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## What does the ‘chat’ tell us about participation and engagement in online video conferencing?



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### ABSTRACT

Although much is known about the experiential nature of online conferencing, we know less about actual participation and engagement. This paper investigates delegate interactions in the “parallel chat” function of a video platform during an online medical education conference. We collected 813 unique messages, posted while speakers presented on a digital stage. We used descriptive statistics to summarize message/chat content in terms of participant categories and topic. 23 % of delegates posted in the chat. However, to go beyond these dimensions, we used conversation analytic methods to identify the actions accomplished in messages and their interconnectedness. We developed a coding scheme to report this analysis across the complete dataset. We found that messages mostly comprised positive assessments (“Wonderful talk!”) and appreciations (“Thank you!”). ‘Second’ messages were more common than initiations or ‘first’ messages, indicating extensive engagement between participants. Few messages received no response. Delegates also formulated what speakers said to develop ‘learning moments’ in the chat. Overall, we argue that a richer and more precise understanding of participation and engagement in video conferencing can be achieved by analysing actual participation and its content, rather than relying only on post-hoc reports and surveys. Data are in British English.

### 1. Introduction

It has been almost four years since the world of academic and practitioner conferencing, events, and education, moved online, then hybrid, in response to the Covid-19 pandemic. Early in the arc of the pandemic, remote and video-mediated participation, while not technologically novel, was not standard practice for most large conference events, meetings, or seminars, but rapidly became so. Relatedly, online learning and education at all levels also accelerated during the pandemic, from pedagogically-informed online platforms, flipped classrooms, MOOCs, and so on (see, e.g., [Kuhn & Halpern, 2023](#)) to what [Barbour et al. \(2020\)](#) called ‘emergency

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remote teaching.’ Since then, thousands of online meeting, learning, and conferencing events have taken place; technology has continued to improve, and there has been much discussion and evaluation of the impact of online and hybrid environments on everything from climate impact to accessibility and other aspects of equity in participation (e.g., Kuzminykh & Rintel, 2020; Leporini et al., 2021; Niner & Wassermann, 2021; Rissman & Jacobs, 2020; Stokoe et al., 2021; Walton et al., 2022).

Although much is known about the experiential nature of online conferencing, we know very little about what kinds of participation and engagement occur, particularly in a key environment for these practices: the live unfolding “chat”. The aim of this mixed-methods paper is to investigate participation and engagement during an online medical education conference by examining delegate interactions in the parallel chat function of a video platform. We begin with a brief review of what is already known about participation in online, hybrid, and in-person conference events before articulating the research questions addressed in the current study.

### 1.1. Participation and engagement in conference and related events

One of the most salient themes in research about participation and engagement in both online and in-person events is equity, diversity, and inclusion, and especially the persistence of gender inequalities. Such inequalities have been identified both in terms of attendance at events as well as which delegates participate publicly once present. For example, Rezaee et al. (2022) investigated participation at a large in-person American conference for radiologists. Not only were there more male delegates, presenters, and moderators, far fewer women than men participated in question-and-answer sessions and women also spoke for a significantly shorter time than men. From their study of conference participation across a wide range of academic disciplines, Jarvis et al. (2022, p. 1882) also found that “men engage more than women in Q&A sessions”, and thus “continue to have more influence over the direction of science.” While people can, of course, be engaged in an event as an audience member without *explicit* participation (of the kind that would be captured by, say, the asking of questions), where such measures have been taken, they reveal uneven participation across groups of attendees.

When it comes to online and hybrid participation, researchers have begun to show some evening out of these disparities. For example, in their analysis of rates of question-asking in medical learning environments, Cromer et al. (2022, p.1) found that, while “women had a lower rate of asking and answering questions... these disparities were attenuated in smaller, discussion-based and virtual classes.” Similarly, in an analysis of the UK equivalent to the annual conference of radiology reported in Rezaee et al. (2022), Gibson et al. (2023) found that, while men dominated all conference participation roles during in-person events, “[t]he odds of roles being held by women increased during online meetings during COVID”, leading them to conclude that “hybrid online/inperson formats may accelerate change.” (p.1). Similarly, Walton et al. (2022), in a mixed-methods investigation of participation in a STEM academic conference, found that online formats improved diversity and inclusion by created a less hierarchical environment. However, as Johnston et al. (2023) point out, the heterogeneity of studies to date that evaluate online modalities reduces the clarity of the overall picture. Furthermore, in recent comparison of participation across in-person, virtual, and ‘chat-only’ formats, Jarvis et al. (2023, p. 818) found that “men continued to take a disproportionate amount of time and space in Q&A sessions.”

To date, studies of online participation in conferences and related learning environments focus on a relatively narrow range of ways of analysing participation, often by coding and counting a range of participation ‘metrics’, such as who attends, and who asks questions. That is, few seek to understand the experiential or interactional aspects of participation in depth, as it unfolds in real time. Those that aim to “look beyond the metric of ‘attendance’ to “the nature and experiences of actual participation” by incorporating “qualitative insights” (Walton et al., 2022) have largely relied on post-hoc accounts of experience, rather than attempt to capture and analyse participants’ interactions themselves. Self-report, either via survey or interview, while heavily used by academic researchers of all disciplines, is, nevertheless, routinely criticized for biases of various kinds (e.g., Harré, 1993; Nisbett & Wilson, 1977; Potter & Hepburn, 2005). A solution to the problem of self-report is direct observation “to directly observe human behavior in daily life... where moment-to-moment behavior naturally happens” (Mehl, 2017, p. 184).

One perspicuous data source for investigating “the nature and experiences of actual participation” in online conference events is the parallel chat content; that is, the written contributions made by participants as the conference event unfolds in real time. Although such data has been leveraged to understand participation and engagement, the focus has, again, typically been on counting questions posed in the chat and/or correcting counts with gender. For example, Zhang et al. (2022) examined the relationship between gender and question-asking behavior at an online bioinformatics conference. Their quantitative analysis showed that participation was diverse: it reached parity for gender, as well as nearly 10 % self-identifying as a member of the LGBTQIA+ community. However, despite being 50 % of the audience, “women asked half as many questions as men” (p. 3), and “[n]o question was asked by a person from a gender minority (agender, nonbinary, or transgender).” They also noted that only 13 % of conference attendees asked questions at all.

Researchers have also leveraged chat data to address other questions, such as its benefits for facilitating collegiality and social talk (e.g., Bleakley et al., 2022), which echoes findings from research on chat in the context of computer-mediated collaborative learning among children and young people (e.g., Kumpulainen & Mikkola, 2014). Sarkar et al. (2021) found that, when asked to describe their experience of parallel chat, participants reported benefits (e.g., inclusive, good for sharing resources and for collaboration, social connection) as well as problems (e.g., distraction, asymmetries regarding who can engage with or follow the chat, misaligned expectations about how to use it). In a recent study of university students, Huang (2022) analysed messages posted in the chat box of an

online learning platform. Relevant to the current paper, she noted that the research use of this kind of data is “rather scarce”, but that it carries affordances for understanding “authentic participation” (p. 7977). Huang’s analysis of the chat data identified five types of messages: “students’ responses of factual information (62.77%) social interaction (15.74%), phatic communication (9.95%), tech-related messages (7.5%) and class schedule (4.5%)” (p. 7973). As she concludes, this granular coding enables richer “indicators of online student participation” than “range from more conventional ones of asking and replying to questions” (p. 7989).

Online messages and parallel chat are ‘public’ when all participants (are able to) access, read, and respond to it. Of course, in any given online encounter, it is possible to ‘whisper’ in the invisible backstage or backchannel (Dennis et al., 2010) either by sending direct messages within the same video conferencing tool, or by using another device/software to conduct separate conversations. These are hard though not impossible to access for research purposes (e.g., Cogdill et al., 2001).

### 1.1.1. The present study

Researching participation and engagement at conference and related events is important for many reasons, from understanding what sorts of environments are effective for professional and knowledge development to what is effective for equity, diversity, and inclusion. However, to the best of our knowledge, research to date has focused on a relatively narrow range of indicators and variables, centred - in both in-person and online events – on counting questions asked and correlating with gender. Such measures provide relatively superficial insights into the kinds of interactions that may occur, and exclude the myriad actions (i.e., the pragmatic function) that any parallel chat message may accomplish. For instance, counting questions ignores the fact that they can be vehicles for other many other actions (e.g., “Do I look weird in this outfit?” may be designed to elicit a compliment, rather than a yes or a no).

The aim of the present study is to extend what we already know about participation and engagement in online conference events by collecting and analysing the parallel chat messages posted by delegates during such an event. In August 2020, Don’t Forget the Bubbles, a paediatric education organization, hosted its annual conference online using a platform that enabled participants to chat while watching speakers on the ‘Main Stage.’ In addition to using descriptive statistics, we use conversation analysis to better understand actions other than asking questions and also to address how participants interact with each other. In so doing, we aim develop a framework for developing deeper insights into participation in video conferencing events. Our research questions (RQ) are as follows:

RQ1: Who participates in online conference chat?

RQ2: What do participants chat about, in terms of topic?

RQ3: What kinds of actions (and sequences of actions) comprise live, unfolding chat interactions?

RQ4: How does the chat connect to what speakers say on the ‘Main Stage’?

## 2. Data and method

### 2.1. Data collection

Don’t Forget The Bubbles ran their annual conference titled “Live+Connected” online on 26th August 2020, with event organizers “The Business Narrative”. The ten-hour event used a virtual interactive platform which comprised a digital ‘green room’ backstage studio for speakers and organizers and a ‘Main Stage’ with an interactive chat function.<sup>1</sup> It is important to note that, while speaking, speakers could not access the chat and any questions for them were not fed into the conversation directly. Rather, speakers could join the chat back in the ‘Main Stage’ and respond later, if they wanted to, and if they remained at the event. We collected and anonymized 813 unique messages that were written into the ‘chat’ throughout the conference. Each contribution was time-stamped and could be associated with whatever was currently being performed on the ‘Main Stage’ (via time-stamps).

### 2.2. Ethics and consent

Our decision to explore what happened in the conference chat came about during post-event discussion between the authors. This meant that the consent of participants was sought post-hoc. Regarding formal ethical approvals, the relevant bodies in the UK are the National Health Service Research Authority and the Medical Research Council. However, upon application, this study was not categorized by these bodies as ‘research’ since it did not involve identifiable or sensitive content about patients. Therefore, the authors sent an email to all delegates to make them aware that we were researching the written content of parallel chat messages and inviting them to opt out of the process. We received emails from participants who wished to withdraw, and respected those preferences, but, in the event, none of those seeking to withdraw participated in the chat anyway, so did not appear in the dataset. Aligned to other relevant codes of ethical conduct (e.g., British Psychological Society, 2021) we ensured that no chat authors could be identified. All names and other potentially identifying information were pseudonymized. In total, 786 attendees from 32 countries participated in the conference. We had limited demographic data about participants overall, however, so did not have information about, say, gender or job role.

<sup>1</sup> A report about the event with screen shots can be found online: <https://thebusinessnarrative.com/work/organising-dftb-live-connected-virtual-conference-2020/> as well as video on YouTube: <https://www.youtube.com/watch?v=dj3aI9GnaPk>.

### 2.3. Data analysis

The research uses a mixed-methods design, combining descriptive statistics to summarize the chat content and conversation analysis both to explore the data qualitatively and to underpin a coding scheme to scale up our insights. The aim of the conversation analysis-derived coding scheme was to enable us to go beyond simple counts of, for example, ‘questions’ posed in the chat and towards a more nuanced understanding both of the range of actions that comprised the chat and the extent of the interactions between participants themselves.

First, we analysed the parallel chat data firstly using descriptive statistics. This coding was conducted by the second author. Each message was attributed to a *participant category*: speaker; delegate, or conference organizer/event team member. We further coded each message for its *topical content* – notwithstanding the fact that the whole conference could be glossed as being ‘about’ paediatric practice – with one of the following categories: children (used as a proxy for “paediatric” content of all kinds), conference schedule, tech/IT issue, working from home, Covid-19, future conference events, and the topic of ‘participation’ itself). Speakers were individuals who presented from the ‘Main Stage’ of the event. They were medical experts, educators, or professionals in paediatric practice. They delivered presentations or lectures on specific topics to provide informative and engaging content to the audience. Team members were event organizers, technical support staff, and event moderators who helped manage the event. Delegates were conference attendees who watched presentations and engaged in live chat function. They asked questions, provided feedback, and interacted with both the speakers and other delegates. They were largely nurses, pre-hospital clinicians, allied health professionals, medical practitioners, educators, or students interested in paediatric practice. The on-stage performances included lectures, presentations, panel discussions, case studies and interactive sessions. Discussion topics included the latest clinical practices, teaching methods, and technological advancements in paediatric practice. Speakers shared research findings or demonstrated clinical procedures with visual aids. In terms of the relationship between speakers and delegates, most were peers or colleagues with similar levels of expertise, as well as novices and learners. The conference facilitated in-depth discussions, knowledge sharing, and networking.

Second, we conducted conversation analysis on exploratory selections of the parallel chat data. This analysis was conducted by the first, second, and third authors. Conversation analysis is method for analysing social interaction (talk, embodied conduct), usually using video or audio recordings and technical transcripts thereof as the primary data. A key principle of conversation analysis is to work with ‘naturally occurring’ social interaction, rather than interactions in simulation, role-play, experimental settings, or via post-hoc reports of the experience of social interaction. The aim of conversation analysis (CA) is to examine the organization of social interaction in terms of constituent *actions* – the things we do with words (e.g., questions, answers, offers, requests, greetings, assessments, etc.) and *sequence* – “a course of action implemented through talk” (Schegloff, 2007, p. 9). CA examines the design and impact of an action (e.g., how the design of a question affords or constrains particular next actions) and their position with regards to any other action as well as in the overall interaction (e.g., whether an answer immediately follows a question, whether a question appears at the start of an interaction or elsewhere). While most conversation analysts focus on spoken talk and embodied conduct,

**Table 1**

Action.

| Core action  | Example from the dataset   | Other action(s) or stances carried with core action   |
|--------------|--|---|
| Greeting     | “Welcome to the DFTB main stage!”  |   |
| Question     | “What is the best way that junior staff could approach you to be involved in research or projects?”<br>“Do you mean 6:20?”   | Information-seeking<br>Query/misunderstanding   |
| Answer       | “Will post on YouTube in a few mins...”  |   |
| Request      | “Can we find mentors on this forum?”<br>“PPE communication tips greatly appreciated.”  | Request for information<br>Request for advice   |
| Assessment   | “Such a fabulous initiative.”<br>“It is very uncomfortable hearing this...”<br>“The whole team is so excited to see you here :)”<br>“bleeeeeeeeerghhh. what time of day is THIS??”   | Positive assessment<br>Negative assessment<br>Affiliative assessment<br>Ironic assessment             |
| Statement    | “This is where all our talks will be running”  | Information-giving  |
| Offer        | “We’ll get that made up on a t-shirt”  |   |
| Apology      | “Sorry about the technical glitch”   |   |
| Suggestion   | “Can we play this in every ED waiting room”  |   |
| Complaint    | “Oh dear...lost signal?”<br><br>“Wouldn’t it be great if you could; we need to infiltrate ((name of organization)) education committees with ((name of organization)) people. OF course, we have ways of doing this... :)” | Complaint about conference organization issue<br>Complaint about something external to the conference |
| Correction   | “meant NOT allow”  |   |
| Agreement    | “Completely agree. This is why I can’t bear the term “inappropriate attender””   |   |
| Disagreement | (none identified)  |   |
| Account      | “Have left all the dinner prep and washing up to the others... hiding away in the home office and will have room service! Lol”   |   |
| Invitation   | “Remember that you can leave questions for the speakers panel in the chat box here! :)”  |   |
| Appreciation | “Thanks for the talks. Very inspiring especially about collaborative research.”  |   |
| Closing      | “Annnnnnd that’s a wrap!”  |   |

increasing numbers also examine written interaction online including how participants manage coherence and understanding in the different modalities (e.g., SMS messages, Twitter interaction, messaging apps, for an overview, see [Meredith, 2020](#)).

Third, we used this analysis to derive a conversation analytic coding scheme. While conversation analysts work with single cases or with larger datasets and CA is usually regarded as a qualitative method. However, CA can “combine with quantitative methods” in order to address “a wider range of research questions and to speak to a broader audience than would otherwise be possible” ([Stivers, 2015](#), p. 2). This is particularly the case when constituent actions are analysed and then coded in order to scale up an analysis. CA-coded data have been core to RCTs (e.g., [Heritage et al., 2007](#)) and other large-scale research projects, particularly in medicine (e.g., [Stivers & Timmermans, 2020](#)) or as the basis for computational modelling (e.g., [Duran et al., 2022](#)), and coding schemes have also been developed to systematically analyse dialogue in related pedagogical environments (e.g., [Hennessy et al., 2016](#)). Thus, we augmented the usual descriptive statistics with a coding scheme derived from CA to provide a richer insight into ‘what actually happens’ in the chat. The first and second authors developed the coding scheme. The second author completed the initial coding of all chat messages using the scheme, and the first author reviewed the coded content to ensure accuracy.

The coding scheme is set out below in [Tables 1 and 2](#). The aim of developing the scheme was to be able to code messages for their participatory and interactional affordances, in conversation analytic terms. Therefore, we coded each chat message for its *action* or actions and its position in a conversational *sequence*. [Table 1](#) shows the coding scheme for *action*, with explanatory and illustrative examples from the data. We coded 1) the core action done in a message such as a ‘question’ or a ‘greeting’; 2) other actions carried by the message; for instance, a question can also seek information (e.g., “can you tell me...?”) or check understanding (e.g., “do you mean...?”); a greeting can also convey identification (e.g., “Hello from Australia”), and 3) the writer’s stance towards an action; for example, an assessment can be positive (e.g., “wow!”) or negative (e.g., “urgh”). For multi-part (e.g., multi-sentence) messages, we

**Table 2**  
Sequence.

| Core sequential position                   | Explanation   | Example from the dataset   |
|--|---|--|
| First pair part (FPP)                      | The ‘first pair part’ refers to the first turn component, and action, in what conversation analysts call an ‘adjacency pair’. An adjacency pair is the building block of social interaction and provides the foundation for constructing sequences of activity. The FPP initiates action (e.g., question, announcement, request, assessment, offer, invitation, etc.).  | “Good morning from the UK”   |
| Sequence Initiation (SI) or Expansion (SE) | Any given FPP may be initiating a new sequence or expanding upon, developing, or otherwise continuing an existing sequence.   |  |
| Second pair part (SPP)                     | In any adjacency pair of turns, each turn is produced by different participants and are adjacently placed; that is, one after the other. A ‘second pair part’ refers to the second turn component. The SPP progresses the action initiated in the FPP (e.g., answer, reject, decline, disagree/agree, etc.).  | “I think we probably all did”  |
| Standalone FPP (Standalone)                | We coded for turns that received no SPP; that is, messages that received no response or uptake from other conference participants. In some contexts (e.g., online dating) this might be referred to as “interactional desertion” or “ghosting” ( <a href="#">Licoppe, 2021</a> ).   | “Hello”  |
| Sequence-closing third (SCT)               | The addition of one turn to a sequence after the SPP has happened. Examples of actions done through SCTs include marking news (‘Oh’), confirming (‘Right’), the multifunction ‘Okay’, assessing (e.g., ‘Great’, ‘Excellent’, ‘Shit’, ‘Lovely’, etc.), appreciating (e.g., ‘Thanks’).  |  |
| Skip connect                               | ‘Skip connecting’ refers to the way people skip over immediately prior turns to address something that happened earlier in a sequence. Although ‘adjacency’ and ‘nextness’ is key to the coherence of an interaction, there are times when participants want or need to address an earlier turn or where turn adjacency is ‘disrupted’ for particular reasons ( <a href="#">Herring, 1999</a> ). As <a href="#">Licoppe (2021)</a> notes, “there is a loosening of the way participants orient towards ‘adjacency’ and ‘nextness’. With chats, a recognizable second pair part is expected in the next contribution, but not necessarily in the next message, or in first position in the next message.” In written multiparty chat, where there is no functionality to select and reply to a particular message, maintaining the integrity and progress of a sequence requires at least two types of skip connecting, to a topic and to a person. We were careful to exclude what <a href="#">Garcia and Jacobs (1998)</a> referred to as “phantom adjacency pairs” in which the SPP does not actually belong with the FPP, even though it looks like it does. | Skip Topic<br>“someone said earlier about registration...?”<br>Skip Person<br>“that’s great, Gemma”.   |
| Indexical                                  | We coded as ‘indexical’ turns those in which the meaning of a word or expression was dependent on the context in which it is used.  | Indexical-R refers to a person being referred to (e.g., “they are great”) and Indexical-T to the object/topic being referred to (e.g., “that is great!”) |

coded each component.

Given that any given message could contain more than one core action (e.g., especially those comprising more than one sentence), we coded for up to three core actions and up to three ‘other’ actions for any individual message.

We also coded each message for its sequential position and relationship to another message. This was crucial for understanding participation in the chat, since we could analyse the (dis)connectedness of, and (non)development of, sequences of messages, alongside what each contribution was doing individually. As Sidnell (2005) explains:

At its most basic, ‘sequence organization’ is embodied in the phenomenon of paired actions or adjacency pairs. For instance, a question creates a ‘slot’, ‘place’, or ‘context’ within which an answer is relevant and expected. This is, of course, not to say that questions are always followed by recognizable answers to them. To say that turns are often organized as adjacency pairs is to make a statement about a rule (or norm) which participants themselves use in the production and recognition of talk-in-interaction, rules which they orient to in various ways so as to find and construct orderly sequences of turns-at-talk... Such paired actions are themselves components of larger sequences. One can often describe larger sequences as consisting of a base pair and various expansion sequences.” (p. 217–218).

Table 2 shows the coding scheme for *sequence*, with examples from the dataset and a brief explanation of technical conversation analytic terms.

### 3. Results and analysis

We report the findings of our analysis in four sections. The first two sections address RQ1 (“Who participates in the online conference chat?”) and RQ2 (“What do participants chat about, in terms of topic area?”) by reporting the descriptive statistics summarizing chat participation (Section 3.1) and topics discussed (Section 3.2). We then move on to address RQ3 (“What kinds of actions - and sequences of actions - comprise live, unfolding chat interactions?”) and RQ4 (“How does the chat connect to what speakers say on the ‘Main Stage?’”) by presenting the results from our conversation analysis-derived coding of the chat data (Section 3.3) and finishing with qualitative examples from the conversation analysis itself (Section 3.4).

#### 3.1. Descriptive statistics – who participated?

Of the 786 attendees, 184 joined the chat and posted 813 unique contributions in total. Thus, 23 % of all attendees produced a message that formed part of our dataset. 77 % made no written contribution. Of the 813 messages, women wrote 619 (76 %) and men 194 (24 %). As noted earlier, we did not collect self-declared gender data and so, following other researchers, “classified gender as male or female using names, records or personal pronouns, accepting the limitations of these categories” (Gibson et al., 2023, p. 1). While

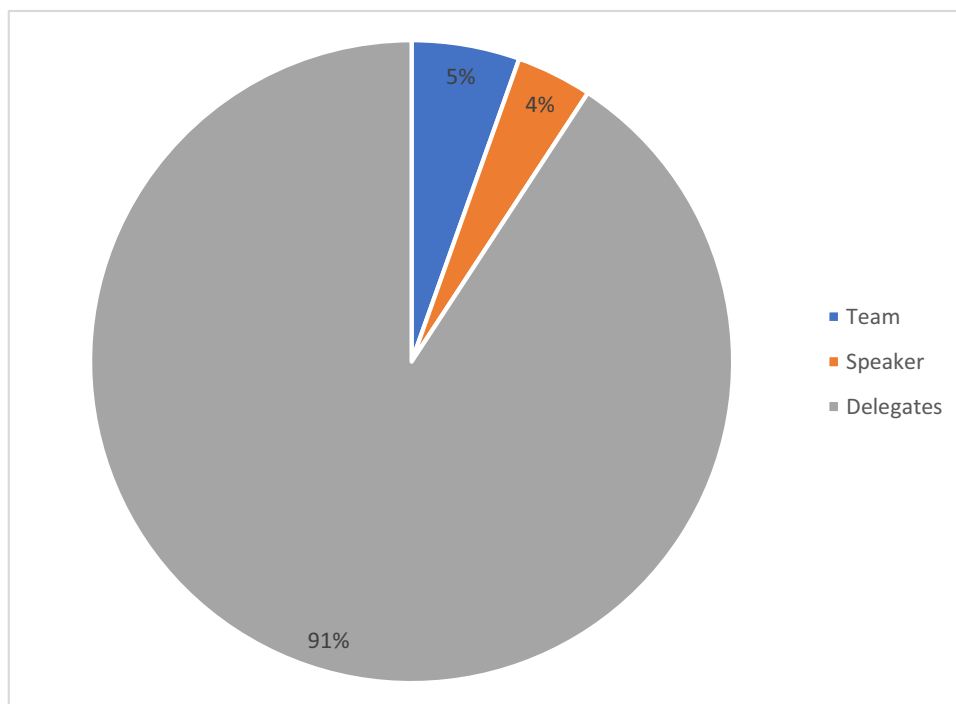
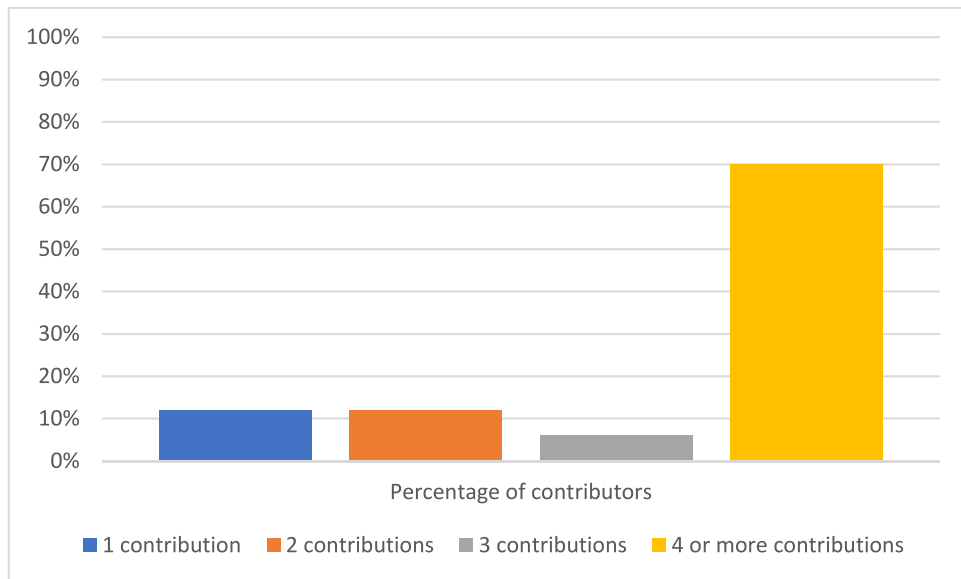
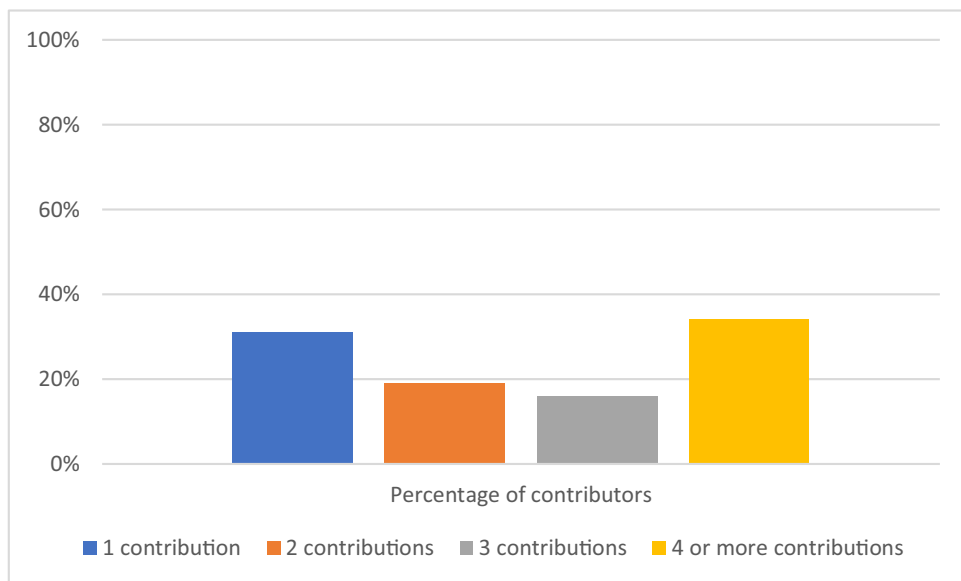


Chart 1. Proportion of chat participants.



**Chart 2.** Relative frequency of chat contributions by event organizers and speakers.

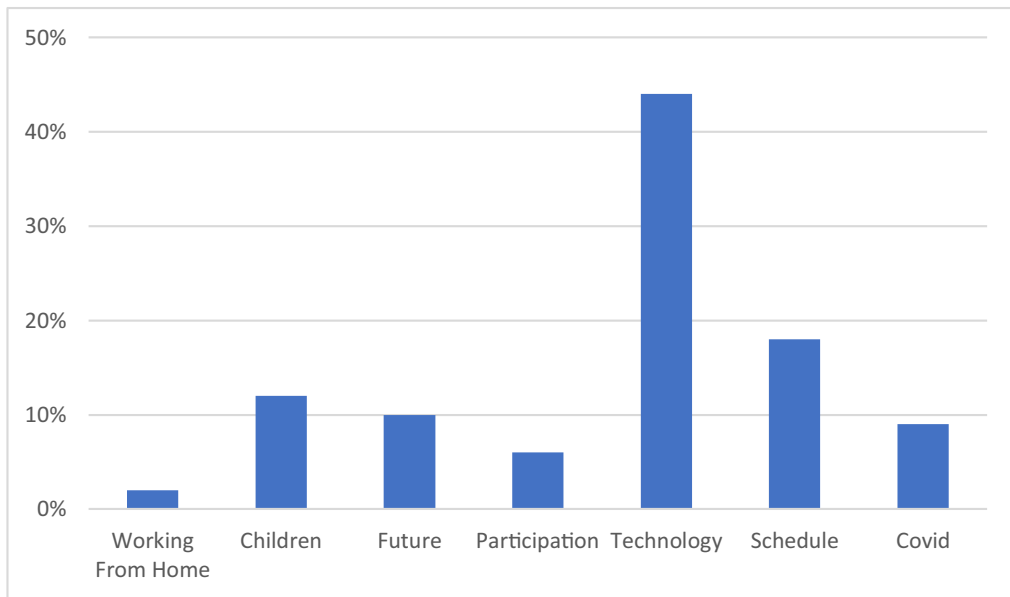


**Chart 3.** Relative frequency of chat contributions by delegate.

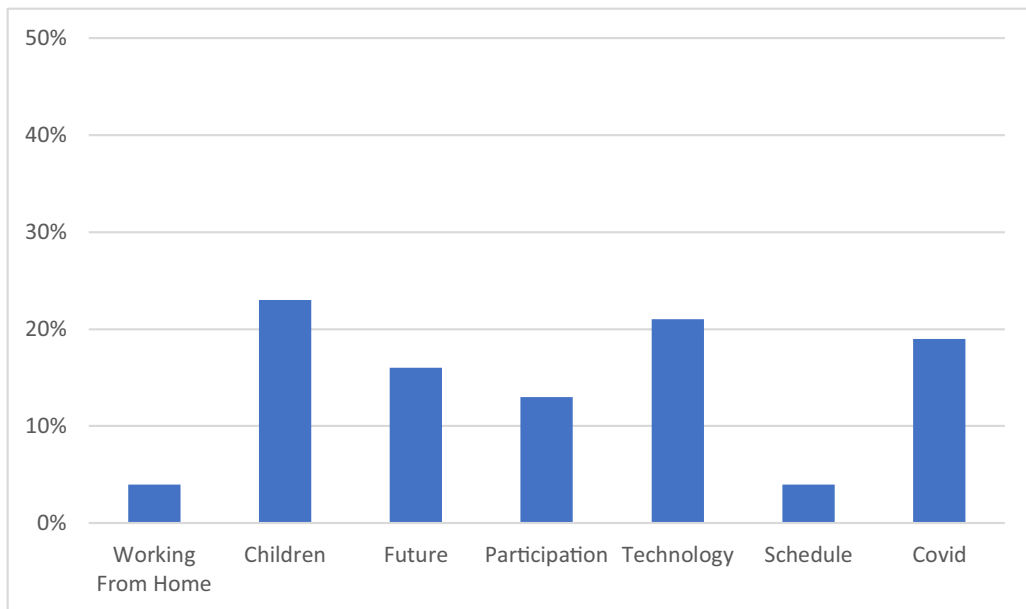
this suggests a reversal of participation in terms of gender when compared to studies reviewed in the introduction, we do not know, of course, the relationship between these proportions and overall delegate gender balance. Of the 184 contributors who joined the chat, 10 (5%) were conference team members, 7 (4%) were speakers, and the remaining 167 (91%) were delegates. [Chart 1](#) summarizes this data:

Of the 813 chat messages, 613 (75%) contributions were made by delegates and 200 (25%) contributions were made by conference organizer/event team members and speakers. One event organizer accounted for the most contributions in the chat, totalling 58 posts. [Charts 2 and 3](#) below each represent the participation by individuals and whether they wrote single or multiple messages.

It is clear from [Charts 2 and 3](#) that some delegates were more active than others, and the most common form of participation was multiple messages from a relatively small proportion of the total audience – and this in the context of only 23% of all participants writing in the chat at all. However, this is a substantially higher proportion than the 13% reported above in [Zhang et al. \(2022\)](#).



**Chart 4.** Relative frequencies of topical content by event organizers and speakers.



**Chart 5.** Relative frequencies of topical content by delegates.

### 3.2. Descriptive statistics – what did people chat about?

Next, we asked what those participating in the chat were discussing. We took cues from the chat messages to attribute an overall topical content to one of the following categories, as explained earlier: the conference schedule, tech/IT issues, children, working from home, Covid-19, future conference events, and participation in the event itself. Unsurprisingly, the most common topic for conference organizer/event team members and speakers was technology, followed by the schedule. [Chart 4](#) breaks down the topics for this participant group.

By contrast, delegates discussed the schedule far less, and generally less about technology. [Chart 5](#) summarizes the topical content of their messages.

Delegates discussed other topics, such as working from home, covid, future events and participation itself, approximately twice as



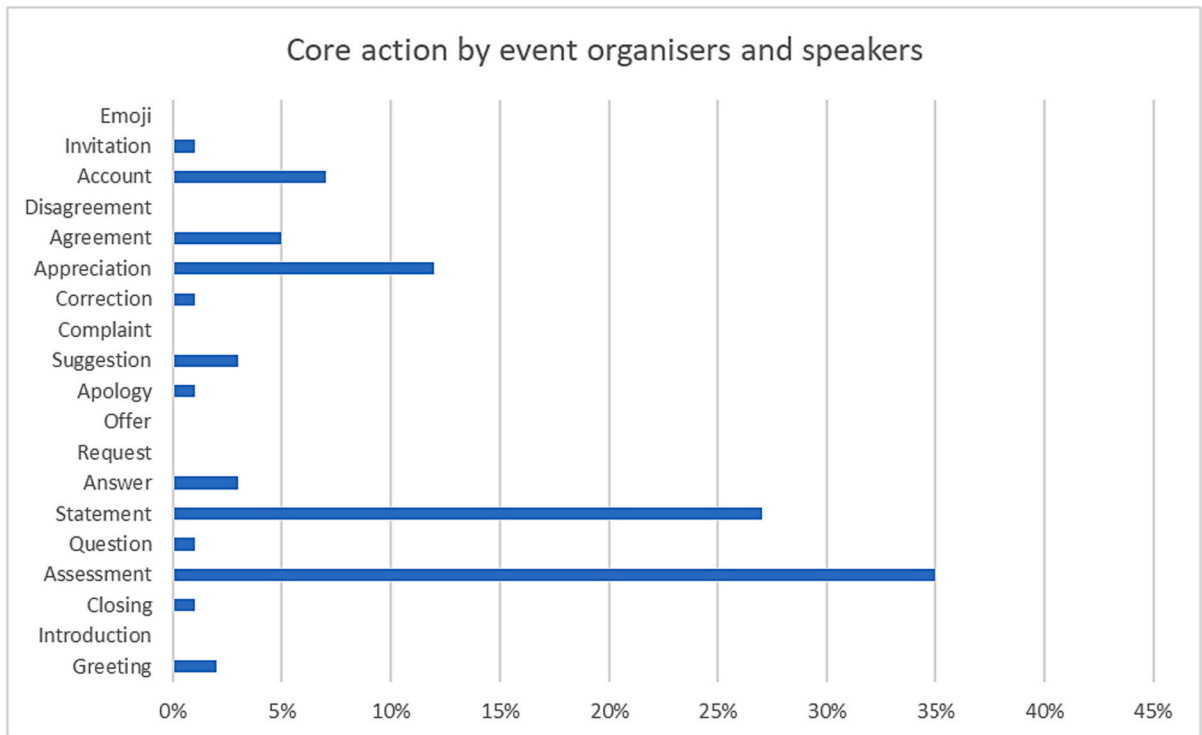


Chart 6. Relative frequencies of core actions made by event organizers and speakers.

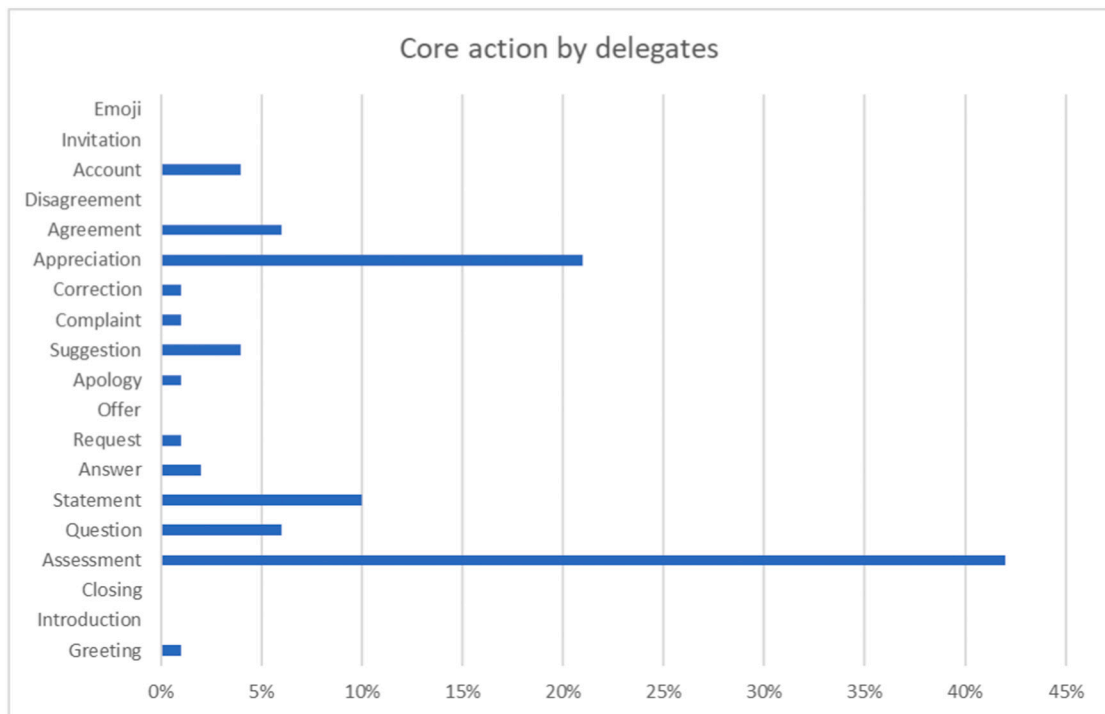


Chart 7. Relative frequencies of core actions made by delegates.

much as conference organizer/event team members and speakers, which is unsurprising if the latter group focused more on technology and the schedule. Also unsurprisingly the largest topic was ‘children’, our proxy for all things paediatric.

### 3.3. Conversation analysis-derived coding

We now report on the coding results from the conversation analytic scheme described above. [Charts 6 and 7](#) below break down the main actions done through the chat. [Chart 6](#) provides this information for conference organizer/event team member and speakers; [Chart 7](#) does the same for delegates. Note that some of these categories appear even though they apparently have no instances. This is because numbers were too small to feature as a percentage (e.g., we observed two uses of emojis in the total dataset).

Our analysis suggests that, for all participants, most messages written in the chat were of the actions done by participants in the chat were assessments (e.g., “wonderful!”) and appreciations (“Thank you!”). While all participants made statements (e.g., “This is where all our talks will be running”), this action was more common for the event organizers and speakers, which is unsurprising. Delegates asked more questions than event organizers and speakers, and the latter gave more answers than the former. But, overall, it is clear that questions themselves were far less common than assessments and appreciations in terms of actions done by delegates. Across both groups, of the 456 assessments made, 400 were positive (87.7 %).

#### 3.3.1. Action

When broken down further (and noting that, since one message can perform multiple actions, which accounts for numbers not totalling 100 %), most other actions were ‘positive assessment’ and ‘information giving’. [Charts 8 and 9](#) show these breakdowns for both participant groups.

#### 3.3.2. Sequence

In addition to the type of actions being accomplished through chat messages, we also analysed each message for its sequential position in order to understand the (dis)connectedness of, and (non)development of, sequences of messages, alongside what each contribution was doing individually. [Table 3](#) reports the overall proportion of initiating (‘first pair parts’ and ‘SI’ sequence initiating) turns as well as turns that expand upon (‘second pair parts’, ‘SE’ sequence expansions) another’s initiation. ‘Indexical’ turns (e.g., “they are great”) and those that we coded as ‘skip connect’ turns (e.g., “you said earlier, Jason”) that, by definition, refer backwards to a previous turn. In written interaction, authors sometimes do extra work to show that their message is connected to one that might have appeared several messages ago on the chat timeline, and, for our analysis, it was important to preserve this continuity.

The analysis shows that, in general, more messages were responsive (SPPs or sequence expansions) to initiations than the other way round. This is indicative of engagement, since if most messages were initiating/FPPs, then it would mean that there were fewer responsive messages and less engagement overall. Overall, we can see that there were very few ‘standalone’ messages (which appeared not to be responsive to either something on stage or in the chat). There were also few turns that built off previous messages using indexical terms (e.g., if one message read, “the DFTB conference...”, there were few subsequent messages containing indexicals such as, “it was”). Like the limited use of skip-connecting messages, it seems as though delegates did not attempt to build long threads of connected messages. Perhaps for this reason, we did not identify examples trouble in understanding and ‘miscommunication’ in the chat. Indeed, this observation aligns with other research on both dyadic and multi-party chat conversations, which shows that despite that sequential organization of utterances becoming disrupted, the communication does not necessarily break down (c.f. [Berglund, 2009](#); [Herring, 1999](#); [Lapadat, 2007](#)). Finally, it is unsurprising that there was a tiny proportion of sequence-closing *third* turns which, for example, confirm (‘Right’) or receipt (‘Okay’). Instead, such turns (which also can include appreciations and assessments) occurred in ‘second’ position. We counted ten cases across the data in total, which rounds to 0–1 % when summarized as a percentage.

The conversation analytic coding provides disaggregated and therefore richer insights into delegates’ written messages comprised, beyond a simple count of questions asked. It also enables insight into how the participants interact with each other across messages. In the final section, we provide some illustrative examples of the kinds of analysis that underpinned the coding scheme by presenting a series of extracts and our analysis thereof.

### 3.4. Conversation analysis

To give readers a more contextualized understanding of the messages analysed above, we now consider some of them in situ, across three illustrative extracts. The first comes right from the start of the conference. Each participant is categorized as either a conference organizer/event team member (“T”), speaker (“S”), both team member and speaker (“ST”) or delegate (“D”). All names are pseudonyms. We have added a number to each row of the chat transcript to refer to it in subsequent analytic commentary. Spelling, punctuation, and so on, are as per the original messages.

**Extract 1.** Conference opening (04:42:54–05:13:54 UTC).

01 T Jen: Welcome to the DFTB main stage!  
 02 T Jen: This is where all our talks will be  
 03 running  
 04 T Jen: We kick off at T-17 minutes  
 05 D Clare: yes i have this open  
 06 T Jen: The whole DFTB team is so excited to see  
 07 you here :) Feel free to have a roam of  
 08 the session areas, networking and expo  
 09 before the main program starts  
 10 D Clare: thanks! excited to be part of dftb!  
 11 my first!  
 12 though i will have to go off soon to  
 13 pick up bub from childcare as hubby is  
 14 also working  
 15 D Clare: and then hand bub over to hub, while i hide  
 16 in the room with my computer  
 17 D Clare: when hub is back  
 18 D Scott: my iPad is roaming the house and backyard  
 19 with me  
 20 D Jackie: Have left all the dinner prep and washing up  
 21 to the others... hiding away in the home  
 22 office and will have room service! lol  
 23 D Elspeth: Good mornng from the UK, 6am here  
 24 ST Zak: bleeeeeeeeeerghhh. what time of day is THIS??  
 25 D Robert: just after midnight ZAK  
 26 D Olivia: Such a fabulous initiative. Well done on the  
 27 Skin Deep Project!  
 28 ST Zak: Hey Robert!  
 29 T Jen: dftbskindeep.com is the new home for the  
 30 Skin Deep Project!  
 31 ST Jil: So happy to be involved with Skin Deep.  
 32 It's really fantastic. Please get in touch  
 33 if you'd like to get involved  
 34 S Beth: Well done DFTB Skin Deep team - amazing  
 35 initiative!  
 36 D Zara: I'm in! Hello everyone!  
 37 D Catie: Hello DFTB World :) sad not to be seeing  
 38 you all in Brisbane but love this!! And  
 39 WOW love Skin Deep  
 40 D Jack: Such a great project - well done to all  
 41 involved & I look forward to seeing it in  
 42 the next RCPCH Milestones  
 43 D Ben: How lovely to see friends and familiar  
 44 faces coming together. Good luck team.  
 45 Wake up Zak. Skin deep project brilliant  
 46 D Zara: Hi Ben!! eeeek so excited to be here!  
 47 D Clara: I laughed way too hard at that classic dad  
 48 joke  
 49 ST Gem: I'll be keeping an eye on the chat here so  
 50 please let me know any questions you'd  
 51 like me to put to Jim, Oliver, and Harriet

We want to point out six things about this extract, which contains the parallel chat messages that appear before the event started formally, as people joined the digital space. First, it is not surprising that a conference organizer/event team member, Jen, writes the first chat message, and the next two, collectively accomplishing multiple actions: welcoming delegates (line 01), informing them that they are in the right place to hear talks and participate (lines 02–03), and announcing when the event will start (“We kick off at T-17 minutes”, line 04). As the incumbent of a setting-based category (i.e., ‘organizer/host’), Jen is both entitled and obliged to initiate such actions and encourage the participation of others.

Second, at line 05, the first delegate, Clare, message appears: an announcement about the technical aspect of participation (“yes i have this open”). This message, and its sequential location, sheds light on one of the complexities of chat participation, as those participating manage intersubjectivity (mutual understanding between participants), and what conversation analysts call progressivity (“moving from some element to a hearably-next one with nothing intervening”, Schegloff, 2007, p. 15). Clare’s message is responsive to Jen’s: it confirms an ability to participate at an apposite moment just after Jen informs the audience that there are 17 minutes before the event starts formally. However, it also appears while Jen is seemingly typing a fourth message (“The whole DFTB team is so excited to see you here :) Feel free to have a roam of the session areas, networking and expo before the main program starts”)

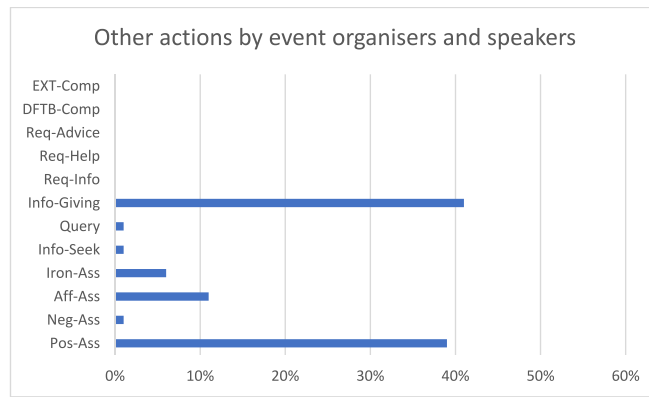


Chart 8. Relative frequencies of other actions made by event organizers and speakers.

which appears sequentially after Clare’s, while clearly connected to the same opening sequence of messages. In response, Clare now posts a three-part message, appreciating the welcome and information (“thanks!”), reciprocating Jen’s stance towards the event (“excited to be part of dftb!”), and then adding a third part that categorises herself as someone previously unknown to the organizers/organization (“my first!”).

Third, Jen initiates a new sequence (line 12) to account for her participation in the day (“though i will have to go off soon to pick up bub... when hub is back”). Two more now join the chat, by expanding upon Clare’s account with accounts of their own (lines 18–22).

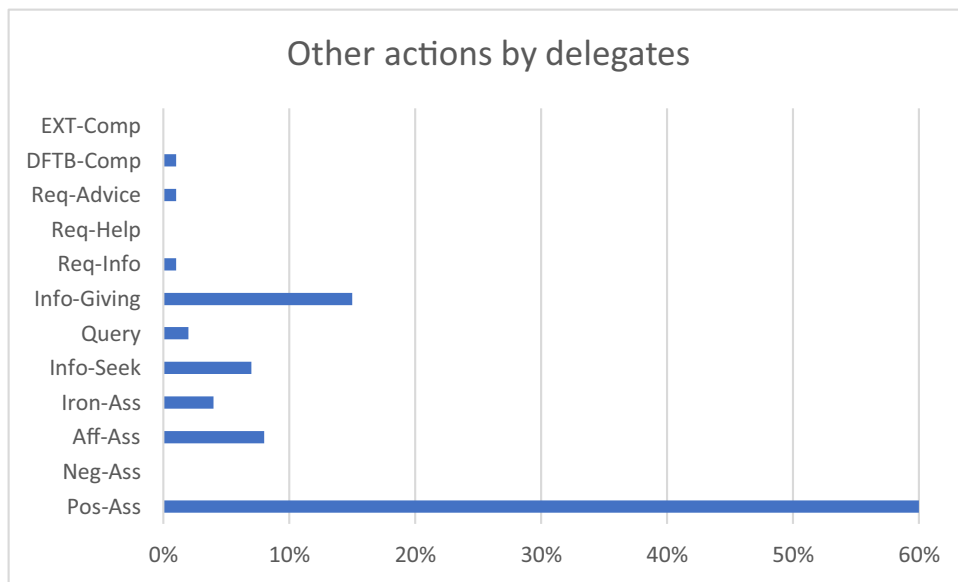


Chart 9. Relative frequencies of other actions made by delegates.

Table 3  
Sequential interconnectedness between messages.

| Sequence    | Percentage of message posts by event organizers and speakers | Percentage of message posts by delegates |
|-------------|--|--|
| FPP         | 57 %   | 39 %                                     |
| SPP         | 43 %   | 60 %                                     |
| SI          | 29 %   | 28 %                                     |
| SE          | 39 %   | 52 %                                     |
| Indexical-R | 3 %  | 3 %                                      |
| Indexical-T | 2 %  | 2 %                                      |
| SCT*        | *0 %   | 1 %                                      |
| Skip Person | 7 %  | 7 %                                      |
| Skip Topic  | 6 %  | 7 %                                      |
| Standalone  | 14 %   | 1 %                                      |

Fourth, another new sequence is initiated at line 23, with a greeting from delegate, Elspeth (“Good mornng [sic] from the UK,”), as well as a piece of information about the time of day (“6 am here”). While Elspeth does not convey a stance towards the time, the next new delegate (who is also a speaker) makes an explicitly negative though ironic assessment of the time of day. First, Zak posts “bleeeeeeeeeerghhh.”, as well as “what time of day is THIS??”. The latter provides a clear example of how a question can be a vehicle for different actions, in this case, an ironic complaint about the time of day. We do not know whether this is responsive to Elspeth’s post, though, since we do not know for how long Zak has been writing his message - it might have been before Elspeth posted hers. Since Zak has joined the conference at the right time, they are likely to know what time it is; he is asking a known-answer question to do something else. As such, the question does not require the provision of information-based answer. However, it receives one, from another delegate, Robert (“just after midnight”). By adding “ZAK” at the end of his response, in capital letters, Robert matches Zak’s ironic stance (line 25). We might also note that, as a speaker, as well as a delegate, Zak is more entitled to produce ironic assessments (and it is a safe action for him) than a delegate who is new and unknown to the organization and events team.

Fifth, note that Zak, having received a reply to his question from Robert, now greets him (“Hey Robert!”, line 28). Robert’s reply to Zak is, therefore, also a way of announcing his presence at the event. Their relationship as already-acquainted persons is displayed in this sequence of turns, from Robert’s dead-pan/ironic response to Zak, and now Zak’s informal greeting. The fact that this greeting occurs after the two have already established intersubjectivity shows the interactional imperative to nevertheless include a greeting token in a new conversation. Interspersed Robert and Zak’s chat is a new message from another delegate, Olivia, praising the team for an initiative called “Skin Deep” (lines 26–27). Its placement does not disrupt the sequence between Robert and Zak, which is one of the affordances of chat in online conferences. But note that Zak writes, “Hey Robert!” and not just “hey”, in order to ensure there is no ambiguity with regards to who Zak is greeting. This compares to other greeting messages posted by other delegates (e.g., “in! Hello everyone!” at line 36).

Finally, note that Olivia’s post about the Skin Deep project is expanded upon across several subsequent posts, embedded in different actions. For instance, team member Jen posts information about the project website (lines 29–30); speaker and team member Jilly expresses her pleasure in participating in it, positively evaluates it, and invites others to “get involved” (line 33); a series of positive evaluations follow from multiple other delegates (lines 34–35; 38–39; 40–41; 45). These evaluations are posted in aggregate with delegates also producing greetings (lines 36, 37), as well as other actions such as connecting back to previous messages (“Wake up Zak”, line 45). At the end of the extract, another speaker/team member announces that she will be “keeping an eye on the chat here” and inviting delegates to “please let me know any questions you’d like me to put to Jim, Oliver, and Harriet” (the upcoming speakers).

Thus, in these opening lines of chat, we see examples of how different categories of participant use the function, the range of actions that their messages accomplish, the way participants ensure that their messages are understandable as responsive or otherwise connected to a previous message, and how sequences of actions can emerge in response to an initiating one (e.g., Skin Deep).

We next examine the connection between the stage and the chat more directly. A key component of remote conferencing is not just participant engagement with each other in the chat, but whether we can identify engagement with, and ‘learning’ from, what is actually presented ‘on stage’. [Extract 2](#), split across a series of segments to increase readability, provides an example of the sorts of parallel chat messages that appear in relation to, or in the context of, what is happening on the Main Stage. For this purpose, we focused on one presentation, which lasted 15 min in total. We cannot make a perfect connection between the timings of words uttered on stage and time a chat message appeared, since we do not have screen recordings of the event. We have deleted some of the Main Stage content but preserved its content sufficient to show how what was said is connected to what appeared in the chat. In the extract, we include a verbatim transcript of the on-stage performance, then the participant (T – conference organizer/event team member or D – delegate), and then the content of their chat message. We have also highlighted instances where there is evidence of a direct association between what was said on ‘Main Stage’ and the chat occurs.

#### Extract 2. Main Stage content and related chat.

|    |  |   |                  |
|----|--|---|------------------|
| 01 | “Good morning, afternoon, evening wherever you are.      | T | It wouldn’t be a |
| 02 | Six years ago in 2014, I had a career shaping            |   | DFTB             |
| 03 | moment...”   |   | conference       |
| 04 |  |   | without NAME     |
| 05 | “...So he was transferred to our new ‘Hospital at        | T | What a fantastic |
| 06 | Home’ services and cared for by our amazing team of      |   | service -        |
| 07 | nurses. Now, at that time, home for this little baby was |   | community        |
| 08 | a local fairground - where he was living with his        |   | nurses           |
| 09 | community and his family. That’s where they were         |   | delivering       |
| 10 | temporarily living and working...”                       |   | hospital at home |
| 11 |  |   | care in a        |
| 12 |  |   | fairground       |

The presentation opens with the speaker greeting the audience, orienting to the different time zones they are participating from, before launching a narrative (“Six years ago...”). The first chat comment, like [Extract 1](#), comes from a team member, who ascribes the speaker ‘in-group’ membership to the DFTB community (“It wouldn’t be a DFTB conference without NAME”), thus conveying to the audience, and especially those unaware, of the centrality of this particular speaker to it.

An example of how what happens on stage may show its impact on participants, as evidenced in the chat, comes between lines 04–10, in which an event member formulates what the speaker is saying, using some of the same words about “hospital at home” and the example of services at a “fairground” – as well as evaluating the service that the speaker is describing (“What a fantastic service”).

This evaluation aligns with the speaker's own evaluation of the "amazing team of nurses".

As the presentation unfolds, we see further evidence of the way participants formulate what is being delivered on stage, as well as challenge and build upon it.

|    |  |   |                   |
|----|--|---|-------------------|
| 13 | "...Now when I think about this baby and his family,       | T | So many lessons   |
| 14 | there's a lot of things that strike me about that episode  |   | to be learned     |
| 15 | of care. Here in the United Kingdom, we frequently         |   | from this model   |
| 16 | refer to the travelling community as 'hard to reach' or    |   | - putting the     |
| 17 | 'inaccessible to healthcare'. And yet, this baby and his   |   | patient and their |
| 18 | family had a diametrically opposed experience. It          |   | family at the     |
| 19 | caused me to think about what we talk about when we        |   | centre with       |
| 20 | consider patient-centered care. And usually what we        |   | flexible          |
| 21 | mean is that we put a patient and their family at the      |   | boundaries        |
| 22 | heart of our really rigid systems of care, with the        |   | around the limits |
| 23 | expectation that they are going to conform. And it         |   | of care.          |
| 24 | made me think what would it look like if we put the        | D | NAME we need      |
| 25 | patient and their family at the centre, and we put very    |   | to find a way to  |
| 26 | flexible boundaries around what we deliver in terms of     |   | spread dftb in    |
| 27 | healthcare. And perhaps bend our rules, when our           |   | South Africa      |
| 28 | rules aren't serving them..."                              |   | (and Africa as a  |
| 29 |  |   | whole)            |
| 30 |  | D | Agreed! :)        |
| 31 |  | D | ^^ Preach.        |
| 32 |  | D | i would rather    |
| 33 | Because surely if we can create that meets the need of     |   | say that our      |
| 34 | those referred to as 'hard to reach', then that's the best |   | systems are       |
| 35 | situation for absolutely everybody. When I come to         |   | 'hard to          |
| 36 | think of this situation, I think of it in 3 overarching    |   | penetrate'        |
| 37 | themes: people, perspective and the place. So I'd like     | D | Maybe WE          |
| 38 | to share with you the framework I've used since then       |   | ARE hard to       |
| 39 | when considering designing healthcare and pathways         |   | reach, not our    |
| 40 | for children and young people."                            |   | patients          |

Note the way the conference organizer/event team member again uses the speaker's words to formulate a positive assessment of what is being delivered on stage, and, in so doing, packages 'the essence' of the presentation, all prefaced by and as "lessons to be learned", thus conveying directly that this is 'a learning moment' in the conference. Interestingly, the next comment, from a delegate, is an endorsement of DFTB as an organization. It is impossible to know who the intended recipients are of the next two delegate comments, since they may be agreeing with the speaker, the event organizer, or the previous delegate's comment. These issues tend to be unambiguous in spoken interaction, and, if not, generate 'repair' operations, in which addressee and reciprocity matters may temporarily suspend the progress of the sequence until resolved (e.g., Fox et al., 2013). However, here, any ambiguity is not oriented to by other participants.

The next two comments again illustrate the range of ways in which delegates may use the chat.

|    |   |   |                  |
|----|---|---|------------------|
| 41 | I've recently been reading about this organisation in       | D | No conversa-     |
| 42 | the Netherlands, where they have a really pure form of      |   | tion about me,   |
| 43 | this patient engagement and involvement. One of their       |   | without          |
| 44 | underlying tenets is this principle of 'no conversation     |   | me...awe-some!   |
| 45 | about me, without me' so they do not have any               |   |                  |
| 46 | conversations about their clients without their clients     | D | I suspect we     |
| 47 | being present. That really challenged me to think of        |   | would be very    |
| 48 | what I do in my practice, what would all of our             |   | different if our |
| 49 | multidisciplinary team meetings look like if our            |   | patients and     |
| 50 | patients were present. How would the conversation           |   | their families   |
| 51 | change? Would we be more compassionate? Would               |   | were in the      |
| 52 | we be more empathetic? It's really challenged me and        |   | room.            |
| 53 | it's something that I seek to utilise in clinical treatment |   | Something to     |
| 54 | going forwards."  |   | aspire to.       |

At lines 41–45, a delegate formulates the upshot of what the speaker is saying, and both speaker and delegate apparently reformulate the original expression "Nothing about us without us", which, while having a centuries-old history in European politics, was first used in English in the context of disability rights activism (Charlton, 2000). As the speaker extends the theme of their talk towards medical practice, another delegate responds to the challenge articulated as a question by the speaker (line 49) with their own answer (lines 50–55).

In the final segment, we join the session as it comes to the end.

58 "...Having all of these thoughts and embedding into  
59 our practice, really are going to be the way we shape  
60 and make clinical services which will eventually start  
61 to erode and destroy the marked disparities and  
62 inequalities and access to healthcare and healthcare  
63 outcomes which we see. Lastly, when we consider  
64 "place", the place I consider is home. Throughout my  
65 clinical practice, there's two questions that families  
66 constantly ask, the first is "what's wrong with my  
67 child?", and once they've established that, the next  
68 question is typically "when can we go home?" I think  
69 across the board, given the choice between a hospital  
70 bed and their own bed at home, children and families  
71 will always opt for their own bed at home. So  
72 essentially as healthcare professionals, what we're  
73 doing is accompanying them on this journey to make  
74 sure that they get well, so that they can safely get back  
75 to their place that they call home. And this is  
76 something I have thought of deeply in terms of  
77 shaping services and bringing us back to the  
78 conversation starting in the beginning: the ultimate  
79 example of that is get acute clinical care which is  
80 delivered within the home- takes us back to the baby  
81 who had his care at home. And it's been delightful to  
82 see over the years, a global spread of acute "Hospital  
83 at Home" services, with amazing examples  
84 everywhere from Malaysia to Melbourne. And  
85 particularly, during this time of a pandemic, where  
86 coming to hospital has been not only a source of stress  
87 for families, but actually a source of deep abiding fear.  
88 It has been great to see families that we can care for  
89 using "Hospital at Home" services and allay that  
90 anxiety as they return to health. And overall, it really  
91 comes down to that old saying, it truly is "there is no  
92 place like home". Thank you.

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111

D thanks great  
insight NAME,  
agreed a greater  
awareness of the  
common  
cultural  
intricacies of the  
communities  
present where  
we work is  
imperative to  
help reach all

D fantastic talk  
NAME, thanks  
for sharing your  
expertise

D great talk

T Fabulous  
NAME, well  
done

T Please post your  
questions for the  
speakers panel  
in the chat here  
:)

D Wonderful!

D great talk

D Thanks NAME,  
fantastic.

T Thanks - agree.  
having patients  
involved so  
important,  
Rheumatology  
has this fabulous  
research  
conference  
called  
OMERACT  
where patients  
are involved at  
every step.  
Really changes  
things for the  
better.

D great talk and  
fantastic  
program

Note that the comments segue into multiple appreciations of the speaker, as well as of the event itself. At lines 93–108, a conference organizer/event team member, having expressed an appreciation of the speaker (line 80), expands the relevance of the Main Stage to another conference. At 109–111, a delegate both positively assesses the talk (“great talk”) and expands and upgrades their assessment to the wider event (“fantastic program”).

Together, the extracts reveal the importance of analysing as much of an event as possible before drawing conclusions about engagement and participation. Format matters: since the event was not structured to permit direct questions from “floor” to “speaker”, there were fewer questions and no expectation that speakers will reply. Some messages that look standalone or unconnected to other messages are, in fact, directly connected to what the speaker is saying on the stage. In that sense, some turns, when viewed in the context of the chat, but not in the context of the stage content, were not sent into the ether but were responsive to something on the Main Stage. However, it was noticeable that such responsive actions did not always generate further chat between delegates. Similarly, some actions were clearly responsive to the Main Stage activity (e.g., appreciations and assessments) but it was not always clear whether a series of appreciations were all responsive to the speaker, or to other message writers and therefore agreements as well as assessments. The qualitative analysis also shows some examples of the impact of the event (e.g., lessons learned, future-oriented messages), as well as plenty of examples of delegates engaging with and confirming, challenging, or reformulating, or building

upon what speakers said.

Extracts 1 and 2 also show us how participants co-constitute themselves as an audience, collaboratively engaging with each other and the event itself. We explore this further in the final extract, which contains chat from towards the end of the conference. The temporal location of the chat is evident from the opening assessment from a speaker/team member who formulates an assessment of the day.

**Extract 3.** Conference closing. (14:47:38–14:57:24 UTC).

|    |            |   |
|----|------------|---|
| 01 | ST Jenn:   | It's been an emotional day  |
| 02 | D Fabio:   | I am... a lover of the amazing perspectives                             |
| 03 |            | and insight of this very special person!                                |
| 04 |            | We need this talk to be played each and                                 |
| 05 |            | every day!  |
| 06 | ST Jenn:   | And yet another emotional talk for the end                              |
| 07 |            | of the day - I'm welling up again                                       |
| 08 | D Sandra:  | <a href="https://self-compassion.org/">https://self-compassion.org/</a> |
| 09 | ST Jilly:  | I'm in pieces here  |
| 10 | T Jen:     | I needed to hear this   |
| 11 | D Sandra:  | Read Kristin Kneff to explore this more                                 |
| 12 | D Bil:     | We all did!   |
| 13 | ST Jilly:  | I think we probably all did   |
| 14 | D Charl:   | Jen I think most of us do   |
| 15 | D Cath:    | Brilliant.  |
| 16 | D Pippa:   | Awesome   |
| 17 | D Ibbie:   | how has he managed to look straight into my                             |
| 18 |            | mind?   |
| 19 | D Sandra:  | Because these are very universal patterns of                            |
| 20 |            | cognitive and emotional thinking. We are                                |
| 21 |            | not alone in thinking this way  |
| 22 | D Lara:    | Thank you, not a dry eye in this  |
| 23 |            | virtual room  |
| 24 | D Em:      | Possibly even better than   |
| 25 |            | last year - tears here!   |
| 26 | D Cath:    | This is way better than that Chris Hemsworth                            |
| 27 |            | clip that's been going around lately!!                                  |
| 28 |            | Thank you. Legend.  |
| 29 | D Vic:     | You are always fab to listen to.  |
| 30 | D Caitlin: | Thank goodness we're not all  |
| 31 |            | in one room.  |
| 32 |            | So much nose-blowing couldn't be covid-safe                             |
| 33 | D Prisha:  | Need to put that talk on repeat on my playlist                          |
| 34 | D Tracy:   | Thank you for being you and helping others                              |
| 35 |            | finding themselves! Big Hug!!   |
| 36 | ST Jenn:   | This one is for the car journey to work each                            |
| 37 |            | morning. Thank you so much.   |
| 38 | D Hilda:   | Listening and reading the chat, it is so                                |
| 39 |            | comforting to know I am not alone - so                                  |
| 40 |            | reflective of my thoughts   |
| 41 | D Bethan:  | Absolutely, well said!  |
| 42 | D Sally:   | I need that as a pep talk every day of my life                          |
| 43 | D Prisha:  | Thanks. Beautiful words!  |

At lines 01 and 06, speaker/team member Jenn posts two messages that both initiate the closing of the event while also assessing it (“It’s been an emotional day”; “And yet another emotional talk for the end of the day”). The emotional stances of the posts are continued across the sequence initiated by Jenn, with many delegates combining multiple actions of appreciation (of the speaker and the event) and assessment. Within the series of messages are standalone posts (e.g., a recommendation to read another author, line 11) questions (e.g., “how has he managed to look straight into my mind?”, line 18) which receive responses (“because...”, line 19); orientation to the emotion being expressed by the audience as a collective (e.g., lines 12, 22, 31) and thus as such constructing the delegates as a group, while at the same time posting about individual impacts (e.g., like 42, “I need that as a pep talk every day of my life”). Note also the way in which individual assessments are responded to and generalized to the collective “we”: delegate Bil generalizes from Jen’s “I needed to hear this” (line 10) to “We all did!!” (line 11); speaker/team member Jilly also says, “I think we probably all did” (line 13). At line 14, a delegate explicitly ties a further message of agreement to Jen’s: “Jen I think most of us do” (line 14). It is clear from [Extract 3](#) that the participants’ messages are responsive to what has happened on stage; their engagement is evident.

#### 4. Discussion

The aim of this paper was to examine ‘what actually happens’ in the parallel chat in video-conferencing events. We wanted to know what sorts of research questions could be addressed by a dataset comprising a large corpus of written chat messages sent during a live conference event. In particular, we aimed to go beyond counting message numbers and unitary action types (i.e., questions) by also providing insights into what conference participants are doing – their activities and interactions – as they constitute being an audience



together.

As well as reporting headline descriptive statistics about the proportion of delegates who wrote chat messages (in terms of delegates, speaker, and event organizers – and gender), we used conversation analytic methods to code messages for the sometimes-multiple actions they conveyed and the sequences in which they appeared. This provided the basis for a conversation-analytic coding scheme which we applied across the dataset, to specify what messages were doing and how much they connected to other messages – and, therefore, other participants.

Regarding the first two research questions, asking who participates in the online conference chat and what do they chat about (in terms of topic area), we found that 23 % of the total conference attendance participated in the chat. We noted that this was higher than other reports, but it leads to interesting questions about the nature of ‘participation’ and what kinds of metrics, behavior, or phenomena indicate its presence or absence. Given that 77 % of delegates made no written contribution, it would be useful to explore what constitutes indirect indicators of participation and engagement. We found that delegates posted more messages than speakers or event organizers, but also that one event organizer accounted for the most contributions in the chat, totalling 58 posts. We also showed that the overwhelming majority of messages were written by female-named authors (76 %), which is markedly different to findings reported in the Introduction. We reported these gender statistics because they feature recurrently in other research and were available in our dataset. However, it is a limitation of the post-hoc nature of this research that we had no access to delegate characteristics beyond basic information, often deduced by names. Therefore, we are very cautious about interpreting these data. Delegates discussed topics such as working from home, Covid-19, future events and participation itself, while event organizers focused more on technology and the schedule (cf. [Huang, 2022](#)).

Our two other research questions sought to interrogate the chat data in conversation analytic terms, asking what kinds of actions – and sequences of actions – comprise live, unfolding chat interactions, and how the chat connects to what speakers say on the ‘Main Stage’. By asking and answering these questions, the paper contributes something new to the broader field of research on online participation, since, to the best of our knowledge, previous research has focused on these more complex layers of interaction. We found that, in terms of actions, most parallel chat messages were assessments (e.g., “wonderful!”) and appreciations (“Thank you!”). While all participants made statements (e.g., “This is where all our talks will be running”), this action was more common for the event organizers and speakers. Delegates asked more questions than event organizers and speakers, and the latter gave more answers than the former. Overall, it was clear that questions were far less common than assessments and appreciations in terms of actions done by delegates. In terms of the connectedness of messages across sequences, we found that a higher proportion of messages comprised responses to initiations than initiations themselves. We argue that indicates engagement, since once a ‘first’ message was posted, multiple delegates responded to them, rather than left them as ‘standalone.’ Regarding the connection between the chat and what speakers were saying on the ‘Main Stage’, our analysis revealed the benefit of taking a fine-grained approach since it showed not just how participants engaged with each other, but also their ‘learning.’ For example, we showed how both event organizers and delegates formulated what speakers said and went on to further interpret and develop them.

One implication of our research is that limiting the analysis of conference chat to questions alone may not come close to describing the kinds of participation that actually occurs in such settings. The fact that (positive) assessments and appreciations were the most common actions is unsurprising, given that these actions occurred on numerous occasions and for each speaker (compared to, say, greetings, which clustered once towards the start of the event). Furthermore, by analysing the connection between the speaker performance and the parallel chat, exemplified in [Extract 2](#), we were able to show how delegates engaged directly with conference content, formulated and built upon its content, and generalized to other settings: actions that perhaps comprise ‘learning’ (see [Sahlström, 2009](#)).

Technologies enable but also constrain interaction ([Hutchby, 2014](#)). For instance, some video-conferencing platforms allow participants to engage in private messaging, some only allow public chat, and some do not allow the participants to engage at all. The platform used by the organizers of the conference we studied included particular affordances – participants could all write parallel chat messages, for instance, and see each other’s names – but could not message privately or to speakers directly. Of course, they may have been using other messaging applications at the same time. The affordances of the chat function – whatever the platform – will always be relevant to research of this kind, though not necessarily easy to access. Future research may compare multiple platforms and software types as well as event and conference types (e.g., in which delegates can ask speakers questions, either via un-muting and posing directly or in the chat). We hope that this paper has provided a possible framework for analysing and evaluating the parallel chat that occurs in video conferencing events, which specifies some of the composite actions that comprise engagement and participation.

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## CRedit authorship contribution statement

**Elizabeth Stokoe:** Conceptualization, Formal analysis, Methodology, Project administration, Writing – original draft, Writing – review & editing. **Jessica Win See Wong:** Data curation, Formal analysis, Methodology, Writing – original draft, Writing – review & editing. **Jessica Pedersen Belisle Hansen:** Methodology, Writing – original draft, Writing – review & editing. **Damian Roland:** Conceptualization, Project administration, Writing – original draft, Writing – review & editing. **Tessa Davis:** Methodology, Project administration, Writing – original draft, Writing – review & editing.

## Declaration of competing interest

None.

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