachers emphasised professionalism and social presence: "The teacher's appearance and voice contribute a lot to management ... good facial expressions, the right speed of voice, and the way you deliver your lesson". Both groups also valued learner autonomy. Experienced teachers treated students as self-regulated adults: "I don't believe in micromanaging. They should understand that learning seriously is for their own benefit", whereas novices softened their authority so as not to "ruin the mood for learning". These differences were also reflected in technology use. Novice teachers reported more frequent use of in-platform functions to supervise participation and regulate behaviours, including monitoring students through cameras and chat functions, controlling microphone use and tracking participation during lessons (n ranged from 3 to 4 vs from 1 to 2). This suggests a stronger reliance on technological affordances to maintain behavioural expectations and prevent disengagement. In contrast, experienced teachers appeared less dependent on these functions. Although both groups reported similar use of progress-tracking tools, experienced teachers were more likely to describe alternative approaches, including shared documents to monitor students' contributions and participation. Overall, the greater use of monitoring functions among novice teachers appeared consistent with their more control-oriented BM approach.

RM

Both groups emphasised establishing positive teacher-student relationships as important for maintaining discipline and engagement. Novice and experienced teachers described building trust and intimacy through small talks. Experienced teachers further extended their RM practices by demonstrating care and fostering students' sense of security: "To support this, I regularly share internet security tips with them". They also highlighted the use of positive tone, as well as checking and consultative questions to maintain a supportive atmosphere and facilitate interactions, for example: "Do you need more examples?" and "Shall we take a 5-minute early break?". Unlike IM and BM dimensions, RM was not associated with any distinct technological affordances in both groups. Instead, these practices of establishing trust, demonstrating care and maintaining supportive relationships were enacted through interpersonal communication.

Discussion

IM: Pre-teaching stage

Quantitative findings indicated that although no significant differences were identified, novice teachers reported slightly stronger beliefs regarding students' pre-class preparation, particularly the review of LMS learning materials before lessons. The interviews provided further insight into this pattern.

Only novice teachers reported requiring students to prepare lessons in advance and using LMSs to distribute materials and monitor preparation. Studies have shown that LMSs can support pre-class orchestration by encouraging engagement with learning materials before class while allowing instructors to track interaction data and adjust instructional plans accordingly (Goh, 2026; Y. Wang et al., 2024). The findings suggest that novices conceptualise CM as extending beyond synchronous instruction to encompass activities occurring before online meetings. Rather than serving solely as sources of learning materials, LMSs appeared to function as tools for organising, monitoring and coordinating pre-class learning activities. This alignment between novice teachers' pre-class instructional practices and LMS use may also indicate that technology provides greater visibility of students' preparation before instruction begins.

IM: While-teaching stage

While no significant differences were observed, item-level patterns suggested that novice teachers emphasised technology-supported engagement activities, whereas experienced teachers placed greater value on instructional guidance and participation guidelines. Qualitative findings revealed how these differences were enacted in practice.

IM during class revealed differences in how participation and collaborative activities were monitored. Novices' stronger emphasis on active monitoring was reflected in their use of breakout rooms, which appeared to function not only as learning spaces but also as management tools through which they could maintain a visible presence and oversee students' participation. In contrast, experienced teachers adopted a more facilitative approach by allowing greater autonomy during collaborative tasks. The findings suggest that teachers at different developmental stages may employ technological affordances in ways that reflect their underlying approaches to participation management and student autonomy. Novice teachers also reported using a broader range of technological affordances, including game-based and interactive learning platforms, suggesting a more exploratory approach to technology integration. This pattern aligns with research showing that novice teachers tend to integrate a wider range of tools to diversify instructional practices, whereas experienced teachers tend to adopt technology more selectively (Gong & Lai, 2018; Li & Huang, 2016).

BM: While-teaching stage

Descriptive patterns indicated some variation in BM beliefs despite the statistically non-significant differences. Novice teachers reported slightly stronger beliefs regarding preventive measures such as recognition and reward systems, whereas experienced teachers placed greater emphasis on behavioural intervention. The interviews revealed clearer distinctions in how BM was implemented.

The two groups differed in how they established and maintained behavioural expectations. Novices seemed to rely more on pre-determined rules, while experienced teachers were more likely to co-construct classroom expectations with students. This distinction is consistent with the CM literature, which associates novices with more teacher-directed approaches (Ngo et al., 2022) and experienced teachers with greater use of interactionalist practices that emphasise student participation in classroom governance (Çakmak, 2019). These differences were also reflected in technology use. While both groups reported using cameras, microphones, chat functions and participation-monitoring features, the distinction did not lie in whether teachers used these tools but rather in the extent to which they

depended on them to supervise participation and maintain behavioural expectations. Another distinction emerged in how BM was maintained beyond rule enforcement. Experienced teachers tended to emphasise professionalism and social presence, particularly through facial expressions, tone of voice and enthusiasm. This finding aligns with research showing that teachers' facial expressions function as an embodied form of teacher presence, allowing teachers to respond sensitively to students' cognitive and emotional needs during video conference-based instruction (Chew, 2022), while tone of voice can guide attention in digital classrooms (Zhang et al., 2024). Both groups valued learner autonomy, but they seemed to differ in their assumptions about students' self-regulation. While the experienced tended to view students as capable of managing their own learning behaviours, novices intentionally maintained moderate control to prevent classroom tension and disengagement. These findings suggest that BM in online classrooms may be enacted through different combinations of technological and interpersonal strategies. Novice teachers appeared to rely more on monitoring-related affordances and preventive measures to regulate learning behaviours. Experienced teachers, in contrast, were more inclined to emphasise teacher presence and student autonomy. Overall, unlike conventional classrooms that rely on physical presence and proximity, BM in online settings appears increasingly implemented through technological affordances and interpersonal communication mediated by digital platforms.

RM

As an emergent qualitative theme, RM reflects an interpersonal approach to CM (Wubbels et al., 2014). Both groups stressed the importance of building rapport with students. However, experienced teachers extended these practices by demonstrating greater care, which resonates with Egeberg et al. (2016), who identified caring as an important CM component. In EFL contexts, teacher emotional and pedagogical support has been shown to strengthen learners' willingness to communicate and sustain engagement (Liu et al., 2024). Unlike the IM and BM dimensions, no distinct technological affordances were associated with RM practices. Instead, relationship building, trust and care appeared to rely primarily on interpersonal communication. Research has suggested that relationship building in online classrooms is often manifested through personal connection, humour, open-ended questions, respectful communication, social framing, empathy and interactive communication (Pujasari et al., 2026; Segerby & Aspelin, 2023). The findings suggest that the relational dimension of CM remains fundamentally human-centred.

The quantitative and qualitative findings provide complementary insights. While the survey results indicated few significant differences in CM beliefs between novice and experienced teachers, the interviews revealed clearer differences in how these beliefs were translated into practice. Both groups appeared to share similar views regarding IM, BM and RM, yet differed in their strategies and technology use. This divergence suggests that teachers' developmental differences may be more evident in practices than in underlying beliefs. The findings therefore suggest the need to examine both CM beliefs and practices in technology-mediated learning environments.

Conclusion and implications

This study examined differences between novice and experienced EFL teachers' CM beliefs and practices in technology-mediated learning environments. Although no statistically significant differences were identified in CM beliefs, the qualitative findings revealed notable differences in how these beliefs were enacted through technology use. First, novice teachers appeared more likely to adopt technology-driven approaches, using a broader range of digital tools to support pre-class preparation, participation monitoring and instructional activities. Second, experienced teachers tended to adopt technology in a more selective manner that emphasises facilitative instructional approaches and learner autonomy. Third, novice and experienced teachers differed in how BM was enacted, with novices relying more heavily on technological affordances for monitoring and preventive measures, while experienced teachers were more likely to prioritise establishing social presence and fostering student autonomy. Finally, RM differed from the instructional and behavioural dimensions, as relationship building, trust and care were enacted primarily through interpersonal practices rather than specific technological affordances.

Overall, this study contributes to the literature on technology-mediated CM by showing that teachers' use of technological affordances reflects their underlying pedagogical orientations rather than mere tool choice. The findings further suggest that the role of technology differs across CM dimensions. While technological affordances are closely associated with IM and BM practices, RM depends mainly on interpersonal practices.

This study has several limitations. First, the focus on Vietnamese EFL lecturers and recruitment through a Facebook-based community may limit the generalisability of the findings and introduce self-selection bias. Second, the relatively small qualitative sample ($N = 10$) may have limited the range of perspectives captured and the robustness of group comparisons. Information regarding institutional policies and the proportion of synchronous and asynchronous instruction was also not systematically collected. Third, the 30-minute interview duration was relatively short and may have limited the depth of participants' responses. Furthermore, the cross-sectional design limited insights into how teachers' beliefs and practices may develop over time, and the use of self-reported survey data may have introduced social desirability bias. Finally, several limitations relate to the scale validation process. The EFA sample ($n = 124$) was adequate but relatively modest for scale development. The Kaiser–Meyer–Olkin value (.683), cumulative variance explained (52.548%) and one low communality (.339) indicate limitations in the factor structure. Although all retained items met the study's adopted factor-separation criterion of .20, IM-while 5 did not meet the more conservative .30 threshold recommended for minimising cross-loadings. In addition, the BM-while subscale yielded a Cronbach's alpha of .690, slightly below the conventional .70 threshold. This estimate should be interpreted given that the construct was measured using only three items. Therefore, the factor structure and reliability findings should be interpreted with caution. The instrument should be viewed as an initial measure of technology-mediated CM beliefs and may benefit from further validation in different contexts and populations.

Author contributions

Nguyen Quyen Anh Tran: Conceptualisation, Investigation, Data curation, Data analysis, Writing – original draft, Writing – review and editing; **Ngoc Nguyen Nguyen:** Conceptualisation, Methodology, Data analysis, Writing – original draft, Writing – review and editing, Project administration.

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