

Presence in Video Conferencing in Teaching Contexts as a Means for Positioning Subjects

Andreas Weich, Irina Kaldrack, and Philipp Deny

Before the Covid-19 pandemic, video conferencing was rarely used in school or university teaching settings. Lessons generally took place “in person.” As a result of the restrictions on social contact and the closure of schools and universities that have been repeatedly implemented, to varying degrees and with differing scope, since spring 2020, video conferences have become a cornerstone of “Emergency Remote Teaching” (Hodges et al. 2020) and consequently part of the “new normal” in school and university teaching, at least for a certain period of time. One supposition of this paper is that video conferences were initially employed as a media format to reproduce the “presence” of in-classroom teaching in the form of distant teaching.

Notions of copresence can already be found within the concepts that we use to talk about video conferencing: we “attend a meeting” in a “meeting room” or “join a conference.” We experience a kind of simultaneity—at least, when the bandwidth is sufficient and the connection is stable. Educational discourses conceptualized (and in part still do) video conferencing as an attempt to “translate” (Macgilchrist 2020) on-site teaching scenarios and to constitute some kind of “remote presence” as a translation of “physical presence” as this was seen as a cornerstone of successful teaching and learning.

But research on video conferencing and hybrid settings in teaching contexts shows that on-site “physical presence” and the “remote presence” of video conferencing settings do not differ significantly in terms of learning outcomes (Raes 2022). So fears of a lack of cognitive comprehension and missing cognitive learning objectives without being physically copresent seem to be unfounded. However, on-site and video conferencing settings do differ in terms of engagement, with the latter suffering significant drop off (ibid.). Teachers also struggle to “activate” their students (Malewski, Engelmann, and Peppel 2021). On the one hand, this shows that “engagement” and “activation” are relevant categories and objectives in educational research and practice, and that problems in this sense can arise, especially when switching to video conferencing in teaching contexts. The learning subject is supposed to be “engaged” and “activated” and is addressed as such. On the other hand, it shows that when we talk about presence we are predominantly

referring to a specific subject position known and expected from on-site teaching that is difficult to “translate” into video conferencing in teaching contexts.

In this paper, however, we do not aim to further perpetuate this kind of research but rather to take it as another point of departure when deconstructing the notion of physical presence as a precondition for successful learning. We will focus more on media-analytical questions such as: which type of presence is generated by which kind of media constellation, and which kind of subject positions evolve from this process. We will first briefly introduce the concept of media constellations as a heuristic concept enabling us to analyze the elements and relations that constitute those aspects of presence and the expected/desired result, as well as divergent subject positions in in-classroom and video conferencing situations in school and university teaching. We will then outline a number of semantic layers included in the term presence, its connections to media history, and how presence can be linked to the heuristics of media constellations. In the following analysis, it will become clear that physical copresence is not a means in itself, but forms the basis of instructional practices and modes of subjectivation that affect demeanor, focus, and conversational behavior. The “remote presence” in video conferences is not only characterized by material differences, that is to say spatial and technical arrangements, but also by different perceptible content, practices, knowledge, and subject positionings. The media constellation that evolves from this interplay does not so much reproduce the physical copresence as such but establishes a shared perceptual space, with mutual representation and availability, that is supposed to address the students in their subject position known from in-classroom teaching. So the question is, what exactly changes in terms of presence and subjectivation when comparing the media constellations of in-classroom teaching and teaching in video conferences; what is, or is attempted to be, kept stable in favor of a certain “normality” (Boys 2022)?¹

Media Constellation as an Analytical Heuristic

In order to analyze the constitution of the different aspects of presence as well as of subject positions, we will apply the media constellation model (Weich 2020a and 2023, Weich et al. 2023) as an analytical heuristic. This model conceptualizes media not as objects with a certain mediality but sees mediality as a product of the meaningful (in terms of constituting meaning) interplay between materialities (e.g., hardware, spaces/architecture, bodies of people), knowledge, practices (cultural and

1 The research that this paper is based on was partly conducted within the Leibniz-Science-Campus—Postdigital Participation—Braunschweig that was funded by the Leibniz-Association and the Ministry of Science and Culture of the German State of Lower Saxony.

discursive elements), content (the perceptible elements that signify the constituted meaning), and subject positions (requirements of human actors, interpellations).² The media constellation approach indicates that the notion of “translating” presence from in-classroom teaching to teaching in video conferences is kind of misleading, as changing even one element automatically reconfigures other elements and relations and subsequently the entire media constellation.³ It allows us to map out how video conferences in teaching contexts constitute subject positions by examining the interplay between the different elements and how this is connected to presence. The focus on subject positions means that we will reconstruct how the teaching and, first and foremost, the learning individuals are situated and “placed” by the materiality of their private spaces, the hardware, infrastructures, and their own physical bodies; how they are positioned by them as well as addressed by the visual and auditory contents of the media constellation as certain subjects; what practices are enabled by this constellation in terms of agency; and which practices are expected from the learning individuals due to a shared knowledge of teaching scenarios and mutual interpellations. In comparing in-classroom teaching to teaching in video conferencing, we will see how the elements and the interplay between them changes and what role different concepts of presence play within this interplay.

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- 2 In contrast with other media studies approaches such as the *dispositif* (in terms of an apparatus), this approach avoids the assumption that the video conferencing *dispositif* exists in the same way as there is the cinema *dispositif* as a medium, in favor of a more differentiated perspective and the opportunity to conceptualize complex and variable interconnections. In contrast to a broader and more Foucauldian understanding of a *dispositif*, it also avoids the suggestion that there is a general applicability or a strategy and an urgency as Foucault did for sexuality, for example (although the question of urgency seems promising in this case as well). An Actor-Network-Theory approach would not allow subject positioning to be taken into account due to a different underlying ontology. Framing video conferences as situations, on the other hand, would not address the question of media or mediality as such. At the same time, the term mediality itself remains abstract as it only addresses the distinctions and distinctiveness of certain media without addressing what things to look at when analyzing it. The media constellation approach offers groups of elements and relations that can be used for a heuristic analysis of this or their specific mediality, which can be understood as the specific constellation of materialities, knowledge/practices, content and subject positions that provide the conditions for the production of meaning.
 - 3 It is, of course, necessary to drastically simplify, as there is no one type of in-classroom teaching. Rather there are many forms, which we will not go into here in favor of a (stereo)typical conception based on our own experiences and observations in schools. Two prototypical scenarios could be a discussion-based form of teaching, as is perhaps customary in media studies tutorials or in German or politics lessons in schools, and teaching forms focused more in imparting information, such as lectures or school math lessons. There are of course differences between media constellations and forms of presence at school and at university, but these are outweighed by their similarities, which is why we will address them together and only allude to differences when it appears necessary.

Presence (*Präsenz*)

To be present and to maintain a presence, (of a person) being present and to present (an object): the semantics of “presence” in German⁴ range from existing, being there, physical attendance, and present tense, as well as show and give, introduce, depict or illustrate, and realize. The German dictionary offers two meanings for “*Präsenz*” (presence): “attendance, [conscious and deliberate] actuality or reality” as well as “physical bearing.”⁵ People “have presence” when they make a (largely positive) impression on others and draw their attention. The sense of a temporal and spatial “here and now” and the perception of the same have been understood under the term “*Präsenz*” since the word was adopted in German as a loan word from the French in the seventeenth century (Pfeifer 1989, 1312/1313). As an adjective, “*präsent*” (present) means “to be in a particular place, existing or occurring now, currently available.” This last definition is connected to the meaning of the Latin participial adjective “*praesens*,” which is also used in the sense of “momentary, immediate, urgent, effective” (ibid.). These aspects of “being to hand,” in the sense of available and useable, and of efficacy linger in the use of “demonstrating presence.” This term is frequently used in instances of state authority: police or the military mark their presence and their ability to deploy or to act. The expression “show presence” tends to resonate, in this sense, with the ability and preparedness to immediately intervene anywhere (in an entire city or district, etc.).

This first semantic examination of what presence can be, therefore includes aspects of (a) current existence or availability, which is (b) perceived by someone. The term also implies (c) certain access to available resources and the opportunity to act. In the sense of introduction and depiction the lexical field also includes (d) representation. These aspects can be found, to differing extents, in the conceptual history of the word and its root. They also repeatedly emerge in the discourses surrounding media, where their meaning sometimes shifts over time.

From a media studies perspective, it is evident that different aspects of the concept of presence outlined here, have regularly accompanied the introduction and implementation of “new” media throughout history. Accordingly, discourses of presence in media studies repeatedly gain certain attention and readings.

Thus, early media of image and writing have been studied in terms of their relationship to presence. Writing, according to Assmann (2006) for example, functions as both memory and utterance and is thus especially indebted to memory and voice.

4 As we live and work in Germany and the observed video conferences take place in German-speaking countries, we have focused on the etymology and semantics of concepts of presence in the German language. We assume that the German semantics are also of interest to international readers.

5 <https://www.duden.de/rechtschreibung/Praesenz>, last accessed 6.12.21.

Already in ancient Egypt, writing is thematized in relation to the voice of individuals. Funerary inscriptions are formulated as a “call to the living,” thus pointing to the idea of being present in a medium and, in a sense, communicating (Assmann 2006, 186).

This amalgamation of existence, representation, and perception is in turn fundamental for scripture-based (monotheistic) religions, insofar as God reveals himself and the truth through the holy scripture (Nordhofen 2009). Both the transcendence and presence of God merge in scripture, which consequently becomes an infinitely referential structure, both carrying and suspending transcendence and presence in equal measure (Derrida 1976). Scripture’s differential structure as a referential system demands an absent origin that only shows itself in scripture, thus establishing the absent presence as transcendence.

Image media, for their part, are committed to (tele)presence in two ways. Grau (2001) underlines two salient ideas about images: First, there is a long (ritual and religious) tradition of cult images that function, in a sense, as a medium of transmission. Images of saints and/or icons have a certain effect, and such images can in turn be acted upon, which also has an effect. On the other hand, since the “invention of central perspective” (Schmeiser 2002), images have been negotiated as perceptual impressions. While in the first tradition the represented enter the here-and-now, in the second tradition the recipient enters the space of the represented.

Other media such as photography and early cinematography connect to these discourses of presence and update the relationship between existence, perception, and representation. The telephone has only successively been understood as a medium that enables a common communication space and personal proximity. It was initially viewed as a variation of the telegraph: used more in a formal context for the transmission of information and instructions. In the private sphere, the telephone was initially used by the upper classes to communicate with servants within the house (König 2004). The telegraph and telephone made it possible to act at a distance, in the form of orders and instructions, and thus connect with the concept of presence we outlined above.

Media and presence intersect anew at the emergence and discursivation of media-based public spheres. According to early mass psychology, media enable dispersed masses to perceive the same thing, thereby facilitating transmissions between individuals that bring those individuals together into something collective. Furthermore, the distribution and circulation of content through mass media creates communication between those individuals that can result in a shared opinion. The television discourses of the 1950s and 1960s follow on from these discourses and

result in television becoming a medium of perception as well as a simulator of liveness and presence.⁶

In the 1990s, with the rise of the Internet and the phenomenon and concept of telepresence and virtual reality (or immersion in virtual realities), media studies discourses on presence and immersion gained relevance and were prominently discussed by Roy Ascott, for example. Since then, the question of presence and agency has been a recurring theme in game studies. Discourses on presence currently play a significant role in terms of the distribution and acceptance of each new media type.

For our purposes it is important to establish which specific forms of presence are applied to and created through the context of video conferences in teaching situations. In order to structure our observations of the relevant aspects, we apply the concept of media constellations as outlined above. Presence comes into play, here, on different levels:

i) as knowledge within the media constellations and the discourses on presence in in-classroom teaching and teaching in video conferences which are inscribed in the communication in and about them and include the expected ways of a) being existent and available, b) perceivable, c) able to act, and d) represented as well as a product of practices that take place in relation to those expectations.

ii) as a material factum of a) being existent and available, b) perceivable, c) able to act, and d) represented in certain ways.

iii) as a product of perceivable content that signifies a) being existent and available, b) perceivable, c) able to act, and d) represented.

iv) as subject positioning in terms of a set of expectations toward the individuals to be a) existent and available, b) perceivable, c) able to act, and d) represented in certain ways.

Presence in Media Constellations Employed for Teaching

We will begin by briefly outlining the media constellation typical for traditional in-classroom teaching, and the accompanying forms of presence, since initially the switch to using video conferencing for teaching attempted to “translate” existing teaching concepts (see above).

6 Kaldrack and Röhle (2016) traced these genealogical lines with regard to Facebook. In particular, they argued that Facebook Open Graph reorders the constellation of transmission, perception, and communication into a technical infrastructure that is staged as a simulator of presence. In the process, presence and participation are configured medially, even if they remain unoccupied in terms of content.

A Typical Media Constellation for In-classroom Teaching

The most obvious characteristic of the media constellation of in-classroom teaching is the materiality of a shared physical space, in which the teacher and students are simultaneously physically present. In terms of the aspects of presence outlined above, typical (even stereotypical) in-classroom teaching—regardless of institutional location and individual implementation—can be said to follow this very general pattern: (a) a group of copresent individuals in (b) a situation of mutual perceptibility, where (c) mutual influence enables joint reference to (d) representations of teaching content.

In institutional settings the materiality of the room—its architecture and furnishings—are already geared toward optimizing mutual perception, through a certain seating arrangement, for example. Such conditions can, to a certain extent, be viewed as infrastructural requirements that enable or hinder different kinds of mutual availability and influence as well as enabling certain content to be presented. The various arrangements can be assigned visibility regimes that stand in vague relation to institutional framings. The spatial arrangement and distribution of those present in the classroom is designed to prioritize the teacher's view of the students, while lecture theatres in universities focus on centrally positioned content and seminar rooms are designed to dispense with hierarchies in terms of lines of sight (see Pongratz 1990). The hierarchies and power relations that are more or less implicit here are thus repeatedly (re)produced performatively within the space and the specific practices and rituals (Wulf et al. 2007, Wulf et al. 2011). This can be exemplified by a ritual, most likely well known by many, that signals the start of the lesson. As soon as the teacher enters the room students immediately move to their usual seats, which results in them generally all facing the same direction. Conversations are abruptly ended and other activities also generally cease. The teacher then greets the class by saying “good morning,” for example. The students generally answer in unison (sometimes over-emphasizing every syllable) by saying “Good morn-ing Miss/Mr X-Y.” In terms of the media constellation model, we see here the alignment of the heterogeneous elements of the in-classroom constellation.⁷

Teachers in their subject position are commonly required to structure lessons and thus also media practices in certain ways, that is to say, to structure conversations regarding the content of the media constellation in the form of presentations or discussions. They also organize the perceptions of the participants according to conventional practices within, and in addition to, the existing power structures. The key mechanism is to attempt to prevent interruptions in concentration.

7 While this precise scenario does not usually occur in a university context, the underlying function of the ritual nevertheless persists, albeit more informally.

Teachers demonstrate their presence by their material position in the room and invoke the subject position of the learners as students through targeted looks and gestures and by coordinating interaction and communication and linking them together. These coordination practices also refer to the different technical media employed, and their content, such as when the board or textbook, spoken content and non-verbal gestures, relate to one another. In other words, teachers aim to establish or maintain the presence of their students through these practices as well as to coordinate the relationship between specific content represented within the constellation. Established courses of action are available: one of which is to confront the students with questions and observe their reactions (in terms of body language, gestures, facial expressions, signals, whispering with their neighbor, etc.). The students are thus called upon in their subject position and can now react (which becomes one aspect of the content of the outlined media constellation) visibly and, if necessary, audibly: reactions may range from disinterest to the urge to communicate. The teacher's task is generally to keep communication going. S/he can look specifically at one particular student and check their reaction, or address a student individually and prompt a specific reaction. The teacher can also emphasize this by moving around the room, toward a particular person, for example. Control and disciplinary practices may also be connected with such actions, aimed at regulating unwanted behavior.

Bureaucratic practices that check or document attendance are also relevant in this regard to attest the existence of students within the given situation. In schools, attendance is generally checked by the teachers, who see the person in the room and enter a name in a list (a type of material record as content of the media constellation). In universities lists are sometimes passed around in which students are expected to register their own attendance. While attendance in school is the legally stipulated norm, compulsory attendance for university courses must be specifically justified. Institutional practices, and the knowledge on which they are based, therefore differ greatly in this respect.

So, the subject position of the student within this media constellation can be characterized by being present in the sense of being materially/physically there, seen, heard, smelt in terms of "perceptible content," discursively represented as content in lists, addressed by initiation-practices and ongoing discursive and spatial practices as attendant, available, and able to act within the communicative practices initiated by the teacher.

A Typical Media Constellation of Video Conferences in Teaching Contexts

Presence, as mentioned above, emerged as a problematic issue in discourses on video conferencing in teaching constellations when the pandemic started. So, what are the elements, relations, and related aspects of presence in video conferencing in

teaching contexts? We will again refer to (stereo)typical characteristics of types of teaching and learning, taken from our own experiences and project work in schools. And clearly video conferences are not purely a technical “tool” to be “used,” rather it is a case of producing media constellations related to video conferencing systems within teaching situations (Weich 2020b; see also Dang-Anh et al. 2017).

Decentralized Physical Existence

One aspect of in-classroom teaching that is continued in video conferences is synchronicity. In order for the video conference to function, all participants must enter the media constellation at the same time and put themselves materially and physically in a specific situation. They are physically present but individually and in dispersed locations. The organization of one’s physical being does not involve physically moving to or within the seminar room, classroom, or lecture theatre, but remaining in a (generally) private room. The sense of “here and now” in the shared physical space is no longer possible and becomes instead a sense of “there and now” to the extent that the subjects are in decentralized locations and variously situated spaces and do not have to focus on the space in which they are currently residing, but rather on the interface with its presentation and interactive possibilities, which determines the mutual availability. Ideally, the room is warm and light enough, and sufficiently self-contained to allow the occupant to be able to focus on the content of the video conference. Rooms in educational establishments are designed to fulfil such requirements, but the functional reality during video conferences frequently diverges from the ideal. Many find themselves in material surroundings that undermine their focus and concentration as elements of presence. The spatial situation in private surroundings makes it much more likely that practices and content of the lesson have to compete with the pupils’ leisure practices and content as well as their leisure subject positions and activities (see below). In short: the physical aspects of presence as well as the subject positions in video conferencing differ massively from those of in-classroom teaching due to the different media constellation.

Mutual Perception Via the Interface

Although the practices described above, related to movement in the room, no longer apply, parts of the audio-visual perceptibility of the bodies involved are “translated.” A process that requires complex interplay between different materialities: in addition to cameras, monitors, and the end devices to which they are attached, there are also LAN cables, wireless routers, broadband and fiber optic modems, the cables to the infrastructure providers and between the infrastructure elements themselves, including mobile network masts if using mobile devices, servers, etc. Teachers and students require sufficient bandwidth in their private space and a suitable device. The participants can still meaningfully perceive one another but in contrast to in-classroom teaching, only as the audiovisual content of a media constellation

and as technically disseminated presentations. Copresence in this sense becomes a collection of icons, names and/or video images, shared speech, and other interactions, which address the individuals behind the accounts and verify the simultaneity of their being logged in, as well as their focus on the learning content. The possibilities for mutual availability and influence also shift. Central to this are directed interactions via a complex interface (Distelmeyer 2021, 53–97), that have similar goals to those in in-classroom teaching, but function differently. Depending on whether the cameras are switched on or off, the media constellation and therefore also the aspects of presence and subject positioning differ fundamentally.

With Cameras Off

In many of the video conferences we observed, students frequently turned their cameras off, thus removing many possibilities and processes of perceptibility. We observed many reasons for students not to use their cameras and were told others in conversations and interviews—material issues such as not having a (working) camera, not having sufficient broadband speed, not wanting to feel under surveillance, wanting to protect one's private space or to continue with competing activities in that private space, which is possible, largely unnoticed, without a camera image. Activities such as cooking, cleaning, hanging out, playing games, sleeping, or playing with pets or children, were just some of those mentioned by students. The subject positions created by the greeting ritual in in-classroom teaching, outlined above, cease to exist and are now in competition with domestic subject positions and practices arising from the private environment and the established routines within it. The new media constellation enables students to shape parts of their subject positioning compared to the media constellation of in-classroom teaching, in which they have no control over their visibility. The materiality allows for practices to “eliminate” some of their representation as content of the media constellation. At the same time, certain aspects of copresence are lost.

When cameras are not switched on, students are frequently only identifiable by names or icons on the user interface provided by the video conferencing software, such as symbols indicating whether the microphone is on or off, or the symbol to raise your hand. In this case, perceptibility is established by visual content on screen without bodily representation. The teacher therefore lacks the optical confirmation that the students are correctly positioned within the room and have assumed an attentive posture or attitude (physical and cognitive), appropriate to their subject position, as this is not represented as content. This also means, however, that the associated positioning of the subjects as students or pupils is initially omitted and that the obligation to call up the associated practices and bodies of knowledge is made more difficult. Against this backdrop, substitute practices of control emerge. During our observations we noticed what can be interpreted as attempts to actively interpellate the students, in order to refer them to their subject position within the lesson.

Some teachers, for example, called the names of each participant at the beginning of the lesson thus employing the bureaucratic form of the attendance list known from in-classroom teaching in order to check the presence of the subjects in terms of their availability and their ability to (re-)act. A further set of practices involved continually checking participation, encouraging everyone to write comments in the chat, or to take part in questionnaires.

The chat function, available in most video conferencing platforms, is a central feature for establishing perceptibility and the ability to (inter-)act. Notification signs and practices become established in video conference chats, such as posting ! (information), ? (question), h (raised hand), m (message), as well as written questions, which are either answered verbally via audio or directly in the chat. This creates a written log of the meeting's progression. Practices from other media-cultural spheres become integrated in the lesson through the chats, such as emojis, "written oral language," and the use of capital letters or repeating letters. In our observations we frequently encountered abbreviations being used such as "afk" (away from keyboard) or "brb" (be right back), which introduces, on one hand, abbreviations established in other spheres as content and, on the other hand, the associated practices from these areas: whilst briefly being absent from an online game or chat is not an issue, this is—at least in the context of schools—not generally allowed in a teaching situation and requires an explanation as it conflicts with the expected subject position. Presence and absence are being negotiated under the premise of the new media constellation and not that known from in-classroom teaching. In some cases, the domestic practices mentioned above play an important role (the doorbell rang), and can justify some absences. Yet another layer of communication is constituted. In most "private chats" a bilateral copresence and a kind of "private" subject position occurs at the written level, which can be linked with reactions visible from the camera image for all others to see. This is to some extent similar to whispering with the person you are sat next to, or to passing around notes in the classroom, however, a rather peculiar kind of copresence emerges in the case of video conferences.

Visibility by Camera Images

In many cases, if not done voluntarily, the students are asked or forced to turn their cameras on (at least at the beginning and end of the meeting), in order to be seen and to greet each other. Then, as they are addressed as visible subjects and their visual representation is constituted as the content of the media constellation, they become present in terms of their mutual visual perceptibility. The image produced by the camera generally depicts the head and shoulders, and sometimes the hands as core visual content of the media constellation. This changes the familiar perception of a person's entire physical appearance in in-classroom teaching in favor of a limited audio-visual representation (touch and smell are also lost). The resolution and the

usual size of the image box on the screen make it difficult to identify facial expressions and gestures as content of the media constellation that signifies presence in terms of perceptibility, availability, and symbolic agency. Particularly pronounced or over-exaggerated movements have become established in practice, such as exaggerated nodding or shaking of the head, or wide-open eyes to compensate that fact. So, the subjects stage themselves as visual content in order to show that they are “present” in this respect and that they fit in the subject position desired by the teacher. At the same time, nobody can see who is looking at whom, so no one can be sure whether the teacher or other learners are checking one’s actual subject status. Subjectivation functions here more similarly to a panopticon (where the deviants can never be sure if they are being watched or not) than to a direct interpellation by the teacher’s gaze, for example. A particular feature of the technical infrastructure is that if one wishes to give the impression that one is looking at a particular person, or all the others in the meeting, one can look directly into the camera. The teacher’s gaze that looks at all students at once becomes the visual content that would never be possible in on-site teaching. But this also makes it impossible to observe the other participants at the same time, or to perceive how other participants are looking at your image. This rules out parts of the practices of conversation management, control, and discipline described above. In addition, it is much harder to recognize and interpret the reactions of others. Our observations show how the functions of such glances and looks are being newly configured through the use of emoticons/icons and particularly through written comments in chat functions, which can become a central “log” of reactions as a new form of content.

One of the specific visual effects of video conferences is that participants are not only able to see the camera images of others, but that they are also confronted with their own image as content of the media constellation. On this level, there is the potential for continuous self-monitoring, which acts as a cue for each person to fit into their assigned subject and can lead to practices of self-discipline. At the same time, there is the danger that one’s own presence (image) as content, and the sense of one’s awareness of and influence upon it, distracts from the content on which one should be focusing. One student described this as “irritating, distracting and takes some getting used to,” as effective demands on one’s own outward appearance (hair, clothes, posture) in a public space are subject to permanent self-monitoring. The knowledge of one’s own visibility can, however, also be used proactively. It makes it possible to control the presentation of oneself as described above through gestures, clothes, accessories (such as gaming headsets), and also through conscious presentation of the space in which one finds oneself (from being in front of bookshelves to being in a whirlpool) as the content of the camera image. Digitally inserted backgrounds create yet another content category, which can be highlighted using practices and technology, particularly known from films, TV series, or video productions.

Audio

Although we refer to *video* conferencing, audio plays a crucial role, too. The material requirements for audio as content of the media constellation—besides the infrastructures already mentioned—are a microphone and speakers or headphones, as well as the physical ability to speak and hear. Mutual speaking and hearing are core aspects of presence in in-classroom teaching. In video conferences teachers and students are primarily talking in their respective location to themselves. Speaking and hearing one's voice in the room reaffirms the sense of self-presence, and discerning reactions from the other participants proves one's ability to act. Knowing that one's own voice is a shared part of the content of the media constellation and hence heard by the others, as well as hearing the others speak, establishes a level of mutual perception. A central challenge of video conferences in this context consists of establishing content and practices at the visual level which can be coordinated with the audio channel and can in turn integrate or contextualize the visual and written contributions in speech. The technical and material conditions do not allow simultaneous speech which sometimes fulfils a coordinating function in in-classroom situations through the changeover from one speaker to another. Visual markers that in in-classroom situations would signal that one would like to speak, such as body language or facial expressions, are generally not adequately visible. The technical and material functions of the "noise gate" discount as potential content signals that are too quiet, meaning that sounds that indicate one would like to speak (clearing one's throat) are also filtered out. The slight delay in transmission of sound and pictures also presents a challenge in terms of temporal coordination. Another factor is that the practices of addressing and prompting one another through the use of looks, pointing, gestures, and position within the room cannot be implemented in this media constellation. Alternative strategies are calling people by name, the "keep quiet until someone sacrifices themselves" approach familiar from in-classroom teaching, which usually does not work well in video conferencing, especially when the cameras are off.

Shared Perceptions

The sense of presence in video conferences remains linked to the aim, that those logged in will tend to perceive the same things, or that the interface will present them with the same content. There are, however, a series of factors to consider that differ according to the individual situations of those "gathered," which can lead to differences in perceptible content. In addition to different material conditions (space, end devices, infrastructure) which can affect sound and picture quality, for example, there are also generally differences in presentation: different versions of the application (in the browser or app) may organize content differently, different settings in the interfaces (tile view or gallery, making certain fields visible or hiding them) allow participants to have different views, and individual participants can also switch

between other windows or applications that they have open at the same time. The arrangement of one's own display and showing or concealing one's own space (use of background pictures, positioning oneself in front of a bookcase, etc.) are elements of individual practices and knowledge bases, which in turn can affect the established aspects of presence in the teaching setting in diverse ways. When using Zoom, participants in a video conference can use the speaker view which facilitates their focus on the person speaking by hiding or minimizing the representations of other participants. In contrast, it can be useful for the speaker to select the gallery view, in order to be able to see the greatest number of participants, perceive their postural and facial reactions, and adjust their speech accordingly. In comparison with traditional in-classroom teaching, much more complex arrangements and equipment are involved in adopting a position of paying attention and making it visible, such as adequate lighting, selecting a suitable picture detail, and the position of the end device to obtain a decent camera angle. The material arrangement means that aspects of mutual perception and the awareness of what others can perceive, as well as the associated possibilities and practices of specifically reacting to and influencing one another, no longer function through the act of seeing and being seen since they are no longer part of the media constellation.

Invisible Presence

Finally, it is important to note two levels on which participants or subject positions are involved/present but not usually perceived or even not perceivable in the media constellation. The first is that in contrast to in-classroom teaching, video conferences always raise the question of who owns which parts of the infrastructures used and how we become present for whom—in the form of our data. In in-classroom teaching, data are only recorded in a rudimentary fashion, in the form of attendance lists or class register entries for example, as long as no digital devices are used, and it is generally clear who has access to that information. In video conferences a wide range of data is accrued as “hidden content,” and it is difficult for participants to know what happens with that information. This scenario involves new subject positions with economic interests behind the media constellations used for teaching, which are fulfilled for example by companies such as Zoom or Webex that put the learning and teaching subjects in the position of a data resource.

On the second level there are occasionally people present in video conferences who are neither audible nor visible: teachers in schools have for example reported that parents of students have listened and observed, without the teacher's knowledge, and have later spoken to them about their teaching style. This behavior oversteps boundaries that exist in in-classroom teaching and opens up new visibility arrangements and control practices. In other scenarios it is possible for siblings, house or flat-mates, or partners (of students or teachers) to be present. This results in the new subject position of the undetected observer or listener.

In reality, the levels and constellations analyzed here, and the associated spaces in which one is present, overlap in highly complex ways. In some cases, the overlaps are functionally related to one another in terms of the teaching objective, and in others they are the expression of the fact that media constellations are also “contested,” insofar as individuals appropriate the intended subject positions and attempt to quietly subvert them, or attempt to reshape the entire constellation.

Conclusion and Desiderata

Stemming from the observation that the use of video conferences as a substitute for in-classroom teaching in the first lockdown was a much discussed issue and closely connected to the concept of presence, we have used the heuristic analysis of media constellations to examine the materialities, knowledge and practices, content, and subject positions that emerge from in-classroom teaching and video-based synchronous teaching. The idea of presence with its dimensions of (a) current existence or availability, (b) being perceived by someone, (c) certain access to available resources and the opportunity to act, as well as (d) representation has then been connected to the media constellation analysis as different aspects of presence have been identified as part of the knowledge, product of practices, material factum, and content of the media constellation and especially related to the positioning of subjects. This made it possible to determine more clearly what the function of the much-vaunted presence actually is in in-classroom teaching and video conferencing.

Following this rather simplified characterization leads us, first, to conclude that copresence is the basis of a specific set of control practices in in-classroom teaching that lead students to take a certain subject position. This, in turn, ensures the “correct” body language and conversational posture, which mark receptivity as well as a willingness to talk about the (learning) content and allow the students to exercise practices specific to subject positions and learning goals, e.g., information intake, knowledge acquisition, presentation, collaboration, discussion, or argumentation. In the media constellation of video conferencing, we see a different set of materialities, knowledge, practices, and content that try to “translate” certain aspects of presence known from in-classroom teaching to the video conference. But new elements and interrelations also arise that employ different aspects of presence in order to (re-)establish a similar subject position to that of in-classroom teaching. Video conferences configure presence as the simultaneous gathering of representations of addressable but physically decentralized participants, who should perceive the teaching person, each other, and the respective information presented as well as having an exchange about this information. However, the traditional practices of having influence upon one another and offering mutual availability only function to a limited degree in video conferences. Instead of using position within the room,

looking, pointing, and sanctioning undesirable behavior as disciplinary and motivational practices, visualizations, audio, and datafied control practices come to the forefront. This also brings into view the fact that presence in teaching particularly serves the performative embodiment of attentiveness and concentration, as well as the practice of appropriate communication practices and modes of subjectivation.

If one follows the description and analysis of in-classroom teaching and video conferencing in teaching contexts presented here, then the key aim behind the longing for presence is not the (re)establishment of presence in the sense of “here and now” (a), but rather the creation of certain communication and control practices and subject positions, which represent the preliminary basis of institutional hierarchies and didactic objectives. Further levels of presence, such as shared perception (b), mutual influence (c), and the presentation of content (d), are not aims in themselves, but rather a means to an end. The analysis of the creation of presence in video conferences in teaching contexts allows us to draw conclusions about the function of presence in traditional in-classroom teaching insofar as the differences, but especially the similarities, between the two media constellations reveal that teaching is primarily concerned with subject positioning and engaging in practices that correspond with these positions.⁸ The analysis of this specific kind of presence, and the media constellation through which it is generated, provides a basis for reflection on the design of teaching with and in the context of video conferences. It is possible in this way to surpass the limitations of the basic “translation logic.” It is important to reflect upon the function that presence fulfils and which combination of materiality, knowledge and practices, content and subject position could or does fulfill the same role.

A range of further research questions could emanate from this brief analysis and subsequent speculation. On one hand it would be appropriate to systematically analyze works from pedagogy and educational sciences, and (subject-specific) didactic works on presence, visibility, addressing, and subjectivation in terms of their relationship with the media studies analyses developed here. In light of current developments, it also seems promising to continue this historical line of questioning by considering presence and other relatively new media constellations, such as those associated with virtual reality (VR) environments, which have (again) attained a prominent role in the discourse, due for example to the recent metaverse imaginings of

8 Building upon our analysis and rationale, we can conclude that physical copresence in in-classroom teaching is not a means in itself, but is rather a foundation for (habitualized) practices related to demeanor, focus, and conversational behavior. Copresence appears to be the basis for control and disciplinary techniques directed at correct concentration and conversational behavior. Interface-based copresence in the media constellation of video-supported synchronous teaching is not able to fulfil this function in the same way and so there is a partial shift toward other disciplinary and control practices.

Mark Zuckerberg. The respective underlying media constellations in teaching contexts could be analyzed, and the production of the different kinds of presence could subsequently be related to those constellations. It would also be interesting to examine how the relationship between presence and mediality is renegotiated within the historical timeline.

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