



# Embodied teacher identity: a qualitative study on ‘practical sense’ as a basic pedagogical condition in times of Covid-19

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## Abstract

Worldwide, the Covid-19 pandemic has transformed teaching contexts rapidly. Studies on the effects of the Covid-19 pandemic have largely focused on students’ learning and well-being. In contrast, little is known about how emergency online teaching affects teachers. The aim of this study was to examine how disrupted teaching contexts during the Covid-19 pandemic affected academic teacher identities in health science education. Interviews were conducted with 19 experienced lecturers in health science education from two universities. Interview data were analysed using systematic text condensation. The established codes were compared across interviews to identify common themes and subsequently synthesized into descriptions of the emerging phenomena. Findings indicated that a form of embodied teacher identity, i.e. internalized teaching practices turned into dispositions, constituted a basic pedagogical condition and a resource for the teachers, and that the sudden change in the teaching context caused a loss of teacher identity. This identity loss was related to an incorporated understanding and use of the teacher’s sense of the classroom (subtheme 1), non-verbal feedback from students (subtheme 2) and reciprocal visual contact (subtheme 3). Data also indicated that teachers’ ability to adapt their teaching to students’ needs while teaching and teachers’ motivation and job satisfaction may have suffered. Universities should carefully consider how to cultivate sustainable and adaptive teacher identities compatible with the increasing digitalization of learning environments. Teaching is an embodied affair, and teacher identities are sensitive to structural changes in teaching contexts.

**Keywords** Covid-19 pandemic · Eye contact · Health science education · Higher education · Non-verbal communication · Online teaching · Practical sense · Teacher identity · Qualitative research

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## Introduction

Before the Covid-19 pandemic, most university teaching was organized as face-to-face activities. During the pandemic, teaching contexts became overwhelmingly—if not entirely—digital and remote, and teaching via platforms such as Zoom, Skype and Teams became the ‘new normal’ (Vallee, 2020; Watermeyer et al., 2021). As teacher identity develops in a dynamic interplay between changing teaching contexts and the personal interpretative framework every individual teacher develops throughout a teaching career (Kálmán et al., 2020; Kelchtermans, 2009; Nevgi & Löfström, 2015; Trautwein, 2018; van Lankveld et al., 2021), we assumed that academic teacher identities had thus far been closely intertwined with face-to-face teaching, and that the ‘old’ identities were disrupted by the new normal (Ellaway et al., 2020). Teacher identity serves as an important organizing element in teachers’ professional decision-making (van Lankveld et al., 2021), and teachers are key agents in facilitating students’ digital learning environments (Jensen et al., 2020). Even so, studies on the effects of the Covid-19 pandemic have largely and understandably focused on students’ learning and well-being (Asbury et al., 2020; Aucejo et al., 2020; Cao et al., 2020; Colao et al., 2020; Gonzalez et al., 2020; Kim & Asbury, 2020; Son et al., 2020). In contrast, much less attention has been paid to the impact Covid-19 has had on teachers (Kim & Asbury, 2020). Watermeyer et al. (2021) surveyed British university teachers and found that most respondents viewed the emergency online migration as having had a negative impact on their pedagogical practice. This practice was perceived as being reduced to ‘transmissional’, ‘rudimentary’, ‘technical’, and ‘easily automated’ practice, which left some teachers feeling that they were changing into ‘disembodied and depersonalized purveyors of education’ (Watermeyer et al., 2021, p. 632). Simultaneously, teachers seemed to have spent much more time counselling stressed or confused students. Such reports indicate that teachers have experienced significant changes to their teaching contexts and job motivation (Kulikowski et al., 2021); changes that may affect their professional identities. Nurturing strong teacher identities is considered crucial for teacher retention (Schutz et al., 2018, p. 44) and for teachers’ willingness to invest time in faculty development activities (Beauchamp & Thomas, 2009; Trautwein, 2018; van Lankveld et al., 2021), which, in turn, has been found to affect the quality of the teaching delivered (Steinert et al., 2016). The issue of teacher identity and teacher retention seems particularly pertinent in the health science education sector, because of the strong competing identities and alternative job opportunities that are available to clinicians (van Lankveld et al., 2021). The disruptive changes in teaching contexts caused by the pandemic are likely to have impacted teachers’ identities on a global scale. In the present study, we examined how disrupted teaching contexts during the Covid-19 pandemic affected academic teacher identities in health science education.

Along with the establishment of academic teacher identity as a distinct field of research (Kreber, 2010; McNaughton & Billot, 2016; Trautwein, 2018; Trede et al., 2012; van Lankveld et al., 2017), subfields of research are emerging within specific disciplines. Within health profession educations, prior research on teacher identity has focused mainly on clinical teachers’ developmental pathways and identity work in relation to the health-care system, where the environment is usually more supportive to the identities of health practitioner and researcher than to the identity of teacher (van Lankveld et al., 2021). For example, hospital physicians’ development of teacher identities was found to entail negotiations between regimes of competence in clinical teams, teaching hospitals and medical schools (Cantillon et al., 2016). Furthermore, recent literature reviews in this field of

research found that health professionals' teacher identities were insufficiently supported by universities and hospitals (Steinert et al., 2019), and that teacher identities were developed in hierarchical social settings where patient care and research were prioritised above teaching (Cantillon et al., 2019). As the above studies indicate, contextual factors in the workplace play a pivotal role in teachers' identity development. More specifically, a comprehensive literature review including 59 studies on the development and maintenance of teacher identity across a range of academic disciplines in higher education (including medical education) showed that four contextual factors in particular had influenced the development of teacher identity: (1) work environment, (2) wider context of higher education, (3) contact with students and (4) staff development activities (van Lankveld et al., 2017). The study also found that five psychological processes were involved in teachers' perception of these contextual factors: the teacher's (1) sense of appreciation, (2) sense of connectedness, (3) sense of competence, (4) sense of commitment and (5) how the teacher envisions his or her future career trajectory. Especially the teacher's sense of competence when in contact with students and in relation to staff development activities was strongly connected to the development of teacher identity. Interestingly, van Lankveld et al. (2017) established that the direct work environment either supported or hampered identity development depending on the teacher's sense of appreciation received from the work environment. Also, the wider context of higher education, i.e., the shifting agendas in higher education and organisational changes associated with these agendas, was generally experienced as having a constraining effect on the development of teacher identity. To the best of our knowledge, one particular agenda in the context of higher education seems to have consequences for the development and negotiation of teacher identity: digitalization and technology-enhanced teaching and learning (Bennett, 2017; Kirkwood & Price, 2014; McNaughton et al., 2014). This agenda affects the teachers' self-understanding in terms of pedagogy, values and professional and personal narratives (McNaughton & Billot, 2016). It also challenges teachers by introducing significant role ambiguity in unanticipated ways (Englund et al., 2017), for example when the teacher steps into an embodied presence via video or avatar in online environments depending on both teacher judgements and what the technology offers. This raises questions about the dualism of online and offline presence (Bolldén, 2016). A quantitative study on the intersection between a learning management system (LMS) and teacher identity showed that variations in aspects of professional identity shaped the extent of LMS usage while being predictive of qualitatively different ways of using the LMS for teaching (Liu & Geertshuis, 2021). A qualitative study of teachers' perceptions of video conferencing as a teaching practice revealed that perceived similarities between video conferencing and television created identity confusion for teachers as presenters and academic professionals (McNaughton et al., 2014). Furthermore, higher education institutions and their educational development programmes pay only scant attention to how teachers' identities are shaped and challenged by the agenda of digitalisation and technology-enhanced teaching and learning (Geertshuis & Liu, 2020; McNaughton & Billot, 2016; Steinert et al., 2019). The technology-enhanced teaching and learning agenda became a very concrete reality for most higher education teachers when the Covid-19 pandemic transformed teaching and learning activities into online events. As established above, much more knowledge is needed to fully comprehend the complex intersection between teacher identity and technology-enhanced teaching and learning, not only to support teachers' adoption of various digitalised tools, but, more importantly, to support the sustainable and long-lasting development of teachers' motivation and self-understanding in changing academic contexts.

In order to examine how the disrupted teaching contexts experienced during the Covid-19 pandemic affected academic teacher identities in health science education, we find it

useful to clarify the conceptual and theoretical position from which we conducted the present study on teacher identity as this has consequences for the wider conclusions drawn from the findings of the study.

### Conceptualizing teacher identity

Essentially, identity involves people's explicit or implicit responses to the question: "Who are you?" The construct of identity has been approached from personal, developmental, social and contextual perspectives, and within a variety of domains such as gender identity, ethnic identity, national identity and professional identity (Vignoles et al., 2011). Today, identity research has branched off into a myriad of conceptual approaches across the social sciences and humanities one of which is research exploring teacher identity (Elliott, 2019; Rolls & Plauborg, 2009). It is far beyond the scope of the present paper to address the wide-ranging research about teacher identity, which is informed by various epistemological traditions conceptualising identity either as an individual's identification with certain groups or as an image we construct of ourselves, from within ourselves (Kreber, 2010). These two positions reflect a sociological and a psychological perspective, respectively. Below, we introduce our mainly sociological conceptualisation of academic teacher identity, as it is vital to the construction and analyses of data in this study.

Most fundamentally, in our view, identity is a sense of biographical continuity which the person can grasp reflexively and communicate to others (Giddens, 2013). Simultaneously, identity is an embodied practice (Bourdieu, 1990; Bourdieu & Wacquant, 1992) that is deeply intertwined with sociality, culture and relations of power (Elliott, 2019). Consequently, we acknowledge that identity is balancing between self and other, between narrative and practice, and between individual and culture. Thus, in the present study, we adopted a perspective on teacher identity that implies that teachers develop their identity during active involvement with contexts in which social and cultural forces influence developments (Laiho et al., 2020; van Lankveld et al., 2017) in a biographical continuum spanning years of teaching experience (Clegg, 2008; Kelchtermans, 1993, 2009; McLean & Price, 2019). To situate our study within the conceptual landscape of research on academic teacher identity, we introduce and combine two specific theoretical frameworks: (1) a narrative-biographical approach developed by educationalist Geert Kelchtermans (1993, 2009) and (2) Pierre Bourdieu's idea about practical identity as a 'feel for the game' (Bourdieu, 1990, p. 66) of teaching.

According to the narrative-biographical approach, the concept of teacher identity encapsulates the personal, professional and societal dimensions of being a teacher by profession. Teaching is a relational, social and public act—and teaching is enacted by someone (Kelchtermans, 2009). Because of the action-oriented and interpersonal character of this particular profession—teaching is not an economic transaction between a provider (teacher) and a consumer (student); rather it is a professional relational presence consisting of saying, doing, acting and responding, and listening, hearing and seeing—identity in relation to teaching is not only a matter of *who you are* as a teacher; rather it is a matter of *who you are when you teach* (Biesta, 2004). In this statement lies an understanding of teacher identity as a dynamic narrative about who you are in relation to different cultural practices and social contexts of teaching. Embedded in this statement is also an understanding of teacher identity in the plural, meaning that teacher identities are negotiated and developed during the act of teaching. To capture this dynamic between the individual teacher and the act of teaching, Kelchtermans (2009,

p. 260) argued that “throughout their careers, teachers develop a *personal interpretative framework*: a set of cognitions, of mental representations that operates [sic. Operate] as a lens through which teachers look at their job, give meaning to it and act in it”. The framework consists of two interwoven domains: the *professional self-understanding* of the teacher, i.e. the teacher’s narrative about self-image, self-esteem, job motivation, task perception and future perspective; and the *subjective educational theory* of the teacher, i.e. the personal system of knowledge and beliefs about education that teachers use when performing their job. This comprehensive construction of teacher identity addresses the complexity of teaching as a job where the professional decision-making and pedagogical judgements made by the teacher are tightly connected with the teacher’s self-understanding and feeling of motivation and meaningfulness. Kelchtermans’ (2009, p. 265) point here is that “the research lines on teacher identity on the one hand and on teachers’ professional knowledge on the other would benefit from an integrated approach, rather than continue to develop as largely separate fields of study”.

Kelchtermans helps us conceptualise the key components of teacher identity. Yet even though Kelchtermans states that teacher identity has a “dynamic nature” and a “contextual embeddedness” (Kelchtermans, 2009, p. 263), his theory mainly addresses the question of what the key components of teacher identity are and not exactly *how* these components are constructed and shaped. To grasp how teacher identity is constructed, we draw upon the sociological work of Pierre Bourdieu. Specifically, we will operate with the notion of identity as practical identity, or rather as the externalisation of an internalised practical sense. According to Bourdieu, practical sense is always constructed in relation to a specific field of practice. In this case, teacher identity must be understood in relation to the educational field. Bourdieu defines practical sense as:

(...) an acquired system of preferences, of principles of vision and division (what is usually called taste), and also a system of durable cognitive structures (which are essentially the product of the internalization of objective structures) and of schemes of action which orient the perception of the situation and the appropriate response (Bourdieu, 1998 p. 25).

In other words, practical sense is a set of internalised preferences that guides the teacher’s actions. In our view, the notion of practical sense is not far from Kelchtermans’ notion of the teacher’s *subjective educational theory* being the personal system of knowledge and beliefs as principles of teaching. Both are produced through a continual dialectic relationship with the teaching context, and both play an integral role in informing teaching practices. Bourdieu also describes the product of this internalisation of the external structures constituting the field as “habitus” (Bourdieu, 1998). That practical sense (or habitus) is an internalised set of preferences highlights the view of identity as a form of socialised subjectivity produced by the specific social structures and relations in which the individual is situated (Bottero, 2010). According to Bourdieu, this kind of socialised subjectivity may be understood as “necessity internalized and converted into a disposition that generates meaningful practices” (Bourdieu, 2010, p. 166). Thus, necessity is not only, as the saying goes, the mother of invention, but also of preference or taste. This is an important point for two reasons. First, practical sense is the generative mechanism in Bourdieu’s theory of practice, since practical sense provides dispositions that generate meaningful practices. It is important to note that in contrast to Kelchtermans narrative approach to teacher identity, the teacher may not even reflectively recognise these dispositions according to Bourdieu. Therefore, many teachers may only recognise their teaching practice as a disposition once they are disrupted from acting upon it. Second, because practical sense is internalised

necessity converted into dispositions, it follows that the exercise of practical sense is something that the individual prefers and experiences as meaningful.

## Research question

Combining Kelchtermans' conceptualisation of teacher identity with Bourdieu's idea of identity as practical sense, we see that individual teacher identity, i.e., a practical sense shaped by teaching context as well as prior teaching practice, is what informs teaching practice, and that the exercise of teacher identity through specific teaching practices is experienced as meaningful. Assuming that most teachers have formed their teacher identity in a teaching context with physical presence of students and through a dialectic relation with their own face-to-face teaching practice, the central question becomes:

How does the disruption of teaching contexts during Covid-19 affect teacher identity?

## Methods

Practical sense functions below the level of immediate discourse (Bourdieu, 2010). Consequently, to gain insight into the schemes of action that orient teachers' perception of the teaching situation and the appropriate response to it, we used a constructivist-orientated approach (Charmaz, 2006) in which the presented meanings, experiences and orientations were constructed among the participant, the interviewer and the research team. This approach explicitly treats researchers' work as constructions and not as objectified products (Charmaz, 2006). We conducted qualitative, explorative in-depth interviews with 19 experienced health science education teachers. The choice of this method was based on its sensitivity to the participants' experiences and narratives (Garro & Mattingly, 2000) about their individual preferences, their perceptions of their role and their academic teacher identity.

## The context of the study

The study context were two research-intensive public universities. The interviews were conducted during the Covid-19 pandemic lock-down of schools and universities. In the study context, the lock-down was brought into effect in March 2020 and we interviewed the teachers in June 2020. At that time, the teachers were past the implementation stages of online teaching formats (primarily teaching via Zoom) and had a few months of experience with the 'new normal' in teaching and learning at the university level.

## Recruitment of participants

The participants comprised a purposeful and strategic sample of volunteer teachers, which we identified by the following inclusion criteria: (1) a diversity of health sciences educations, (2) a diversity of genders, (3) more than eight years of teaching experience, (4) ongoing teaching during the Covid-19 pandemic lock-down and (5) non-clinical teaching contexts, i.e., lectures and classes, and not laboratories or bedside teaching. Our aim was to include a diversity of teachers from health sciences education settings,

i.e. teachers in academic positions as well as teachers in joint academic-clinical appointments, where teacher and students meet in auditoriums or classrooms, reflecting common teaching situations across higher education institutions and subject-specific contexts. We included teachers with more than eight years of teaching experience to reduce the influence of issues related to the early stage of teacher identity formation taking place during the beginning of an academic teacher's career (McAlpine & Amundsen, 2018) (Table 1).

## Ethical considerations

Before being enrolled in the study, all participants were informed about the study verbally and in writing. Before starting the interview, oral and written consent was obtained from the participants. The participants and their contexts were anonymised in the presentation of data. The authors obtained permission from the national Data Protection Agency to use and combine the specific data generated in interviews for the purpose of this study, as required by national laws. Ethical approval was given by the Institutional Review Board (record number 2016-051-000001, sequential number 1829). In pursuance of the guidelines of the Regional Ethics Committee, the study was exempt from ethical approval because of its qualitative design.

**Table 1** Participant characteristics

Characteristic	Category	n participants
University	University 1	11
	University 2	8
Programme	Medicine	9
	Sport science	3
	Odontology	2
	Clinical biomechanics	2
	Public health	1
	Nursing	1
	Psychology	1
Gender	Women	11
	Men	8
Teaching experience	8–10 years	6
	11–20 years	10
	21–30 years	3
Academic title	Professor	6
	Associate Professor	8
	Assistant Professor or Lecturer	5
Joint academic-clinical appointment as a medical doctor	Yes	6
	No	13

## Data collection

In April 2020, we identified 30 teachers who matched the inclusion criteria. We contacted the teachers by telephone and 24 teachers volunteered. Then, the 24 teachers received an email containing a declaration of consent and a semi-structured interview guide (“Appendix B”) to prepare themselves for the interview. The semi-structured interview guide (Kvale & Brinkmann, 2009) was applied in each of the interviews. The interviews focused on the production of narratives. The participants were therefore invited to talk about their experiences with shifting from face-to-face onsite teaching to online teaching. The main questions in the interview guide were:

- Which changes in teaching due to Covid-19 have you experienced?
- How do you experience these changes in your teaching?
- How do the changes influence your self-understanding as a teacher?
- What matters to you as a teacher, and when do you feel like a ‘good’ teacher?

To secure content validity, we included participants until we attained data saturation (Fusch & Ness, 2015). In the present study, we assumed that data saturation was reached when the interviews became more and more alike and no new information was attained. By the end of June 2020, data saturation had been attained, and 19 of the 24 teachers had participated in an interview. The 19 interviews were conducted by the first and last author in May and June 2020. The interviews were conducted at the teachers’ offices or via Zoom. All interviews were audio recorded and transcribed.

## Data analyses

The transcribed interviews were analysed employing a systematic text condensation method (Malterud, 2012) including four analytical steps. First, we read the entire text of each interview to build a general sense of the interview. Once the sense of the whole had been grasped, we wrote a summary (approx. 150 words) for each interview that reflected the participant’s experiences. Second, we returned to the beginning of the interview and read through the text once more with the specific aim of discriminating “meaning units” with a focus on the phenomenon being researched. Meaning units are longer pieces of transcribed text (typically 5–6 sentences), i.e., the participant’s own words that express a topic, a situation or an experience related to our research questions. Third, we organised the meaning units by assigning different codes to them. The codes were stated as short descriptions using a mix of the participant’s words and our own words. Each code was a unique and distinctive description of the meaning unit. The interviews were typically assigned 10–15 unique codes each. The thematical variation in the codes is exemplified below (Table 2).

Lastly, all the codes were compared across the 19 interviews to identify transversal themes. We synthesised the themes into concepts about the phenomenon under investigation. This fourth analytical step included a theoretical reading (Kvale & Brinkmann, 2009) of the themes based on the sociological conceptualisation of teacher identity and practical sense as described above. We applied this theoretical frame of reference (Malterud, 2001) to facilitate theoretically informed interpretations of how the teachers became aware of ways in which practical sense operates during teaching. Furthermore, the theoretical frame



**Table 2** Examples of the thematical variation in the codes

Teacher	Code
3	It is easier to establish a dialogue with the students when the teams are smaller
9	During the reorganisation from onsite to online teaching, my focus changed from pedagogical considerations to practical technological considerations
11	The students' feedback on the zoom-teaching in general was fairly good, which we as teachers thought was the good thing about it
12	Zoom removes the teacher from the students and makes the teacher a background figure
15	The tone between teacher and students became more formal and it all became more 'dead', because I as a teacher have to be more aware of telling all the stuff completely correctly

of reference may underpin the transferability and external validity of the study findings (Malterud, 2001).

## Findings

The teachers' narratives reflected four transversal themes: technological capabilities, relation to students, teaching role, and reliance on practical sense. The first theme relates to the technical challenges of the online classroom and the practical advantages of online teaching, provided the technology works properly. The second theme concerns the teachers' worries about students' well-being, commitment and active participation in a situation in which students and teachers were not allowed to meet on campus. The third theme is about how online teaching accentuated the teachers' experiences of being 'facilitators' of students' learning and 'bearers' of expert knowledge (Trautwein, 2018) at the same time. These three themes summarize the teachers' narratives about the concrete implications of the Covid-19-related transformation of a diversity of teaching contexts into a more uniform online setting. However, the three themes were all directly related to the fourth and more fundamental theme, which clearly stood out as the most urgent one: (4) *the teachers' reliance on their practical sense in an educational setting*. From the qualitative analysis, it became evident that the 19 teachers had a shared experience of a very basic change in their understanding of themselves as academic teachers: they had gained awareness of the importance of being able to 'feel' the classroom and 'sense' the interactions with the students. Hence, the following presentation of the results focuses on the importance of practical sense in an educational setting.

### The importance of practical sense in an educational setting

As mentioned above, this theme was identified as the most important narrative among the interviewed teachers. Multiple teachers mentioned that the change in teaching context had revealed to them which specific aspects of teaching they value. For instance, when asked which lessons he had learned from the experience of teaching during the Covid-19 lockdown, one teacher said: "The value of the personal contact with the students; I always valued that, but now, of course, it's very apparent when it's not there" (teacher 11). In accordance with Bourdieu's theory of practical sense understood as largely pre-reflexive dispositions that work 'behind the back' of the individual, the teachers only become

aware of these dispositions once they are disturbed and can no longer be fulfilled. Here, we also see an interesting distinction between the theoretical approaches of Bourdieu and Kelchtermans. In a Bourdieusian sense, the value of personal contact was already a part of the teacher's teacher identity, even though it was only recognised by the teacher after the disposition could no longer be fulfilled. In a biographical-narrative approach such as the one of Kelchtermans, teacher identity is constructed in the retelling of what the teacher values (in this case, the personal contact with the students). Like in the example above, most teachers expressed the importance of their practical sense through a novel lack of 'something', which they would no longer experience in the new teaching context. In a Bourdieusian perspective, the Covid-19 pandemic has threatened the established doxa in the educational field by obstructing the reproduction of orthodox teaching practices, leading to the teachers' sense of lacking something. By compiling these 'lacks', we found that the theme on practical sense may be divided further into three subthemes:

1. the teacher's sense of the classroom,
2. non-verbal feedback from students and
3. reciprocal visual contact between students and teachers.

The three subthemes are thus specific expressions of how the teachers experience their practical sense. The subthemes provide a path to manifesting the underlying elusive concept of practical sense. The teachers tended to focus on how the lack of practical sense affected their teaching in a synchronous online setting as this was the most widespread teaching format. However, many teachers also mentioned how their lacking practical sense also inhibited their opportunities to navigate effectively in asynchronous online formats. In each of the following three sections, we present a table with 4–5 key examples showing how the teachers experienced their practical sense of teaching in relation to the three themes. The quotes are chosen as examples of each subtheme; they are the most representative examples. However, because the subthemes are not mutually exclusive, a single quote may frequently be interpreted to comprise or describe two or all of the categories. To provide complete transparency, we have included the remaining coded quotes in "[Appendix A](#)".

### **Subtheme 1: the teacher's sense of the classroom**

The first subtheme concerns the teacher's sense of the classroom. By "classroom", we refer not only to the physical space of a room, but rather to the symbolic space, which includes auditoriums, digital classrooms/platforms and physical classrooms. Under this subtheme, the teachers expressed how they used their sense of the classroom as a pedagogical tool to guide their teaching. This sense, however, does not seem to be reducible to one of the physical senses, but is instead more comparable to a certain energy in the room or a gut feeling about how the teaching is going. This 'gut feeling' stems from sensory information derived from two main sources (visual and auditory information) being evaluated and measured against the teacher's 'subjective educational theory' or current 'practical sense'.

Even though the sense of the classroom is not reducible to the physical senses, it does appear to be informed by them. In every one of the four quotes in [Table 3](#), we find references to physical sensations. We may understand this by reference to the Bourdieusian concept of bodily hexis, where practical sense as embodied knowledge shapes how the body engages with the physical world (Bourdieu, 2000, p. 141). For instance, teachers 1

**Table 3** Exemplary quotes about the teacher's sense of the classroom (subtheme 1)

Teacher	Quote
1	I never met them, so this sense of the atmosphere in the class—what are they like? Should I repeat it if they are silent, or does it mean that everybody is on board—that is much easier to detect, when you are standing in front of people [physically], right? It has been enormously frustrating
2	In the face-to-face teaching, I have the full overview of the entire class. Then I might say, all right, I notice this group's discussion is drying up. A group in which one person is very dominant is also easily detected. Then I can intervene and facilitate such processes, because I have a continuous overview of what is happening in the room. I can oversee the groups, but in Zoom, I can only be with one group at a time
3	But all the other stuff, when we are looking at each other (...) All the communication, it is also easier [in face-to-face teaching] to give them an earful and say: "Come on guys, you must bloody answer, I cannot believe it!", or to praise them. I mean, all the interaction. Plus, during a [face-to-face] lecture, when you can hear a pin drop, and everybody smiles simultaneously, you get the sense that, now you have them in the palm of your hand. I mean, all that is completely gone, because you cannot see them. [In Zoom] all you can see is that 165 are present. You are then left to fret about that in your little home office
4	It is also because, I like that interaction. <i>That</i> is, what <i>I</i> think is fun. <i>That</i> is what is rewarding. Personally, I also think that you stand.... It [Zoom teaching] does not give <i>that</i> energy, and it does not give a sense of where <i>they</i> [the students] are either. You cannot adapt your teaching, the level, the topics, the themes, where we are going etc. in response to feedback from them. It becomes a little rigid, a somewhat more stereotypical offer

and 3 referred to how the silence of a classroom is used as a pedagogical tool. As teacher 1 explained, silence may be interpreted either as if the students fail to understand and sit defeated in silence or as if the students are leaning in with interest. In the example described by teacher 3, the teacher interprets the silence as the latter and uses the silence as a cue to continue the lecture. However, since the silence has no meaning by default, the teacher's reaction is highly contingent on the teacher's body being present in the room. This is exactly the function of the practical sense. Thus, silence in the digital bodyless room becomes a useless or even confusing piece of information.

In the example given by teacher 2, the teacher raised the concern that teaching through Zoom eliminates the teacher's overview of the classroom. When the teacher teaches through Zoom, she must focus her attention on one group at a time, whereby she loses her overview of the class. This overview is an amalgam of sensory impressions that provides the teacher with information about when to step in and help a group or when to move on to the next exercise. Overview facilitated by physical presence is actively used as a pedagogical tool. When the body is removed from the practice of teaching and the number of sensory impressions thereby are reduced significantly, it becomes more difficult for the teachers to use their practical sense as a pedagogical tool and to adjust their teaching to the specific situation. To some teachers, the solution to this lacking sense of the classroom is to teach as if they never used it, detaching their way of teaching from their practical sense. To teacher 4 this means that his teaching "becomes a little rigid, a somewhat more stereotypical offer".

Yet the practical sense is not only a tool, but also a matter of *taste* (Bourdieu, 1998, p. 25). When the teachers are exercising their practical sense, they are, in fact, expressing a taste or preference for a certain way of teaching. Even though this taste is a result of the dialectical relation between the teacher and the teaching context, the exercise of this taste helps the teachers find meaning in their teaching practice. This means that disconnecting

the teacher's practical sense from his or her teaching becomes a question of motivation and meaningful practices: "[I've] always loved teaching, always prioritised it. I've done lots of extra teacher training, *but I did not enjoy teaching this semester. It was no fun to record lectures*" (teacher 14).

Not all teachers seem to think that separating the body from the teaching context is a significant problem, though. One teacher expressed some degree of ambivalence regarding this experience: "The bodily part of teaching is gone. So, I kind of feel less vulnerable on Zoom. But the downside of that is that I don't get that feeling of relief afterwards" (teacher 12). Even though this was the only teacher expressing this sentiment, she does raise a very interesting point: teachers who do not feel comfortable in face-to-face teaching might feel less vulnerable when teaching digitally. The same teacher also expressed the fewest reservations when asked if she would like to continue online teaching. Even though she acknowledged the consequences of eliminating "the bodily part of the teaching", the benefits gained from the decrease in vulnerability weighed heavier in this case.

## Subtheme 2: non-verbal feedback from students

The second subtheme relates to the basic structure of teaching: the archetypical relation between students and a teacher, an activity intended to teach students something that contributes to a change in their capacity. Even though teaching is characterised by a teacher's intentional activity, it is also a relational activity in which students' responses to the teacher's intentions and actions affect the teacher's pedagogical judgements and task perception. In fact, it is only the presence of "students that makes the teacher a teacher; that allows him/her to enact teaching" (Kelchtermans, 2009, p. 262). According to Kelchtermans, to most teachers, students are the first and most important source of feedback; consequently, verbal and non-verbal communication with students is vital for teachers' immediate decision-making during the lectures; e.g., decisions about how to continue or repeat explanations and question sessions, or decisions about the timing of content delivery in the teaching.

But what I do feel when I have the students in front of me physically, is my ability to read them. What I mean is, without them even uttering a word, I can see if they are tired or if they do not understand etc. And that is what I use quite a lot. I will then say: 'Was that clear?', 'Should we go through it again in a different way?' I cannot do that on Zoom (teacher 8).

This second subtheme is different from the first subtheme in that it addresses the observable doings of individual students perceived by the teachers. It also separates itself from the first subtheme in the level of analysis at which the teacher operates. Whereas the first subtheme regards a meso-level of attention towards the atmosphere in the classroom, the second reflects the teachers' attention to a micro-level, i.e., the relation between the teacher and actual reactions or responses from one or more students (see, Table 4).

**Table 4** Exemplary quotes about non-verbal feedback from students (subtheme 2)

Teacher	Quote
5	Interviewer: Why is it, that fatigue sets in? Respondent: I think this inter-personal energy, which is generated when people meet, is lacking. It is difficult to compensate for. It is also difficult to relate to so many faces on a screen without being able to see the body language
6	Normally, I would be able to see a reaction, and it would not feel so unnatural to proceed without any response. The lack of feedback has been difficult. A problem for me, I think. I need my audience, somehow. I know they are there, and it <i>was</i> possible to drag something out of them, although with delays and reduced responses
8	I am less involved with them. It is a concrete challenge in Zoom, that I cannot see their faces. I cannot read their faces. That is one thing. But that is just me wanting to be close to these young people
10	A number of issues, which I was previously unaware of, has come to my attention during lockdown. Like my need to monitor students' progress, so that their learning may somehow be optimized. That became clear, as I felt the need to introduce Monday morning meetings, post more announcements in the learning management system, and administer evaluation questions at the end of each session
13	In addition, I think it was difficult to get a sense of whether they understood it or not. Except when <i>they</i> contributed, when tables were turned. When they returned more or less sensible replies to questions, I got the feeling, that there must be at least some of them, who are listening. Otherwise, it very easily ends up being me simply speaking to a screen working my way through my script

The first two quotes exemplify teachers' reflections on the absence of non-verbal responses and reactions from the students such as body language, gestures and facial expressions. Teacher 5 talked about a fatigue related to trying to interpret the very few non-verbal cues from the students' tacit facial expressions detached from the remaining (off screen) body language; and teacher 6 found it "unnatural" to keep on teaching without responses from the students as a sort of approval of his task as a teacher. In a Bourdieusian sense, these experienced teachers were in a position where they felt disengaged from the 'natural' game of teaching, because the 'natural' or doxic game of teaching relies on observable immediate responses and reactions from students.

The two quotes provided above illustrate that when verbal feedback is limited, non-verbal feedback becomes even more important as a pedagogical tool upon which teachers base their decisions for actions. However, due to the restraints of Zoom and similar platforms (the staggered position of the camera, the display of the limited number of students and the students' possibility to turn off the camera), the dislocated face-to-face contact and the digitally mediated non-verbal communication do not compensate for diminished verbal

feedback. The lack of student feedback restricted the teachers' pedagogical judgements and challenged their basic assumption about what teaching essentially is, if it is not a relational and communicative activity, cf. Kelchtermans' argument that students are the ultimate *raison d'être* for teachers and their teaching. Furthermore, some teachers in this study, for example teacher 8, turned their frustration towards themselves instead of pointing towards the structural causes when they explained who they were when they taught in a Covid-19 situation. The narrative account from teacher 8 illustrated how the identity work of this teacher was challenged by the disrupted teaching contexts. In the quote, she constructed a self-understanding as a teacher 'wanting to be close to these young people', and in this way she turned a systemic challenge into an individual challenge in the negotiation of her teacher identity.

In the same vein, teacher 10 made efforts to compensate for the lack of direct physical contact with the students by making herself available to the students on Zoom throughout her working hours. In her narrative account of this, she also turned these challenges towards her teaching identity.

### Subtheme 3: reciprocal visual contact between students and teachers

The final subtheme of the practical sense of the teachers is the reciprocal visual contact between students and teachers. Even though it may be argued that visual contact should be viewed as an element of nonverbal feedback, this subtheme separates itself from the former in its exclusive focus on the gaze. The reason for considering visual contact as a separate subtheme lies in the data-driven structure of the analysis where teachers overwhelmingly focused on "seeing" as an important source of knowledge (see, Table 5).

**Table 5** Exemplary quotes about reciprocal visual contact (subtheme 3)

Teacher	Quote
7	Still, I think I have a different sense, when I see them in the auditorium. I can look them in the eyes. I can see them nodding affirmatively or staring blankly
9	But I would say, whenever you have more than ten people on, you tend to cut the video stream. And that creates a weird scenario because then it's like you're talking to a black space. And that can be very artificial. Because you don't know when to pause, you don't know, you know, are people engaged? Are they still listening? So, what I would typically do is just stop and say, just give me a thumbs up if you're still there. And then everybody would use the, you know, the icons
6	As mentioned, I need that audience, and the students also need to see me, while I speak. So, I would not. I think it is particularly problematic in lectures if there is not a common focus amongst students
10	And if their videos were not on, I would ask, if they would turn them on. It was very important, that we were able to see each other. Definitely a big, big difference there. One student really struggled with showing her face on video. And you know what, I just do not have the same relation or anything...not with her, in the same way as I did with some of the other students, so that has actually been of great significance

As teachers in the above quotes express, “whenever you have more than ten people on, you tend to cut the video stream”, which creates a “different sense” and a “weird scenario” where the teacher is “talking to a black space” without knowing if the students are engaged. In both of the first two quotes, the teachers are either implicitly or explicitly drawing a connection between “seeing” and “knowing”. Lakoff and Johnson (1999) argue that seeing is often used as a metaphor for knowing, because vision is the physical sense from which individuals receive the greatest amount of knowledge. This argument also aligns with Bourdieu’s idea of bodily hexis, where the social conditions and structures in which the body is situated shape the body and, in turn, how it is oriented towards the social world, for instance through language or speech patterns. The teachers are equating “seeing” and “knowing” because they have developed a bodily hexis through years of face-to-face teaching. Teacher 7 explained the importance of seeing the students “nodding affirmatively or staring blankly” as a way of knowing what to do next. In this way, the teacher’s didactic choice in a specific situation depends on the teacher’s ability to read, judge and then act. According to Kelchtermans (2009), this ability is an essential part of subjective educational theory, which reflects the teacher’s personal answer to the questions: ‘How should I deal with this particular situation?’ (= What to do?) and ‘Why should I do it that way?’ (= Why do I think that action is appropriate now?). Thus, the interconnectedness between “seeing” and “knowing” is essential for the teacher’s professional self-understanding as a competent teacher and, consequently, for job motivation (Kelchtermans, 2009).

For other more performance-oriented teachers, the reciprocal visual contact provides a means of connecting the teacher with the “audience”, as teacher 6 explained. In this quote, the practical identity of the teacher as embodied dispositions and specifically as a matter of taste becomes evident. To these types of teachers in our study, it is the presence of an audience that makes teaching a meaningful practice, because their practical identity and taste for teaching have been shaped in an environment with face-to-face teaching. The quote from teacher 6 also exemplifies that the teacher prefers to have an audience, even though teacher also 6 projected this preference onto the students. The teacher pointed out that lectures were particularly problematic without a common focus among the students, which may be the case when students and the teacher have no visual contact. Even so, lectures are primarily a monological form of teaching in which the common gaze of the students should have little to no impact on the teaching itself. Therefore, this teacher’s focus on the reciprocal visual contact with the students might be viewed as somewhat paradoxical since teaching through video conferencing actually offers an opportunity for simulating this type of contact. This paradox is illustrated by teacher 10 and the disrupted relation with a student, who “struggled with showing her face on video”. This quote emphasizes that even though video conferencing allows only a dislocated eye contact, it offers a sort of connection with the students and a feel for the students that is lost if the video stream is cut. Consequently, seeing each other’s faces—even if mediated by a video conference—is all-important to generate an authentic classroom for teachers and students.

## Discussion

This study employed a constructivist-oriented narrative investigation of how the disruption of the teaching contexts during Covid-19 affected teacher identity and the 19 interviewed teachers’ experience in the context of health sciences education. Reflecting on their experiences of teaching in the digital and remote online teaching context via platforms such as

Zoom, Skype and Teams, the teachers expressed a novel lack of ‘something’, specifically the sense of the classroom, the non-verbal feedback from students and the reciprocal visual contact with the students. The results raised questions about an overlooked basic condition in teaching, namely that in navigating and adjusting teaching, teachers use their *practical sense* (Bourdieu, 1998)—an incorporated knowledge that refers to ways of doing and handling things using knowhow and a feel for the game (Bourdieu, 1990). Moreover, the actual use of the practical sense is highly motivating for the teachers.

The social structures of higher education, which were well-known to the teachers before Covid-19, gave rise to characteristic dispositions that enabled the competent performance of the social practices we call teaching. For years, the teachers in this study had developed preferences and tastes for the archetype of teaching, i.e. the face-to-face meeting between a teacher and a student about a subject matter to support the student’s learning. If the students’ physical presence is left out of the social practice that we call teaching, then the teachers’ *practical sense of teaching* is severed. The ‘new normal’ of digital and remote teaching disrupts teacher identities by dismantling the practical sense of teaching. We found that the absence of non-verbal feedback from students and reciprocal visual contact with students in the online classroom bars teachers from classifying online teaching as ‘real teaching’. When the teachers are not able to classify teaching as teaching, their *personal interpretative frameworks* become useless as lenses “through which teachers look at their job, give meaning to it and act in it” (Kelchtermans, 2009, p. 260). These findings raise two discussion points: the question of eye contact and the question of teacher identity and job motivation.

### Seeing is knowing: the importance of eye contact as a pedagogical tool

We found that eye contact plays an essential role in establishing an authentic teaching situation. The teachers in this study voiced that eye contact was important to establish a relation to the students, but at the same time expressed reservations about the dislocated character of reciprocal visual contact made during video conferencing. The paradox of the distinction between “real” eye contact and “dislocated” eye contact cannot be directly explained by the chosen theoretical framework for our study. However, other lines of research have shed light on some of the issues of eye contact in online communication, which may be important for teaching in higher education.

Direct eye contact is challenging in many modern video conferencing systems, such as Zoom, Teams, Skype, etc. To establish eye contact, both conversation partners would need to look directly into the camera or webcam, which is typically located in the upper part of or above the screen. However, as humans, we naturally tend to look directly at the eyes of our conversation partner on the screen below the camera instead, which is then captured on video as a downward gaze of typically around 15–20 degrees (Jaklič et al., 2017). This form of parallax distorts the perception of eye contact between conversation partners, which has turned out to have a profound impact on social interactions. Bohannon et al. (2013) reviewed the effects of eye contact in video-mediated communication. Eye contact was found to improve the memory of messages conveyed and conversation efficiency. Conversations with eye contact were found to increase the amount of information being conveyed in a shorter amount of time and with fewer words. In contrast, participants in video conversations without eye contact had a greater need to confirm and check their understanding of one another. The authors also found that a lack of eye contact in video communication may reduce trust among participants, and that trust in different



computer-mediated communication modes was both delayed and more fragile than face-to-face communication. Other aspects of importance for social interactions, such as the perceived emotion expressed by a face, and impression formation were also affected negatively by a lack of eye contact in video-mediated communication. Gaze direction, for example, was found to affect likeability and attractiveness, with participants in face-to-face condition perceiving their communication partners to be more likeable and intelligent than communication partners in the video conferencing condition. Technical solutions, such as: gaze re-direction software, LCD computer displays with integrated camera image sensors between LCD display cells, or hybrid (depth and colour) cameras, which allow for 3D face modelling and gaze-corrected images being seamlessly merged into a real-time image etc., may well help alleviate the parallax problem in future video conferencing systems (Jaklič et al., 2017; Wood et al., 2018). However, in situations where several people are involved in video conferencing, communicating important non-verbal information is even more complicated than in dyad situations (Jaklič et al., 2017). Examples of this complexity in large-group communication was described by the teachers in our study (see, e.g., Table 3 and quotes from teachers 12, 15 and 19 in "Appendix A"), who expressed a perceived need to be able to interpret the faces of the whole student body simultaneously. Crook and Schofield (2017) argued that lecturing is an 'embodied' form of activity, which is multimodally negotiated meaning making. The negotiation occurs as exchanges between teacher and students, not just through writing and speech, but also nonverbally via the use of visual images as well as body postures, movements and gestures. Therefore, 'the lecturer needs to see the audience to monitor their reactions and then to adjust delivery in response' (Crook & Schofield, 2017). Our results seem to indicate that precisely such embodied, multimodal and negotiated meaning making appeared to have been particularly disrupted by the change to lecturing via video conference (see Tables 4, 5). Our findings thus mirror the above concerns about the consequences of the dislocated eye contact and underline the pedagogical significance of embodied teaching, being a matter of the teacher's dependency on direct eye contact and practical sense of the classroom in order to be a competent teacher. Drawing on a Bourdieusian framework, we may regard embodied teaching as internalised teaching practices turned into dispositions as a basic pedagogical condition, which is dependent on the teacher's and students' bodily presence in the classroom. In this regard, Bourdieu's concept of *illusio* highlights the importance of an agent's immersion into a field of practice to stay motivated and engaged in this practice (Bourdieu, 1998). *Illusio* is an agent's sense of the 'game' and the capability to acknowledge and engage in a particular field, such as the field of teaching. Thus, *illusio* describes the non-conscious experience of being caught up by the game and finding it interesting and fulfilling to take part in. Consequently, the findings in this study suggest that teachers' sense of teaching as a game worth playing—or in short: *illusio*—suffers a loss. Here, the loss of *illusio* is not due to changes in the teacher's practical sense but rather to material changes (e.g. digital and remote teaching) in the field of educational production. As the field of educational production is subject to material changes, the homology between the teacher's practical sense (*habitus*) and the field of teaching is displaced. This displacement causes the teachers to experience a feeling of loss of their self-identification as health science teachers. This is not a loss in the sense that something has been taken from the teachers, but rather that the broken homology between *habitus* and field leaves the teachers disconnected from their field. In short, the loss is the teachers' reflexive reaction to dysfunctional pre-reflexive dispositions. In this respect, the teachers must once again enter a process of "becoming a health science teacher" in order to re-establish the homology.

## Affirmation of teacher identity promotes job motivation

We found that teachers use non-verbal feedback as a pedagogical tool to adjust their teaching throughout teaching sessions. This is typically done through cues such as facial expressions, body language and gaze direction. However, teaching by video conferencing tends to minimise the transmission of non-verbal cues, which limits the teacher's ability to read the students and act accordingly, i.e., the teacher's subjective pedagogical theory (Kelchtermans, 2009). Furthermore, some teachers tended to direct these challenges inward towards their professional self-understanding, noting that the need for non-verbal feedback from the students was simply a teacher preference (see, e.g., quotes from teacher 10 in Results Subtheme 2 and quotes from teachers 2, 6, 7, 14 and 19 in "Appendix A"). As a consequence, failing to meet these challenges becomes a failure on the part of the individual teacher, which could potentially have implications for teacher identity and thus for both teacher self-efficacy and job motivation. In our data, some statements certainly seemed to indicate decreased levels of motivation for teaching due to disrupted teacher identity (see, e.g., quotes from teachers 5, 8, 11, 14 and 16 in "Appendix A"). Our findings echo existing literature on interaction between non-verbal cues and teachers' job satisfaction and self-efficacy. For example, Mottet et al. (2004) found that 26% of the total variance in teacher self-efficacy scores and 53% of the total variance in teacher job satisfaction scores were attributable to the combination of students' verbal and nonverbal responsiveness. Non-verbal responsiveness alone accounted for 19% of the variance in teacher self-efficacy and for 51% of the total variance in teacher job satisfaction. Similarly, Zee and Koomen (2016) reviewed and integrated the findings from 40 years of teacher self-efficacy research. They also found teacher self-efficacy to be positively associated with practices related to classroom quality. In addition, their results suggested that teacher self-efficacy influences teachers' job satisfaction, which is important for teacher retention. Visual cues are important not only in auditorium or classroom settings; they are also a recurrent feature of trainer-trainee interactions in the operating room (Cope et al., 2015). For craft professionals such as surgeons (Cope et al., 2015; Kneebone, 2016) and musicians (Tsay, 2014), learning to interpret and make use of visual cues are key to their sense of competence. Our findings suggest that academic teachers also make use of visual cues in adjusting their teaching to the students' responses; and without those cues, they feel less competent and less in compliance with their teacher identity.

## Methodological strengths and limitations

The strength of our study is its foundation on a solid theoretical framework that seems to be innovative and original compared with current research on teachers' experiences of the Covid-19 lock-down. However, our study also faced some challenges. The small number of health sciences education teachers at the two universities makes it difficult to keep informants anonymous and we have therefore decided not to reveal demographic and other data that might have been relevant to the reader. The interviews were conducted in June 2020 only few months after the Covid-19 lock-down, and at that time the teachers had only three months of experience with the digital and remote teaching formats. Since we were unable to foresee the lengthened period of lock-down, we did not plan to re-interview the participants at a later point in time. Re-interviews after another 3–6 months (when writing these lines (May 2021), face-to-face teaching at the two universities in this study was still prohibited) might have produced new themes. On the other hand, a strength of our study was

that it captured the immediate reactions on how disrupted teaching settings affected teacher identity while teachers were in the process of adapting to the 'new normal'. In the present study, we made use of purposive and strategic sampling, which is a non-representative method of recruiting. Since we only talked to teachers who were teaching in auditorium and classroom settings, it is very possible that clinical teachers and teachers in other disciplines would have different experiences, because academic teacher identity is contextually embedded and encapsulates the personal, professional and societal dimensions of being a teacher. That said, in this qualitative study, we adhered to analytical generalisation (Kvale & Brinkmann, 2009) and transferability (Malterud, 2001) that rest upon rich descriptions and thorough theoretical analyses rather than statistical generalisability, and we thus aimed to generate in-depth knowledge about a phenomenon that is common to many teachers in similar circumstances.

## Conclusion

Based on qualitative analysis of how teachers experienced their teaching practices in the wake of the Covid-19 lock-down, this study established two overlooked yet fundamental premises for health sciences education: teaching is an embodied affair and teacher identities are sensitive to structural changes in teaching contexts. The Covid-19 lock-down of face-to-face teaching at universities has reminded us that direct eye contact is an important pedagogical tool. This study contributed to furthering the discussion on the possibilities and limitations of online teaching. Bearing in mind the sociological dynamics outlined in this study, teachers and directors of studies should consider why and when online teaching may be preferred to face-to-face teaching. This study clearly emphasises that not only students' learning and well-being but also teachers' job motivation and professional identity should be taken into account when organizing educational activities. In the long term, universities should consider how (if possible) to cultivate sustainable and adaptive teacher identities that are compatible with a higher degree of digitalisation of the learning environment. This study contributes to the field of faculty development in health sciences education by offering a combined narrative-biographical and sociological understanding of how continuing professional development, such as the teachers' learning and application of new technologies, is influenced by and influences teacher identities. The theoretical combination of Kelchtermans' concept of a teacher's *personal interpretative framework* and Bourdieu's notion of *practical sense* can serve to inform future research by offering a new way of conceptualising teacher identity that goes beyond the reflexive construction of identity and includes the pre-reflexive dispositions as important organising principles in the development of teacher identity. In the future, we recommend increased organisational awareness on how faculty development practices may need to both accommodate and work with teacher identities. Faculty development activities directed at face-to-face teaching may actively seek to scaffold and develop teachers' practical sense (i.e. their sense of the room, non-verbal communication skills and eye contact) because it is important for their teacher identity and hence for the time they tend to invest in development activities, and ultimately for the quality of their teaching (Beauchamp & Thomas, 2009; Steinert et al., 2016; Trautwein, 2018; van Lankveld et al., 2021). Faculty development activities directed at online teaching may need a much stronger focus on scaffolding experienced teachers' ability to establish contact and relations with the students in the online classroom. More importantly, faculty developers should explicitly address the teachers' professional self-understanding

and the perceived link between online teaching and the development of teacher identities to explore how we may develop a practical sense of online teaching. This finding points to the potential harboured by blended learning formats where teachers should consider not only how to balance students' in-class and out-of-class activities but also teachers' in-class and out-of-class contact and relations with students. More research on these topics is warranted to generate knowledge about how the development of teacher identity impacts retention of teachers in research-intensive universities in which online teaching is advancing.

## Appendix A

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### Teacher Quote

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|---|--|
| 1 | That was what we talked about before, this distance, that you cannot get a sense of where they are as a group, right? This was clearly amplified by their turned-off cameras   |
| 2 | That is when you cannot...that is the non-verbal communication. But when you are talking to people, who are not even...well, I am talking to you right now, and you are two-dimensional, I can live with that. I prefer talking to people, who are three-dimensional, and the fact that I am talking to people, who are not even visible in any way...   |
| 2 | I had to get used to the new platform [Zoom] and to reorganize of course, but the greatest challenge, in my opinion, was not having the direct communication with students. We are used to having to use new tools constantly, so that was just like, well, let's do that then. But the fact that I did not have that direct communication, that I was unable to feel...to get the non-verbal sense of what was happening in the group, and how they received the teaching, that was what I found difficult. I was talking into a void, because they often had their videos turned off, so you have no idea of what is happening at the receiving end. If you are in a physical classroom, there is a great deal of body language you can either interpret or misinterpret, but at least you can see what is happening, and you can have eye contact. That is the greatest challenge |
| 2 | And to have these spontaneous moments too, where you tell a joke, and a lot of the non-verbal communication, which is important, a lot of this is really difficult this way [in Zoom]  |
| 5 | Under normal circumstances, I leave a teaching session charged with positive energy after having been together with so many young people, who are ambitious and eager to learn. There would typically have been lots of new comments, which would have made me think new and different thoughts. I can no longer feel the kind of elevated energy levels, which I used to leave with [...] It is not because the investment is higher, you just don't get much in return. And that of course affects what can be delivered the next time you teach. There has been a noticeable decrease in engagement and enjoyment of logging into yet another virtual room amongst all Associate Professors and Professors here   |
| 6 | I can waffle away for hours on end, but I cannot see them, so I don't know whether they have fallen asleep, or if they are lost, which you will notice, when you stand before them physically. You do not get the same opportunity to ask: 'did you get that?'. I tried a couple of times, but I just felt I was met with silence. Then I was unsure of, what that meant, whether they had all fallen asleep, or whether they were just afraid of responding, because I could not see them. Had we been together physically, then I would at least have been able to see, whether they were awake. They usually are, and they probably were in Zoom too  |
| 7 | Eventually, as my experience grew, I became more occupied with whether students learned what is required, because I have missed being able to see them and get the direct feedback like in the face-to-face teaching   |
| 7 | The technical aspects have worked well once you get acquainted with it. I also think the pedagogical side of it has surprised me positively. But having said that, if you ask me what I prefer, it is to be present physically while I teach students  |
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Teacher	Quote
8	What I do sense when we are together physically is my ability to read them. Without them having to say a word, I can see if they are tired or whether things are not moving along etc. Then I would typically say 'Is this clear?' or 'Shall we go through it again?' or 'Should I try to explain this in another way?'. I would often ask questions like that normally, but that does not work in Zoom
8	But I want to say, that's not why I became a university teacher. I became a university teacher to be in contact. If that's the case, then I'm happy that there's only three years left until my retirement, so I don't have to do that
9	(...) when we're doing a face-to-face lecture, then we call it...we'd like to call it an interactive lecture. So, it's not a monologue. You know, we would talk and then we would ask questions, and we would then maybe have like a little discussion that develops, and then we would continue again. We kind of meander through the lecture. But with zoom you can't do that if you lose the face-to-face, you know, the visual. But even if you have the visual, you sometimes don't get that interaction. So, there is something there, that you would lose. It doesn't make me feel like a bad teacher though. It's just, that's how the platform works, with many students
10	Initially, I had to start from scratch with discovering how to use Zoom as a medium. How do we get the good interaction, where everybody is given a chance to speak—basic stuff like that. It is somewhat like starting all over again, because the room is different, and the room defines a large part of teaching
10	Before the Covid-19 lockdown, I had an overview of my teaching, and a good sense of where the students were, and what they needed. I could adjust to what they needed in the situation, because I have been teaching similar courses for many years and have experience to draw on
10	Several things, which I have not paid attention to before, dawned on me as the semester progressed. Like my need to 'have my finger on the pulse' regarding where students were, so that their learning could be optimized. That became clear to me, as I felt the need to implement Monday Morning Meetings, post more announcements on the learning management system, and ask more evaluative questions after each teaching session. I had to because I had no prior experience to draw on
10	I toured the breakout rooms in Zoom, which was a different experience. Normally, if you are in the same physical space, you can hear what is going on in different areas of the room, and you will be able to extract points from different discussions, which will be relevant for everybody. I did not have this possibility in Zoom, so I toured the breakout rooms instead. They were of course able to call on me if they felt the need. That would under normal circumstances be a situation, where we would have a lot of interaction. However, in Zoom the distance was greater because they were in the breakout rooms. It is also more invasive, when you suddenly barge into a breakout room in Zoom compared to what happens in the physical space
10	There are physical artefacts, which can be integrated with physical teaching, but I have not found a solution to that in Zoom, or I have at least not had the extra time or energy to find a replacement solution
10	There is less room for variation in students' group interactions in Zoom. I had to get used to that. When we are together in a physical room, I like for us to move around and talk to different people, so that we are not just seated in our own chairs
10	Interviewer: Is the physical meeting important for your own social and mental wellbeing, your enjoyment of being a teacher?
	Teacher: Yes, but to a lesser extent. I do think it is important, but it is primarily important because I can see that they learn more that way
10	I am still contemplating what it is precisely. We had a very well-functioning course with happy, active students who learned a lot. But still, something was missing. There was something with the relations, which was unusual. It is difficult for me to pinpoint exactly what it was. We tried to evaluate it. I have said several times during the course, that 'it would be so cool, if we could meet physically'. It is something, that I cannot describe

Teacher	Quote
11	Interviewer: What have you lost? Teacher: The contact with the students. When the group is small enough to really get into a personal contact, into a conversation with them, that I prefer, because then I get feedback on what their capabilities are, because that changes every time, and then I can adjust and that I can't do now
11	I think, I feel good as a teacher, when I manage to build a contact with a group of students, with as many as possible in the group
11	What I described about what made me feel good, that's not happening during the lockdown or to a lesser extent. I did one course real time on zoom, and I did that one because it was a smaller group of students. So, they started to communicate—that was OK. But with the two hundred students lecture, I think then, that's not possible anymore
12	What I found difficult about Zoom was its lifelessness. Quite a number of my students have had their cameras turned off. We are not allowed to force them to turn on the cameras, and that is quite...I think, there is too little response, even if some of them are actually quite active, raise their hands, and write in the chat. So, it has really dawned on me, what it really means to stand in a physical classroom
12	It's not because I do not know what to say, or what to do, or because I am not properly prepared. It's because something always happens in that special room. And Zoom is a different room in which less can happen
13	Well, once again, the lack of the feel for the students tends to be negative, because you do not sense whether they are on board or not [...] All in all, I did not have the same overall sense of the group. You do not know about the non-attenders. Where are they? Is it completely hopeless?
14	I have always loved teaching, always prioritized it. I've done lots of extra teacher training and I did not enjoy teaching this semester. It was not fun to record lectures. There's no... it was important for me when doing the zoom discussions to have at least ten students turn on their cameras, so I was getting some visual feedback of, OK, they're engaged, they're not engaged, they're curious or what The absence of everything that makes teaching fun was very hard
14	I think the ones who did [turn their cameras on] largely wanted to see each other and be seen by each other
14	I think I need them to like me, for the teaching to work well
15	Well, face-to-face teaching is always the coolest, my sense of the room is much better
15	It is obvious, that one cannot feel them in the same way. But then I asked for them to turn on their cameras and turn off their sound. The cameras had to be on, because we needed to get a sense of each other, and we said good morning to each other etc
15	Well, lecturing in front of a black screen is a problem, because as I see it, the lecturers' ability to sense the auditorium is the positive feature [...] And that is lost, if cameras are turned off
15	So, their discussions in the coffee breaks, which contribute to a reflection and discussion subject like this one, are also part of what has been lost
15	One cannot use irony in the same way because it's something which exists in the room
15	I can feel it in the room. I usually compare it to being a lion tamer. You walk in and then you sense—and I was poorer at that when I was younger—whether this is just 'one of those days' for the lion, or whether things are running smoothly. So, such a wall is palpable. Medical students are fantastic that way. Sometimes they are dizzyingly direct, at other times you wonder whether you entered Sunday School by mistake
16	I just think, it is better teaching, when I am present physically. I would not like to be some sort of correspondence course teacher or some such, because it is not as fun
16	If you have a team player personality, this is not as much fun. It is not that I taught badly, it is just that you are sitting down, and you cannot use your body

Teacher	Quote
16	If my university came up with some kind of cutback initiative, saying: "Things are going well, you have made 47,000 videos already, so this is the way forward"—such ideas have been aired before—I would think, they would be throwing out the baby with the bathwater. We will not get the relations with the students, and it seems weird, that you should be able to become a doctor through a correspondence course
16	I have experienced tutorials supposed to cover students' exam related questions, in which students have been very quiet with their cameras turned off, and I have wondered what was gained
16	Some of the videos, I had to redo, because I thought they were not working. I guess, that reflects, that I thought, I was not expressing myself adequately. I do not think you get the direct feedback from students. But then I got an email this weekend from a student, who wrote: "Thank you very much for all the videos, they have been a great help"
17	Potentially up to 78 students, but about 60 or so attended the Zoom lectures. I had no feeling of their presence whatsoever. Except when I asked them how well they could hear me. There was maybe one question from them, otherwise just black screens and turned off microphones, but apparently it worked well. At least they got the required information
17	I prefer teaching smaller groups. I doubt whether that has got anything to do with Zoom. It is similar under normal circumstances because I can read students better. I also believe that they receive better feedback, which is a little bit more addressed to the individual
17	Interesting observation: I have been reflecting, and I think that I have probably become a little more socially orientated in my teaching than I was previously. Normally, when I walk into a classroom at university, I concentrate on delivering knowledge and covering content, and I do not tend to worry too much about the extra-curricular aspects of students' lives. I have been forced to consider these aspects too during the lockdown
19	You can feel they provide some....you can see that it resonates with them, and you get the feedback, that makes you feel, that they want to learn, and that they found it exiting and good
19	[compares the lecture hall and Zoom] Well, I love...I think, it's so wonderful, when people approach me [in the auditorium during breaks in lectures], because they are curious. I think it [Zoom] is a lifeless format because I cannot feel them
19	I was lucky because I managed to complete all my teaching in February [before the lockdown]. In addition, I have had large group sessions, which may also have helped...The teaching in February is different from that in March, April and May. It gets a bit technical now, but the course has two parts. In February, there is a two-week introduction to chemistry, during which, we spend much time together. I circulate, while they complete calculation exercises. I circulate and chat with them, while they calculate quite independently. This occurs in large group, and I got to know some groups really well. That has probably meant, that they approached me in a different way after lockdown, because they remembered me, both as the course leader, and as the guy who was there to explain
Interviewer: The difficulties with establishing trust online, is something we hear a lot about.	
Online teaching works best if trust is established first	
Teacher: Yes, I think that was, what I perceived	

## Appendix B

Interview themes	Interview questions
Initial questions about teacher's current situation and educational context	<ol style="list-style-type: none"> <li>1. Which employment position do you currently hold?</li> <li>2. How many years have you taught at university?</li> <li>3. Which programme(s) are you affiliated with?</li> <li>4. Which course(s) do you teach?</li> <li>5. How would you normally teach the course(s)?</li> <li>6. How have you reorganized your teaching during the Covid-19 lock down period?</li> <li>7. Have you used new teaching tools during the Covid-19 situation?</li> </ol>
Questions investigating the teacher's experiences with the reorganisation of teaching	<ol style="list-style-type: none"> <li>8. What has been your greatest challenge?</li> <li>9. What have you gained owing to the restructuring of your teaching?</li> <li>10. What have you lost due of the restructuring of your teaching?</li> <li>11. Which experiences will you take away?</li> </ol>
Questions investigating the teacher's experiences of how the Covid-19 situation affected his or her teacher identity	<ol style="list-style-type: none"> <li>12. If you think back to your role as a teacher before the Covid-19 lock down, which situations would make you feel like a 'good' teacher?</li> <li>13. If you think back to your role as a teacher before the Covid-19 lock down, which situations would make you feel like a 'bad' teacher?</li> <li>14. What means the most to you as a teacher?</li> <li>15. What do you think characterises you as a teacher?</li> <li>16. How has the Covid-19 lock down affected your understanding of yourself as a teacher?</li> <li>17. If you look back at the latest few weeks of teaching during the Covid-19 lock down, which situations have made you feel that you were a 'good' teacher?</li> <li>18. If you look back at the latest few weeks of teaching during the Covid-19 lock down, which situations have made you feel that you were a 'bad' teacher?</li> </ol>
Questions investigating how the Covid-19 lock-down has affected the teacher's attitude to online teaching	<ol style="list-style-type: none"> <li>19. The Covid-19 situation has caused all teaching at university to be reorganised as online teaching i.e., either as synchronous online teaching via Zoom or Teams (or other platforms), or as asynchronous teaching via videos or other materials made available on Blackboard etc</li> <li>20. What is your experience with using these formats/tools?</li> <li>21. Have you changed your attitude towards these formats/tools in the recent weeks?</li> </ol>
Concluding questions	<ol style="list-style-type: none"> <li>22. We have talked about your teaching and the reorganisation of it. Is there anything you would like to add, which we have not covered at this point?</li> </ol> <p>Thank you very much for your participation [Remember to sign the consent form]</p>



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