

A "CENTRAL" PERSPECTIVE OF WORKPLACE MEETINGS: EXAMINING THE VIDEO-ENHANCED MEETING MANAGEMENT AND BEHAVIOUR (VMMB) METHOD

In the construction industry, meetings consume vast amounts of time. Increased knowledge is required of meeting management and behaviour. Previous studies of live meetings have relied on quantitative models, field notes, audio recordings, or video recordings from a single angle, but with limited success. Video-based research is relatively new to the field of organisational studies. The Video-enhanced Meeting Management and Behaviour (VMMB) method offers a new approach to questioning established everyday phenomena. This study examines how a new "central" view of meetings can be captured using a 360° video by reflecting on a project that recorded seventeen meetings. The nature of the 360° video data simultaneously captured the visual, verbal and non-verbal information. It allowed repeated observations of the data, allowing for a rich understanding of the setting. A review of the theoretical considerations of using video is provided. The study contributes to a greater understanding of video-based research, specifically from a "central" position. The knowledge can be generalised to video-based research in the construction industry and other organisational settings.

Keywords - Behaviour, Meetings, Teams, Video-based research.

BACKGROUND AND RATIONALE OF THE STUDY

Meetings consume vast amounts of individual and organisational time in the construction sector. They are also expensive when weighed against each participant's salary. According to Mehrbod et al. (2019), design coordination meetings cost \$8,000 - \$23,000 per meeting. Although evidence suggests that meetings can be a waste of time and often a negative experience for employees, there are also data to suggest that meetings can be a positive experience when productive and meaningful (Oroszi, 2020). This knowledge provides hope that we can truly solve the meeting problem, even in the construction industry, where projects are highly complex, with the need for a wide variety of stakeholders to collaborate effectively while working under demanding time pressure.

According to Allan and Lehmann-Willenbrock (2022), meetings are essential to accomplish coordination, sensemaking, and strategy. They perform as the intersection of collaboration for construction projects and organisations. Despite meetings being time-consuming, expensive and an everyday occurrence, how meetings are managed, and people's behaviour during meetings are generally not trained or strategically managed. As a result, any best practice that does occur in some situations is not necessarily replicated more broadly. Furthermore, the management of and behaviour during meetings are rarely reflected on for continuous improvement. If managed effectively, Allan and Lehmann-Willenbrock state that meetings can substantially

enhance the organisational life of individuals by providing a safe and fulfilling venue for belonging, professional development, and the opportunity to be part of a great team.

A method is required that provides teams and organisations with the opportunity to carefully examine and reflect on authentic behaviour during live team interactions to provide the necessary knowledge, understanding and suggestions for best practices. During similar studies to the author's research project that have observed live construction and design team meetings (for example, see Gorse and Emmitt, 2007; Mehrbod et al., 2018; Kiernan, Ledwith and Lynch, 2019), an issue has been how to capture the maximum amount of data, while still gaining consent to access the setting. Earlier studies relied on the use of field notes only (see Gorse et al., 2006), audio recordings (see Kiernan, Ledwith and Lynch, 2019) or video recordings (see Mehrbod et al., 2018). The video recordings method used by Mehrbod et al. captured more information during the meetings compared to field notes and audio recordings. However, the meetings took place in a mock-up room, and the video footage only captured one perspective of the room, with a number of the participants sitting with their backs to the camera.

The proposed Video-enhanced Meeting Management and Behaviour (VMMB) method aims to provide a means to capture behaviour during meetings to allow it to be analysed in detail and to provide the opportunity for bespoke and generalisable team and organisational learning and best practices. Ways of working can be transformed by reflecting on and challenging everyday behaviour during meetings.

Before a summary of the research is presented, theoretical considerations of video-based research will be discussed.

VIDEO-BASED RESEARCH IN THE SOCIAL SCIENCES

According to LeBaron et al. (2018), video-based research is relatively new to the field of organisational studies. They warn that video involves both opportunities and problems for the researcher. They argue that researchers should only use video methods if this is appropriate to the research question, scope of research, and epistemological and ontological orientation of the study. For example, a video-based method would be appropriate during research about behaviour (dynamic process) and face-to-face engagement (audio-visual). Furthermore, a video-based approach can be used with other exploratory methods, such as ethnographic research (Zickar and Carter, 2010) and case studies (Yin, 2014), and to supplement other data collected, such as field notes. LeBaron et al. (2018) stress that one of the key benefits of video data is creating a permanent, digital record that multiple researchers can observe multiple times. However, the sheer volume of rich data captured can create the problem of what to focus on. The authors urge researchers to avoid analysing everything and focus on the vital data relevant to the research question and findings.

Pratt and Kim (2012) discuss the benefit of using video during an ethnographic study to capture organisational group behaviour over a prolonged period to allow iterative reflection. According to Forsyth (2009), people are increasingly comfortable being filmed while completing everyday activities, which increases the likelihood of gaining access and participants behaving naturally. Christianson (2016) considers the important and, in her opinion, rarely discussed decision of camera placement, which she urges should be thoughtful and deliberate. The two most popular perspectives of camera placement are the "insider" and the "outsider" view. LeBaron et al. (2018)

suggest an insider perspective might include positioning the camera to capture the perspective of someone sitting at the conference room table. Hindmarsh and Llewellyn (2016) demonstrate an "outsider" perspective by mounting the camera on the wall to observe activities at a museum. However, these camera positions only record the action directly in front of the camera. Therefore, capturing the full array of group behaviour of a group of people is challenging without multiple cameras facing in multiple directions. According to LeBaron et al. (2018), the most popular video-based research approach is the "outsider" camera placement option during organisational studies to observe people at work. Less "insider" research may reflect the problem of access often experienced by researchers. LeBaron et al. discuss how researchers are often denied access due to concerns by the organisation or participants regarding access to sensitive information and the permanent nature of video creating a record of events that might 'catch someone in the act'. Table 1 summarises some theoretical considerations when selecting video as a data collection method.

Table 1: Theoretical considerations when selecting video as a data collection method

Theoretical considerations	Description	Relevant literature
Multimodality	More than one mode is observed simultaneously. For example, a focus on language (audio) <i>and</i> embodied interactions (visual).	Heath, Hindmarsh and Luff (2018)
Embodiment	The human body is part of the study. Individually and in relation to other people.	Liu and Maitlis (2014)
Materiality	The embodied interactions with the material and technological environment.	Luff, Hindmarsh and Heath (2000)
Sequence	The sequential organisation of audible and visible phenomena.	LeBaron <i>et al.</i> (2018)

Multimodality is a crucial benefit of video data compared to other methods, such as audio-only, because video captures the complex modalities that orchestrate human behaviour, such as talk, text, gestures and facial expressions, and the physicality of the location. The capturing of embodied data is also a benefit of video to record spatial manoeuvres that participants are consciously unaware of (Liu and Maitlis, 2014). Interactions between participants and materials or technologies are also important in contemporary organisational life. How participants interact with artefacts and technologies can be studied once the behaviour is captured on video. Finally, the sequence captured on video is an essential aspect of observing behaviour. What people say and how they behave directly relate to the sequence and order of the interactions. By its nature, video captures the complexity of interaction sequences (who spoke first, who spoke second). By capturing the sequence of events, an understanding of the impact of behaviour over time can be achieved.

In sum, video data provides many advantages to capturing and repeatedly revisiting meeting management and behaviour over traditional collection methods, such as field notes and audio recordings. However, important issues need to be addressed, including whether the video data would benefit from complimentary data (e.g. interviews), appropriate research questions to remove the need to analyse too much volume of data, access to the setting, and the location of the camera placement. However, when these issues are successfully managed, video data provides rich multimodality, embodiment, materiality and sequence information. A next step in video-based literature is discovering a video-based method that utilises a camera that captures the maximum amount of studied behaviour in a central position while being discrete enough not to alter the participants' behaviour or limit access to the setting.

ESTABLISHING THE VIDEO-ENHANCED MEETING MANAGEMENT AND BEHAVIOUR (VMMB) METHOD

Summary of the research project

The following summary describes the research project in which the VMMB method was created. The research aimed to investigate the impact of social interaction on decision-making in construction project design meetings. The research questions included reconsidering how episodes of social interaction are understood (by academics and practitioners) and the impact they might have on group interactions during meetings.

The first stage of conducting the research involved a review of the relevant literature about project work teams, specifically in the construction industry. The review provides a theoretical background of knowledge and theory pertinent to examining social interactions in this setting. As a result, considering the nature of the subject and the available data collection methods, an interpretivist, qualitative, longitudinal, video ethnography observational approach was adopted. This approach allows the data collection to capture the dynamic social relationships across time and in a natural, 'live' work environment to provide an authentic construct of the team's social interaction themes. The observations focused on the social interaction behaviour, including verbal and non-verbal exchanges and reactions between the meeting participants. The social interactions included behaviour that reflects the relationships in the group.

Seventeen contractor-led design meetings (CIDMs) were observed across three case study projects, creating thirty-four hours of video footage. CIDMs of construction design and build procured projects were video captured and observed during the early design phase. The meetings were observed to consider the social dynamics during the forming stage of team development (Tuckman and Jensen, 1977), such as establishing group norms, socialisation, creating social cohesion, and managing intragroup conflict. The first step in collecting the research data was gaining access to an organisational setting. Marshall (2007) discusses the benefits of observing design work teams in their everyday environment, as authentic situated practice can allow for natural dynamics to emerge. A regional manager (the gatekeeper) of a large, national main contractor known to the researcher was approached. He organised access to a number of ongoing local projects. It should be noted that access to video record meetings can be problematic. However, in this instance, the researcher drew upon her industry network. The initial plan was to record the meetings via an audio recorder only. However, this method included too many limitations during the pilot study to fulfil the research questions. For example, identifying the speaker from about ten participants, capturing non-verbal data (facial expressions and body language) and other physical elements (using technologies and paper-based documents). An alternative approach, namely, the 360° panoramic video, was successfully trialled, and the primary data for the study was gathered in this way.

The current study adopts a primarily inductive approach to the generation of theory. This approach has allowed the constructs or themes to emerge from the video data without being selected in advance. As a result, an inductive process has created a richer and more authentic representation of the social interaction behaviour constructs of the meeting participants. "Typical" examples of behaviour per theme were subjected to analysis in light of existing knowledge and theory, where the role of the theory followed Schweber's (2015) guidance to help the researcher rein in or move

beyond their own subjective opinions and common-sense views of the data and to see the data differently than without the theory. This process of using existing knowledge and theory to examine the data moves the analysis beyond the state of researcher reflexivity to something that combines this reflexivity with objective evidence.

Video recording of the meetings

The researcher attended all the meetings as a non-participating observer. The video ethnography form of data collection allowed the natural team dynamics of the meetings to be observed in their setting (Deanzin, 2017). According to Paquin, Miles and Kivlighan (2011), observing and recording behaviour is viewed as one of the most objective and direct measurement tools available to assess group behaviour. The field notes of the participant's behaviour supplement the primary data source of the video recordings and provide a perspective of the social interactions in the room, such as emotions and feelings of cohesion and tension. In addition, the meeting minutes recorded and distributed by the design managers also supplement the primary data source to verify conversations and decisions made during the meetings. See Image 1 for a photograph of the recording device (a highlighter pen is added for scale).

Image 1 - 360 ° video camera



As illustrated by Image 1, the video camera is small, easy to transport, and discrete. Some participants commented that they forgot they were being filmed because the video camera was unobtrusive. The use of a small, single video can be contrasted with the alternative approaches of video filming, for example, having two cameras with different angles or roaming cameras that would be more obtrusive. In this study, the video camera was positioned in the centre of the meeting room table during all the meetings. Facial expressions of participants sitting behind a laptop were captured by raising the video camera six inches off the table. Existing literature (see LeBaron et al., 2018) discusses the importance of carefully considering the position of the video, with the majority of researchers adopting either an "outsider" or an "insider" perspective. However, both these approaches inherently create limitations, such as being able to see the actions and interactions of all participants simultaneously at all times. The current research project offers a new "central" perspective, where the activities are occurring around the video while the video simultaneously captures the action from all directions. No other similar research has taken place that adopts the "central" perspective of team behaviour during meetings. As a result, a current gap in knowledge exists that considers this form of technology's possible applications and considerations during organisational (and educational) research. Table 2 summarises the advantages the researcher found using the 360° panoramic video recording rather than audio recording only to capture team behaviour.

Table 2: Advantages of the 360° video camera, rather than audio recording only

Advantages of capturing 360° panoramic recording footage rather than audio recordings of the meetings
To identify the speaker during a conversation.
To identify who the speaker is addressing and who is engaging/who is not engaging, simultaneously.
To identify 'in-group' and 'out-group' reactions and responses.
To observe the use of virtual attendance, for example, skype attendance and the reactions of all participants in the room.
To observe the use of telephone only attendance and the reactions of all participants in the room.
To observe body language and the participant's reactions to it.
To observe to use of tools and artefacts.
To observe the behaviour of those not participating in the discussion. To see what participants were doing and the reaction of others in the room.
To identify where people position themselves around the table to see who sits with whom.
To observe the effects of a meeting room that may be too small, too large, too cold, too warm.
To observe the effect of people joining the meeting late, taking phone calls, leaving the room during the meeting.
The ability to take screenshots at any point in the meeting to support the presentation of the data.

In sum, the 360° panoramic video simultaneously captured the visual, verbal and non-verbal information during the meetings. It allowed repeated observations of the data, allowing for a rich understanding of the setting. However, using the video also created issues that would not have occurred if an audio recorder had been used to collect the primary data. See Table 3 for a summary of the issues the 360° panoramic video created during the study.

Table 3: Issues encountered using the 360° video camera

Issues encountered using the camera
A researcher needed to attend the meeting to operate the camera.
The camera cost approximately £300 — considerably more expensive than an audio recorder.
The camera battery ran out quickly unless the quality of the recordings was reduced, and the camera was connected to a power supply throughout the meetings.
The camera overheated after about two and a half hours.
The camera is operated via a mobile phone. Unfortunately, the camera quickly drained the battery of the phone. Therefore, the phone needed to be connected to a power supply throughout the meetings.
The video footage is difficult to anonymise.

Using a 360° panoramic video in a "central" position is a new approach in team, meeting, organisational, and construction-specific research. The current study aims to provide new knowledge in this data collection method. Gorse and Emmitt (2007, p. 1198) acknowledge the limitations at the time of in-person observations during a similar study, "observing all communication stimuli would prove impossible, so verbal observations were limited to verbal interactions, while at the same time recognising that body language and facial expressions provided important information in helping to understand the meaning of the verbal messages". The 360° panoramic video allows for a far more comprehensive capture of group social interactions than has previously been possible.

Structuring the data

The first step in structuring the data was to reflect on the field notes, which noted trends and patterns in behaviour during the meetings. From these trends and patterns, preliminary themes were identified. These themes included social cohesion, intragroup conflict, group norms, decision-making, interdisciplinary working, and the

physicality of the meeting room. These themes became the starting point of structuring the thirty-four hours of video footage. Next, the video data was iteratively observed to identify specific social interaction events. When the participants displayed any behaviour that either matched one of the social interaction themes or was a new theme, the time on the video was noted, and a code name was created. This iterative process continued until the researcher identified no other new patterns of behaviour or sub-themes. Thus, 329 social interaction events were identified.

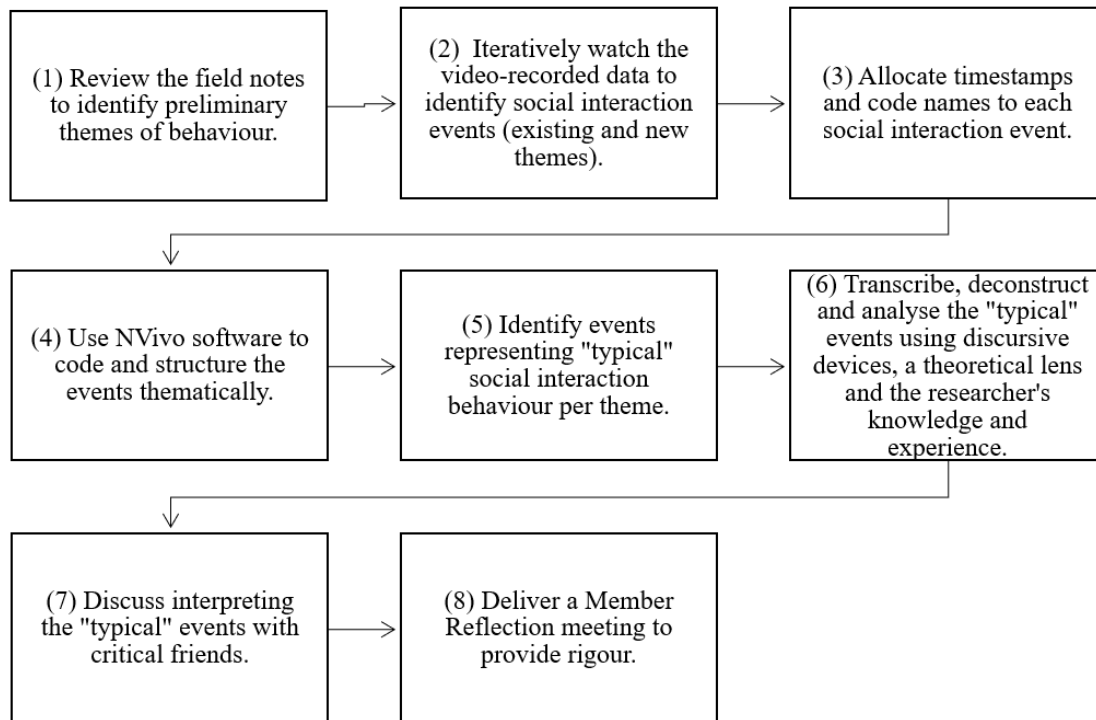
Next, NVivo software was utilised to create a thematic analysis by organising and structuring the 329 social interaction events. The researcher watched the video recording of each social interaction again and thematically coded each one. Inductively coding the events allow themes to emerge. Themes were identified by observing repetition or patterns in the group behaviour. The two dominant parent nodes or themes of social cohesion and intragroup conflict emerged from the data. These themes became the primary themes of the study. It should be noted that the thematic analysis in the current study is a tool to identify trends and patterns in behaviour. It is not a tool to carry out a quantitative analysis of the primary data. Instead, a detailed conversation analysis took place of typical conversation extracts initially identified as social interaction events through a thematically structured process.

The final step of structuring the social interaction events captured was selecting "typical" events to analyse in detail. To ensure rigour was achieved, the researcher and two peers watched the video recordings of a range of "typical" social interaction events per theme as part of a workshop. Next, they discussed each event and the interpretation the researcher had drawn from it. This process represents the "critical friend" approach (Smith and McGannon, 2018), whereby the interpretation and consideration behind the coding and thematic classification of the events were discussed. Then critical feedback was provided.

Analysing the data

Once the primary data of the video recording social interaction events were structured and the "typical" events selected, the next step was to analyse the "typical" events in detail. This process required a multifaceted approach. Firstly, the conversation extracts were transcribed using the Jeffersonian Lite (Jefferson, 2004) system of transcription notation. Secondly, the typical conversation extracts were deconstructed and analysed using discursive devices (see Wiggins, 2017) to identify specific words and phrases. The discursive devices (taken from social psychology) were adopted to consider the role and function of individual words and phrases to examine the conversation's contribution to the group dynamics. The discursive devices help locate clues in the conversation that the researcher can examine further to help interpret what is going on. Finally, the conversations were analysed using the established theoretical background of knowledge and theory to interpret the team's behaviour. In addition, the researcher's considerable knowledge and experience were also reflected. To provide rigour a "member reflection" meeting took place to ensure rigour to the research findings. The meeting engaged original participants to the CIDMs. The participants were asked to reflect on and provide feedback on the research findings. Figure 1 represents a summary of the VMMB data structuring and analysis process.

Figure 1: Video-enhance Meeting Management and Behaviour (VMMB) data structuring and analysis process model



Presenting the data

Each example of a typical event is presented as a screenshot (blurred to provide anonymity) with a corresponding Jeffersonian Lite transcription. See Figure 2 as an example of an extract demonstrating the typical use of expletives and extreme language. A detailed narrative of the analysis accompanies each extract.

Figure 2 Example of Extract

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1  CDM : we are never going to solve all the builders work in one nice big
2      clean exercise its gonna be like (.) fucking hell we need this
3      this this ((counts on fingers and smiles)) in the next four weeks
4      h h
5  DMEP2 : and that's the priority though
6  CDM : absolutely
  
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A thick description form of presentation is also utilised for communicating the findings from the video footage, the field notes, and the meeting minutes. A thick description provides a rich interpretation and representation of the setting context.

This form of data presentation is commonly adopted in ethnographic research to convey to the reader a sense of being present in the setting. For example, Klitgaard, Svidt and Gottlieb (2020) utilise a thick description of data presentation to communicate a contract manager's practices on a construction site. The thick description represents the author's interpretation of the meeting setting and team behaviour context. The context provides the reader with a view of the setting.

Ethical considerations

The ethical considerations during the data collection process include the following. Although the researcher attended all the meetings in person, the researcher did not speak or participate in any discussions. This behaviour is consistent with the principle of conducting ethnographic practice that avoids distress or disruption to the settings (Murphy and Dingwall, 2007). The researcher acting as a non-participating observer did not artificially influence the behaviour being studied during the meetings. Overall, the behaviour of the participants appeared not to be disrupted. For example, the participants regularly used expletives and joking, which might be inappropriate if the presence of an outsider (or that of the video camera) changed the behaviour to a more formal atmosphere. The researcher was only referred to once during the thirty-four hours of meetings observed. Every effort was made to cause as little disruption as possible during the meetings while allowing the researcher to experience the meetings first-hand. For example, the researcher ensured that she arrived early to the meetings before the other participants arrived.

CONCLUSION

The Video-enhanced Meeting Management and Behaviour (VMMB) method contributes to video-based literature by providing an alternative approach to observing and analysing meeting phenomena. The method creates richer data and findings than previously obtained during similar studies. Although using a 360° panoramic video in the " central " position creates issues that need to be managed, gathering video data in this way can open the doors to a wide variety of possibilities in construction, organisational and educational research. Exploration of the method and use of a 360° video is recommended to consider and realise its capabilities across a vast range of contexts, industries and applications.

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