Student-initiated Course Group Chats in Electrical Engineering: A Qualitative Work-In-Progress Study

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Abstract

This work-in-progress (WIP) paper examines how undergraduate electrical engineering students use student-initiated mobile instant messaging (MIM) group chats (e.g., Discord, GroupMe) to support learning and course requirements. In this student-led research, semi-structured interviews with three students at the University of South Florida were analyzed using a thematic approach to identify recurring patterns in how students seek and provide help, how participation varies over time, and how platform features shape collaboration. Preliminary findings suggest that students primarily use group chats as a rapid sensemaking platform to clarify expectations, coordinate exam preparation, and verify understanding, while maintaining boundaries around academic integrity through peer norms and self-regulation. Discord-specific affordances (e.g., channels, voice, screen sharing) were described as enabling higher-bandwidth peer tutoring. We invite feedback on strengthening our analytic procedures and on developing an affordance-informed model that links platform features, participation ecology, and integrity norms in student-led informal learning spaces.

Introduction

When starting a new class, many engineering students increasingly look for a ‘class group chat’ created and maintained by students. These spaces can provide quick answers to logistical questions (e.g., deadlines) and course-related sensemaking (e.g., what to study for an exam), especially when instructor responses are delayed. This WIP study focuses on student-initiated MIM spaces as an informal, peer-driven learning infrastructure in electrical engineering courses.

I (the first author, undergraduate student) became interested in this topic when I started seeking out the group chat for each course myself, noticing that engineering courses were getting harder and harder as they involved more difficult math and more esoteric underlying concepts. As a third-year electrical engineering student, I have had first-hand experience with how these MIMs can help learning by allowing me to clarify concepts and request resources to learn more about what is discussed in class. This study explains the dynamics that enable MIMs to enhance engineering students' learning. In my observation, some of these dynamics have involved peers supporting each other with homework, giving each other advice on the course, and even reminding each other of important course dates for scheduling.

In my experiences of group chats, in the first year, I initially didn’t look for the group chat and often instead just tried to go based on what was said in lectures and resources on Canvas. However, I soon realized that if I had specific questions, it would take 24 hours or more to receive a response from the professor via email. When I started making sure to join the class group chat, I noticed that it was a lot quicker to receive help, which made my learning process much more efficient. Therefore, in this study, we examine how MIMs support learning among undergraduate electrical engineering students. We ask: (RQ1) How do students describe using student-initiated group chats to support learning and course navigation? (RQ2) What platform affordances and peer norms shape how academic help is exchanged and how academic integrity boundaries are maintained?

Background and Theoretical Lens

Prior work suggests MIM use in courses varies by who creates the chat (instructor-created vs. student-created) and by purpose (whole-class vs. small study groups) [1]. Students report using MIMs to share course logistics, resources, and explanations, benefiting from rapid responses and flexible participation [1], [2]. At the same time, MIMs can introduce disruptions (e.g., notifications) and raise concerns about academic dishonesty, although students may frame group chat activity as collaborative learning rather than cheating [3], [4]. Discord-focused studies describe both benefits (community, informal interaction) and challenges (distraction, usability barriers) in higher education contexts [5], [6].

We interpret student-initiated group chats using affordances theory, which theorizes how artifacts and users mutually shape action possibilities. Davis and Chouinard propose mechanisms such as request, allow, encourage, discourage, and refuse to describe how artifacts shape (and are shaped by) users and sociocultural contexts [7]. Affordances bridge the gap between users and a product and explain how user interaction and product features mutually influence each other. It further explains how external social and cultural forces influence how people can use products. This theory can be used in this research to illuminate how engineering students interact with MIMs and how the design of MIMs, in turn, influences them.

Context and Methods

This study is situated within a student-led Participatory Action Research (PAR) program designed to support undergraduate students in launching their own inquiry projects to better understand departmental culture and ongoing departmental changes from the student perspective. The PAR program is embedded within a broader, externally funded engineering department change initiative focused on shifting a traditionally unidirectional model of Research–Teaching–Service toward a more bilateral framework emphasizing Research–Students–Practice, including outreach to community partners. The participant pool consisted of undergraduate electrical engineering students. The first author conducted three semi-structured interviews (30–45 minutes each), which were audio-recorded and transcribed. Interview prompts examined how students found or entered group chats, the kinds of questions they asked and answered, how participation changed over time, platform preferences, and perceptions of academic integrity. The student researcher was mentored by an engineering education researcher (second author) who served as the PAR program's research lead and was additionally supervised by the department chair (third author).

Analysis is currently at an early-to-intermediate stage. We used an initial thematic approach to identify recurring patterns across transcripts (familiarization, initial coding, and preliminary theme grouping). In the next iteration, we will refine code definitions and interpret the findings using affordance theory.

Preliminary Findings

Sensemaking and academic clarification: Participants described group chats as spaces to clarify expectations, coordinate exam preparation, and verify understanding after attempting problems. One participant framed the chat as useful for *'good communication and building understanding'*

(P1). Another emphasized exam preparation, like asking what to study and helping peers (P2). The third participant noted the chat reduces uncertainty while waiting for graded feedback, enabling quick comparison and correction (P3). Beyond homework and exams, participants also described chats as "resource discovery" spaces that help students navigate course materials and surface supports that might otherwise be missed, such as *"a TA video series… kind of hidden in the modules"* (P3). Participants further described chats as a way to clarify *"what the professor says about the exam"* and logistics like *"where and how it's gonna happen"* (P2), especially when information is missed during class. Some students described collaborative study practices that extend beyond text, including *"study sections… everybody gets into voice call"* where peers *"improve their understanding"* (P3).

Participation is flexible and self-directed: Students did not need to post regularly to benefit. Activity was reported to spike around exams, with lower traffic outside those periods; however, students still expected quick responses when needed (P1). Participants distinguished between infrequent 'important' posts (e.g., exam location) and more social participation (e.g., jokes), suggesting a participation ecology with different roles and engagement levels (P2). Across interviews, participants emphasized that engagement is uneven and often concentrated among a small set of recurring contributors: *"it's normally the same people who are active"* (P1). Others described "transactional" participation patterns in which some members *"appear one day… and then they disappear right after you answer the question"* (P3). One participant characterized overall participation as low, estimating *"the average person would probably be a two"* on an engagement scale (P3), while also noting they *"ask as many questions as [they] answer"* (P3), suggesting reciprocal but situational involvement. Participants also suggested that chat dynamics vary with scale (e.g., a large course chat "upwards of 300 members" versus a smaller chat with "20 or 30"), shaping how visible, responsive, or social the space becomes (P1).

Platform features shape how help is exchanged: Discord was preferred for features that support higher-bandwidth collaboration, including voice chat and screen sharing, *"show your screen and actually go over things,"* (P3). Participants also noted Discord's channel structure can separate discussions by purpose (P1), potentially reducing noise and enabling targeted help. Participants contrasted Discord's affordances with GroupMe's more linear structure, noting that Discord allows *"separate… channels"* so it is *"easier to categorize"* discussion, whereas *"in GroupMe… there's no such ability"* (P1). In addition, participants described voice as enabling more efficient explanation than text *("Talking is just always more efficient than typing"),* allowing peers to clarify what they need and troubleshoot misunderstandings in real time (P3). These platform differences shaped not only convenience but also the perceived quality and bandwidth of collaboration, including whether students could work through problems together using screen sharing and voice-based tutoring (P3).

Academic integrity is managed through peer norms and self-regulation: Participants emphasized that academic honesty depends on user behavior rather than the platform itself *("it all comes down to the person using it,"* P1). Students described norm-setting actions (e.g., sharing institutional honesty policy) and conversational practices (asking generalized conceptual questions rather than requesting answers). When lines were crossed, participants described social disengagement or correction (P3). Participants provided concrete examples of proactive norm-setting, including posting the institutional academic honesty policy at the start of chats *"so we could facilitate information rather than less than honest academic practices"* (P1). They also

articulated *"how to ask"* norms that distinguish acceptable help from answer-sharing: e.g., asking *"I'm confused about this concept"* rather than *"the exact homework question,"* and responding by breaking down reasoning *"without actually saying 'this is what you need to do'"* (P3). When members violated these norms (e.g., sharing direct answers), one participant described a form of enforcement through exit and correction: *"I kind of just disengage with a group chat entirely and tell the person not to do that"* (P3). Participants further suggested that boundary-crossing behaviors may be more likely in smaller, private *"tight knit… group chats… like 4 people"* (P2), and noted risks related to assessment conditions (e.g., sequential exams) where earlier groups might *"release the content to the one that goes in after"* (P1).

Discussion and Implications (WIP)

Preliminarily, student-initiated group chats appear to enable and encourage rapid peer sensemaking without requiring continuous participation. Asynchronous messaging affords 'drop-in' support and creates an informal layer of course infrastructure that can compensate for delayed instructor feedback. Discord's multimodal features may further encourage collaborative problem walkthroughs, increasing the bandwidth of peer tutoring.

From an affordance perspective, integrity tensions illustrate how sociocultural legitimacy shapes what actions are practically 'afforded.' Although platforms may technically allow answer sharing, peer norms can discourage that behavior and redefine acceptable participation. For instructors and departments, these findings suggest that (1) responsiveness and clarity in official channels may reduce high-stakes uncertainty that drives intense chat activity, and (2) explicit guidance about collaboration boundaries may support students' self-regulation without requiring surveillance.

Limitations and Next Steps

This exploratory study draws on interviews with three students in one disciplinary context; findings are not intended to be statistically generalizable, but rather to offer valuable insight to the student and faculty community at the institution of study. Next steps include refining analytic procedures (e.g., codebook development, peer debriefing), expanding participation, and (with appropriate ethics approvals) examining naturally occurring chat artifacts to triangulate self-reports with observed interaction patterns.

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