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ORIGINAL PAPER

The professional bodies of VET teachers in the context of simulation-based training for vocational learning

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Abstract

It is argued that the use of high-fidelity simulators is educationally effective, since students are able to work more independently and can better control their learning. Therefore, simulations can be used as a teaching method to facilitate and ease teachers' work situations. This raises questions as to whether teachers' professional bodies are a bounded physicality, or whether we can understand teachers' professional bodies in practice in terms of enactments? This article analyses and discusses the enactment of VET teachers' professional bodies in the context of vocational and simulation-based training. The empirical material is based on ethnographic observations in three classes in two different vocational education programmes at two upper secondary schools in Sweden. Three different cases are presented and analysed as examples of how VET teachers' professional bodies are enacted. Guided by a practice theory perspective (Schatzki, T. R. Social practices: a Wittgensteinian approach to human activity and the social (1996), Schatzki, T. R. The site of the social: A philosophical account of the constitution of social life and change (2002), Schatzki, T. R. & Natter, W. Sociocultural bodies, bodies sociopolitical. In T. R.Schatzki & W. Natter (Eds.), The social and political body (1996), the study shows that VET teachers' professional bodies are enacted in multiples, distributed, and delegated in an interplay between the teachers, the students, the simulator, and its material set-up. In these enactments of professional bodies, VET teachers embody both a teacher identity and a previous vocational identity, which they perform simultaneously depending on the educational situation.

Keywords Teaching practice · Teachers' professional bodies · Practice theory · Simulation

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Introduction

The use of simulators as a method of supporting professional and vocational learning is growing in popularity, marking the emergence of a new VET teaching practice (Nyström & Ahn, 2021). There is extensive research concerning the outcomes of simulation training, concluding that it is an effective teaching method for students to train on specific tasks, apply knowledge, and develop their ability to work independently (e.g. Chernikova et al., 2020; Cook et al., 2011; Issenberg et al., 2005, cf Jossberger et al., 2015). Therefore, simulation training might facilitate and ease teachers' work (Nyström & Ahn, 2021). There is also a discussion and concern as to whether the simulation training will be able to substitute learning with an authentic learning object (e.g., driving in a real car or a patient), and what role teachers will have in such a teaching practice (cf, Gustavsson, 2021; McKenna et al., 2011; Persico & Lalor, 2019). However, research has overlooked what teachers' professional bodies do and mean in the context of simulation training. The aim of this article is to analyse and discuss the enactment of VET teachers' professional bodies in the context of vocational and simulation-based training. The research questions are:

- what kind of different interplays between teachers, students, the simulator, and its material set-up can be observed in simulation training?
- how are teachers' professional bodies enacted?

In line with a practice theory perspective (cf, Green & Hopwood, 2015; Schatzki, 1996; Schatzki & Natter, 1996), the "professional body" is, in this article, seen as something enacted, performed and recognised by others in a professional practice. A further exploration of the concept will be explained later in this article.

The development of simulators influences what it is possible to simulate and how learning objects can be learned, creating new pedagogical possibilities and practices within VET (Ahn & Nyström, 2020; Gustavsson, 2021; Lucas et al., 2012). For example, a high-fidelity simulator used in vocational education and training (VET) is a forest harvester simulator, equipped with the same control system, keyboard, and seat as the authentic machine. Focusing on the technical aspect of the simulation, however, there is a risk that the complexity of teachers' work and the interrelation between the teacher, the student, the content, and the particular teaching method could be ignored (cf. Holmberg et al., 2018; Kjellsdotter, 2020). Research emphasises that the teachers, and their knowledge and attributes *have an important role* in successful implementation of new teaching and learning tools in teaching practice (cf, Dagnino et al., 2018; Nikolopoulou & Gialamas, 2015; Spiteri & Chang Rundgren, 2020). A teacher's ability to conduct simulation training is stressed as crucial for teaching to be successful. The teacher's role as a facilitator of learning is often alleviated, but so is the need for teachers to set learning goals for the specific training, and to decide on relevant content as well as how to organise and lead reflections in order for the simulation training to be successful (Dieckmann et al., 2009; Nyström et al., 2016; Tosterud, 2015). Furthermore, Tosterud (2015) states

that the students need to experience their teachers as experts to perceive the training to be legitimate.

Teachers and teaching bodies

This article concerns the enactment of VET teachers' professional bodies in the context of simulation-based training. Research on professional practice shows that when professionals are engaged in practice, doing their work, their bodies play an essential role in what it means to be a professional (e.g., Reid & Mathewson Michell, 2015; Yoo & Loch, 2016). Or as Green and Hopwood (2015, p. 26) argue: "These bodies are not at all supplementary to what is happening; indeed, to a significant if varying degree, they are energising and orchestrating the practice in question, anchoring it and organising it." Becoming a teacher is therefore a process of learning how to use one's body in teaching (Reid & Mathewson Michell, 2015; Yoo & Loch, 2016).

Bodies and affects have been neglected in research. Zembylas (2007) argues that the body cannot be reduced to discourse and points out the need to understand the materiality of teachers' (and students') bodies', as well as what bodies can do and what they produce in teaching practice. Estola and Elbaz-Luwisch (2003) showed that teachers' bodies are on stage when teaching, while also needing to be 'in the audience' to relate to their students. Furthermore, teachers' bodies are recognised by others as 'teacherly' (Reid and Mathewson Michell, 2015). Studies emphasise how complicated and ambiguous the notion of teacher presence in teaching is, and what this means for teachers' ways of understanding and doing their work (Estola & Elbaz-Luwisch, 2003). Watkins (2007) shows that different didactical approaches and ways of teaching enact differences in the teacher's role and the use of their bodies in relation to the material arrangements of the classroom. Reid and Mathewson Michell (2015) emphasise that teaching is an activity where body, mind, and eye come together with the classroom material and context.

One aspect of the research on professional bodies and bodily action is the research on seeing. Drawing on Goodwin's work (1994), various studies focus on professional vision (e.g., Caruso et al., 2019; Rooney & Boud, 2019; van Es & Sherin, 2008). Even though these studies are not necessarily based on practice perspectives, as is the case in this study, researchers who elaborate on professional vision stress that it is not a matter of individual attributes or a capacity, rather an ability that is developed, recognised, and valid in practice (e.g., Lefstein & Snell, 2011; Sherin, 2001). Professional vision is something that we learn and obtain while we become a member of a professional discipline (Sherin, 2001), and it is "…the *ability to notice features of a practice* [our italics] that are valued by a particular social group" (van Es & Sherin, 2008, p. 244). It is a way of seeing and interpreting events that is legitimised in a certain practice. In the context of teaching, van Es and Sherin (2008) argue that a teacher needs to be able to identify what is important and significant in a teaching situation but also the ability to interpret the situation. It involves "using knowledge of the subject matter, knowledge of how students think about the subject matter, as well as knowledge

of the local context to reason about events as they unfold" (van Es & Sherin, 2008, p. 246). According to Styhre (2010) the interpretation also requires the professional to utilise their professional knowledge and experience.

This study focuses on VET teachers' work and the enactment of their professional body. To become a VET teacher, at least in Sweden, the individual needs to have extensive vocational experience and a background in the subject they are going to teach, as well as knowledge about teaching and training (Cedefop, 2019). In that sense, VET teachers have both a teacher identity and a previous vocational identity (Fejes and Köpsén, 2014; Köpsén, 2014). This dual identity is something that VET teachers draw upon as they are able to move between practices of occupation and vocational training, and also in their interactions with their students (Köpsén, 2014).

Theoretical frameworks on professional bodies

In order to analyse and discuss how VET teachers' professional bodies are enacted in the context of simulation-based training for vocational learning, this article draws upon a practice theory perspective (Kemmis, 2009; Schatzki, 2001, 2002). Schatzki (2001, 2002) is often recognised as a contributor to the so-called "practice turn"; i.e., the shift of research interest and approach towards practice as a site for understanding social phenomena. Schatzki defines practice as "…embodied, materially-mediated arrays of human activity centrally organised around shared practical understanding" (2001, p. 11). Schatzki points out that materiality is a part of the practice, not just a tool or a background. The practice consists of arrangements of entities that are humans, artifacts, organisms, and things, as well as organised activities. It means that a practice presupposes a certain arrangement of activities that hang together through "utterance and forms of understanding", "modes of actions" and relations—sayings, doings (Schatzki, 2002) and relatings (Kemmis, 2009). It is argued that these organised activities and arranged entities co-constitute each other. Following these arguments, social relationships cannot be explained as a relationship between only human beings; rather, they are located between different entities and arrangements. Therefore, the actions and relationships in practice cannot be separated from the materiality in practice (Schatzki, 2002).

The key aspect of every practice is bodily activities; i.e., doings and sayings (Schatzki, 1996). Without the bodies that perform a specific way of doing and saying, the practice will not exist. A practice is, in that sense, always embodied (Reckwitz, 2002). Therefore, professional bodies are not an instrument or a tool; rather, they are "active participants" in practice (Green & Hopwood, 2015), since bodies manifest, perform, and enact particular states of affairs; not just as individuals but as part of social practice. Repertoires of bodily actions are obtained, apprehensible, and communicative, as actions within a practice. One aspect is that all bodies in a professional practice are trained and shaped in a certain way, and are thereby recognised as such by, e.g., colleagues and peers (Reid & Mitchell, 2015).

To understand a body in practice, it is necessary to talk about different dimensions of the body and, more specifically, a professional body. A (professional) body is not merely the physicality that composes human beings. It is also a bodily activity

and a lived body that a person experiences. Furthermore, a body is a surface presentation that is "…symbolically and meaningfully punctured, incised, decorated, clothed, done up, disguised, and stylised" (Schatzki & Natter, 1996, p. 5). Schatzki (1996) explains three different dimensions of 'body-ness': being a body, having a body and the instrumental body. *Being a body* is a normal state of being, how one's body works—it breathes, fingers move, it experiences emotional reactions bodily without effort. *Having a body* is a state in which one experiences that one is not identical with the body, but one *has* the body. This is the case when one's body malfunctions or the distinction between the self and the body manifests. The *instrumental body* is when one uses the body instrumentally to achieve a goal or ends. Or as Schatzki (1996, p. 44) argue "it is through the performance of bodily actions that the performance of other actions is constituted or effected". For example, the teachers perform bodily sayings and doings to organise simulation training for vocational learning.

Method

This study was carried out within upper secondary vocational education in Sweden. Upper secondary education in Sweden includes 18 national programmes, 12 vocational programmes, and six preparatory programmes for higher education. All programmes are three years in duration, apart from the technology programme which has an optional fourth year. During their three years of studies, students who study a vocational programme undertake a minimum of 15 weeks of work-based learning (Swedish National Agency for Education, 2022a). Students are aged 16–19 years, but there is also municipal adult education at the upper secondary level which uses the same subject syllabi and knowledge requirements as upper secondary schools.

This study focuses on VET teachers, who teach students specific vocational knowledge. In Sweden, VET teachers combine the teaching profession with practical vocational experiences (Cedefop, 2019). Through teacher training, the teaching profession is strengthened by an academically sound, research-based education. However, around 50% of VET teachers are employed without having undergone any teacher training (Swedish National Agency for Education, 2022b).

The empirical material is based on ethnographic observations of two different vocational education programmes at two upper secondary schools in 2019–2022. Observations were carried out when the students had vocational subjects on their schedules. The researchers followed one class of students ($n = 13$) from the Natural Resource Use Programme (school A) and two classes from the Vehicle and Transport Programme, one at school A ($n = 13$) and one at school B ($n = 20$), from their first year of the programme. These programmes were chosen since they have used different types of simulations to teach vocational knowledge as a part of their curricula. Two types of high-fidelity simulators were used. First, a simulator—of e.g., a forest harvester, a passenger car or a heavy truck—that is equipped with the same control system, keyboard, and seat, as the machine in question. Second, virtual reality (VR) glasses, which are used to learn how to handle, for example, a crane.

The simulation training did not have a fixed form, since the teachers changed the arrangement of simulation training according to different conditions and situations, such as the schedule, access to materials, and learning goals.

In total, the researchers followed the students ($n=46$) and their teachers ($n=12$) during the entire school day (around 90 h) during which the students had their vocational subjects. In addition to field notes, the researchers took photos and video recordings of students training (both in the training yard and in the simulation room) for further analysis. Before they gave their consent to participate, both teachers and students were informed about the purpose of the observations, that they could withdraw their consent without any reason at any time, and how the empirical materials would be treated and stored on an external hard drive.

In line with Merriam (1998), this study can be seen as a case study in which the three classes were treated as three cases, viewing "the case as a thing, a single entity, a unit around which there are boundaries" (p. 27). Cases 1 and 3 are the two classes from the Vehicle and Transport program and case 2 is the Natural Resource Use Programme. In this article, the researchers analyse how the VET teachers' professional bodies are enacted, and three examples have been chosen of how simulation-based training is done in each of the three cases. In doing so, we intend to focus on particular situations to give a rich and thick description of the studied phenomenon. The theoretical perspective directs the analytical attention toward bodily activities; i.e., doings, sayings (Schatzki, 1996), and relatings (Kemmis, 2009), and how these different actions are intertwined as relationships between humans and various material entities (Schatzki, 1996, 2001, 2002). This theoretical perspective helps us make sense of the empirical data and interpret what we observed (Merriam, 1998). In each of the cases the researchers analysed how the teachers' professional bodies were enacted in the interplay between teachers, students, the simulator and its material set-up. In this interplay the teachers' professional bodies are enacted in three ways which are categorised as multiple, distributed, and delegated professional bodies.

Results

In the following results, three cases are presented and analysed as examples of how VET teachers' professional bodies are enacted in the context of simulation-based training for vocational learning.

Teachers' professional bodies in three learning situations

Case 1

It is after lunch, and the students are standing outside the three rooms where the simulators are located. Theo, the VET teacher, arrives and says: "Ok, as I said before, we will continue to practise driving a passenger car using the simulator, as we have done before. You will get the chance to drive the car in the training field. We will continue with the basic exercises, you know, getting control of the car, driving

around cones, practising reversing, and so on. As the programme is designed so that you need to get a 'gold medal' in order to continue with more advanced exercises, just continue to train. Just keep grinding away, since this needs to become ingrained. If you are not using the simulator, you should practise your driving license theory using the app on your smartphone. Any questions? No, ok, let's go!".

Along the longest wall in the small stuffy room, three students sit at a desk, each looking at three screens positioned in a semi-circle in front of them. They are running a simulation, and all of them are using a steering wheel and pedals to drive a passenger car. Two students are sitting on the only chairs in the room and looking at their smartphones. They are all chatting when Theo enters the room with a chair and says: "Hi, how's it going?" The students look up, and some answer him. Theo goes over to Kevin, sits down at his right side, and says: "So now I want you to think of me as a driving instructor and I will tell you what to do. So, let's start this exercise." He points to the screen. During the following 15 min, Theo gives the student instructions in a voice and tone that reminds the observing researcher of her experience of driving with a driving instructor. He emphasises issues such as "think about your road position", "remember to signal so others know where you are going" and "here you need to accelerate". When they are finished, Theo asks Kevin to assess his own efforts on a scale from 1 to 5. Kevin laughs and says 4.5. Theo looks surprised: "Why only 4.5?" Kevin replies: "Well you needed to remind me to signal, and I didn't have the best road position." Theo says: "You are too tough on yourself. I'm very pleased."

Theo goes over to Lisa and sits down next to her. He asks: "So, how are you doing over here?" Lisa replies: "I think it's hard, since I can't practise at home." (Lisa cannot practise driving with her mother, since she does not have a car.) Theo nods and says: "It's ok, you can practise here. Try to spend as much time as you can here in the simulation room. Start the practise program now, and I can help you." Lisa starts the exercise again, and when she starts to drive Theo explains to her in a calm voice how to change gears in the correct way, how to use the clutch, and how to position the car on the road, giving her positive feedback on her driving along the way.

Professional bodies as multiple In the case above, the analysis shows that the teacher enacted multiple professional bodies when introducing and training the students in the simulator. First, Theo, the teacher, enacts the body of a professional teacher by introducing the exercise and relating it to the training as a whole. By doing so he makes the simulation location a part of the classroom by defining the goal of simulation training. The teacher stresses the repetition of training and obtaining the gold medal as a form of preparation for training with a real car. In this way, simulation training becomes an active part in the progression of the student's learning. However, there are not enough simulators for all students to practise at the same time, so the location also becomes a place where students carry out different exercises, practising driving or studying driving theory.

Second, when the teacher enters the teaching location for the simulation, the teaching practice changes since the students now simulates different things together with the teacher. The analysis shows three different enactments of this interplay, in

which the teacher enacts his professional body in multiple ways. As a first enactment, Theo enters the room as a VET teacher, looks around, uses his professional vision to assess what the students are doing, and estimates their driving ability and emotional status. As a second enactment, he does what seems to be a mundane thing, although this is actually an important doing in order to understand what is simulated. Theo, who used to work as a professional driving instructor, places the chair he has brought in on the right side of the student and sits down next to him. At that moment, the material set-up of the simulation changes, and in doing so a certain arrangement of activities follows along with particular sayings, doings; (Schatzki, 2002) and relatings (Kemmis, 2009) as if Theo and the student were sitting together in a car. Now Theo's professional body is enacted and positioned as a driving instructor and he takes on the professional voice of a driving instructor and instructs the student as if they were practising for their driving test. During the training, the student and the teacher keep "suspending disbelief" (Essington, 2010) until the end when Theo asks the student to assess his efforts. Third, the analysis shows another shift in the teacher's professional body as he turns to the other student. Using his professional vision as a teacher (van Es & Sherin, 2008), Theo understands Lisa's level of driving experience, skills, and emotional state. Compared to driving with Kevin, he now lets Lisa train and gives her feedback on her driving as a teacher, stressing that she is there to practise and that he is there for her. By doing so, he defines and creates training in the simulator as a safe space, not only in that students cannot do any harm (Ahn & Nyström, 2020), but also as an emotionally safe space.

This case crystallises how an interplay between a VET teacher's body and a simulator in one location can enact multiple professional bodies. This was done within the space of possibility created by the teacher's pedagogical insight into what was possible to simulate using the technology and with specific students. His professional knowledge as a teacher regarding how to guide, assist, and support students' learning, taking into consideration their knowledge and emotional state, together with his previous vocational experience as a driving instructor, are enacted by two different professional bodies.

Case 2

It is early morning in the corridor outside the simulator room. Sixteen young students are standing or sitting around in the narrow corridor. Mikael, the teacher, tries to get their attention. "Ok, guys," he says. "Group A should follow Marcus right away, since you will work with the clearing saw and group B will stay with me." Group A stands up and walks away with Marcus. Mikael continues: "So the rest of you will work in three groups, and you will take turns driving the forwarders in the training field, unloading timber using the fixed cranes, and practising the same manoeuvre in the simulator." He divides group B into smaller groups and says: "I will be in the training field, but you can reach me with the walkie talkie. You will have one here in the simulation room and you will each have one in the machines."

Mikael stands in the centre of the training field and talks to the two students who are sitting in one of the forwarders. He explains what they should think about when they are driving. He looks over to the fixed cranes at the end of the field, shakes

his head, reaches down into his pocket, and picks up the walkie talkie. "Come in Johnny!" The walkie talkie crackles, and Johnny answers: "Johnny here!" Mikael then explains to Johnny that he should not lift the crane so high since it takes longer to unload the timber. After they finish, Mikael goes back to supervise the students in the training field as they practise reversing. He goes up to the machine, points to the large tyre and says: "When you see this part of the tyre, then you should turn the other way." A couple of minutes later, the walkie talkie crackles again. "Come in Mikael!" This time it is one of the students in the simulation room. One of the students is having a hard time understanding why the simulator says that he did not do the exercise correctly. Mikael tries to get the student to explain what he has been doing, and together they solve it. Mikael now looks at the other pair of students in the field. He goes over and lifts up the walkie talkie. "Come in Sven!".

And so the morning continues…

When it is time for lunch, Mikael goes in and talks to the students in the simulation room. One student wondered why he did not score 0.7 or higher (which is needed in order to advance through the exercise). Mikael goes over to the simulator and points to the screen, telling the student to start the recording of the specific exercise. They watch the recording, and Mikael asks: "When you see this recording, do you think that you handled the crane as you did out in the field?" The student thinks, and says: "Well, I try to tidy up the logs a lot before I lift them." Mikael nods and smiles. "Yes, there you have it, you are too careful. You do not need to straighten up the logs as you do." He points to the screen. "Ok, time for lunch!".

Professional bodies as distributed Analysing this case shows that the teaching practice is divided into three different teaching locations with contrasting sociomaterial preconditions. The first location is the training field outside, where the students are practising driving the real machines. The second is the fixed cranes, which are located next to the training field, but these cranes cannot move since they are fixed to the ground. However, the students can practise unloading the timber in a realistic way. The third location is the simulation room, a small room with two simulators that are set up with seats and a keyboard as in a real machine, but with a screen in front of each simulator.

These three different teaching locations hang together as a teaching practice through the teacher's distributed professional body, which is embodied and enacted through the use of walkie talkies and the teacher's professional vision. In the training field, the teacher's bodily presence makes it possible to give students direct feedback via a combination of sayings and doings; i.e., instructions and suggestions about how to handle the machine. Through his presence in the field, he can also observe the two students in the fixed cranes with his professional vision and use the walkie talkie to give feedback to the students when their doings could be improved. When it comes to the students in the simulation room, they are working in a location where the teacher's body is not present; rather, it becomes manifested when the students reach out via the walkie talkie. This example illustrates how the teacher's body, and its professional ability can be distributed. The teacher cannot see what the student is doing in the simulation training room. However, the teacher still uses his professional vision to support and guide his student. By letting the student describe

his doings, the teacher understands what has happened and what can be done. This ability to understand what happens—why the student has a problem, as well as what kind of problem it is—requires different kinds of knowledge; i.e., vocational knowledge, knowledge about the simulator and the specific exercise, and an understanding of the student's doing (cf. van Es & Sherin, 2008). Compared with the first two locations where the students received direct feedback on their doings, the feedback in the simulation room is also on the students' doings but the feedback process is slower and needs to be initiated by the students.

The analysis shows that in this case the walkie talkie plays an active role in how the teaching practice is played out. However, it is also the entity that prefigures how it is made possible, since it both connects and engages others in practice (Kemmis, 2009; Schatzki, 2002). It connects the locations with each other as an extended classroom where the students can hear each other and the teacher's sayings and feedback to their classmates.

It is not only the walkie talkie that assists the teacher. The simulator video recordings of the exercises allow the teacher to see students' doings, despite not being present when they happened. The video recordings save and distribute the student's doings in different times and enable the student and the teacher to access the specific doings, observe them, and discuss the students' vocational learning.

Case 3

It is early morning and the students have gathered in the open space outside the teachers' rooms. The three teachers come out, and Eric raises his voice: "Good morning, everyone! How are you?" (The students murmur something.) "Today we have a full day ahead of us. We will continue working in our groups, so groups A and B will start with me in the classroom, and we will talk about safety in traffic. Group C will be driving in the field with Conney and Jim, where you will continue to practise driving the car, and group D, you will start with the simulators. Remember the rules: no drinking, eating, or playing around in the room, or you will be thrown out. We can also see what you have been doing while simulating, what exercise you are on or if you do not take it seriously. We will work in these groups until the break and then swap. Ok, let's start."

In one of the three simulation rooms, four male students are sitting in front of four screens and practising reversing and parallel parking. They are chatting and laughing with each other. Kim shouts to Milo: "How are you reversing?!" Milo laughs back. And after a while, the room falls silent. Kim is concentrating on parallel parking, and he does not get it right, so he continues to do it over and over again. Then he sighs and clicks on the screen so he can watch a video recording of the last exercise. He watches it twice, says "Ah, I get it", and starts the program again. Then he gets it right, so the simulator shows the next exercise.

Professional bodies as delegated In this case, the teachers are not present bodily in the simulation room, and it seems like the students are left there by themselves. However, the analysis shows that the teachers have delegated their professional bodies to the simulation within a specific framing. In the introduction Eric enacts his profes-

sional body as a teacher and through his sayings and doings he frames the simulation activity by specific rules—"no drinking, no eating" and, most importantly, "no playing around" —which strengthens simulation training as part of the ordinary teaching practice. If the students do not follow the rules and do not behave correctly, they will be "thrown out" (punishment). By doing so, Eric makes simulation training a part of overall training practice (Kemmis, 2009; Schatzki, 2001, 2002). To further support and strengthen his framing of the training, Eric also emphasises that the teachers can monitor the training. This is made possible because the simulator saves data on each student's driving so the teachers can extract data about which exercises a student has passed and how many times, they have attempted it (completed it or failed). Without being bodily present in the simulation room, the teachers can monitor and control the students' performances in a different time and space than the time and space the students are located in.

Therefore, one can argue that the simulator becomes a stand-in for the teachers' professional vision and the task in keeping the students focused on the task at hand, but the simulator also gives feedback. In this case, the teachers' professional body is occupied elsewhere, making the teachers' feedback delayed so students have to rely on the simulator' immediate feedback on the students' driving in the form of "pass" or "fail", or by grading how well they do the exercise. If they perform well, they get a gold medal. The simulator software also provides an opportunity for the students to evaluate their driving, and thereby a possibility for learning by themselves. What the simulator does, which is impossible while driving a real car, is to allow students to see their driving from different positions. For example, they could see how they parked the car from a bird's eye view. Another kind of feedback are the video recordings, which do not explicitly explain what was right or wrong and require knowledge and competence to interpret and understand how to drive correctly. In this case, William can gain an understanding of why he fails and what he needs to correct in order to pass a specific exercise by watching and analysing his own driving. Thus, it is possible to argue that the students have learned to reflect on their own driving (cf. Lefstien & Snell, 2011: Sherin, 2001).

This case shows how teachers' professional bodies are physically not present in the rooms with the simulators, but are made present through the framing of the whole teaching location but also through the sayings and doings which are distributed and enacted by students and the simulators. The teacher's framing of the simulation training in terms of control is valid as long as the students enact the training, and as long as the training is monitored by support from the simulator.

Discussion

VET teachers are responsible for organising, planning, and enacting their teaching so students will learn their future vocation. The cases above show examples of VET teaching practice, and more specifically how the practice of simulation-based training for vocational learning is enacted. In line with practise theory (Schatzki, 2002), these practices are "routinized bodily activities" (Reckwitz, 2002, p. 251) where teachers' and students' sayings and doings become the core of this social practice.

In practice, the students are supposed to learn their future vocation, or learn to be a particular vocational body (cf. Schatzki, 1996). Therefore, VET teachers and their bodies play an important role in what it means to be a professional teacher (e.g., Reid & Mathewson Michell, 2015; Yoo & Loch, 2016) as well as, for example, a professional truck driver. Focusing on enactment of VET teachers' professional bodies in the interplay between teachers, students, the simulator, and its material set-up, the study's results show three ways of enactments as multiple, distributed, and delegated.

The use of practice theory locates VET teachers' bodies at the core of teaching practice; not only as the physicality of individuals but also as something that has been learned, trained, experienced and recognised in practice (e.g., Reid & Mathewson Michell, 2015; Schtzki & Natter, 1996; Yoo & Loch, 2016). VET teachers' professional bodies are especially interesting, since they have a dual identity (Fejes & Köpsén, 2014; Köpsén, 2014). When the VET teachers enact their professional bodies, they embody both a teacher identity and a previous vocational identity, and—as shown in the cases—one can argue that VET teachers enact different body positions or performances simultaneously, depending on their learning situation (see also Estola & Elbaz-Luwisch, 2003; Reid & Mathewson Michell, 2015). Schatzki's (1996) concept of "being a body" can help to shed light on VET teachers' dual identities. Being skilled in your vocation means to be able to embody the vocational knowledge and skills so "…it sinks into our unified concept of self (Green & Hopwood, 2015, p. 10). Being a professional VET teacher means that you embody your previous vocational knowledge so you can perform (see Schatzki, 1996) and teach it. Furthermore, the VET teacher's use of professional visions is also an example of the enactment of the dual professional bodies. The results show that VET teachers' professional visions consist of knowledge of the simulation exercise, knowledge of students' ability and skills (cf. van Es & Sherin, 2008), and extensive vocational knowledge with a particular way of seeing and interpreting students' doings (cf. Caruso et al., 2019; Lefstein & Snell, 2011; Styhre, 2010). The integrated dual professional knowledge of VET teachers impacts how the teachers interpret the simulation training and what kind of pedagogical approach they apply.

VET teaching practice is always situated in a material set-up which allows the teacher to draw upon their previous vocational knowledge. When the VET teachers enact their professional bodies as multiple, distributed and delegated, their bodily actions, sayings and doings are intertwined with the arrangement of entities in practice. Consequently, the materiality of the teaching practice affects, constitutes and facilitates the teachers' actions (cf. Nyström & Ahn, 2021; Watkins, 2007). However, the material set-up of the simulator may not yet be a part of the VET teacher's knowledge, and it has to be learned, since it demands another set of sayings and doings (Nyström & Ahn, 2021). The results show that teachers need to express new types of sayings and doings in order to frame the simulation training and its meaningfulness (cf. Nyström & Ahn, 2021; Tosterud, 2015) for students' vocational learning. This article shows that teachers' professional bodies are not just a physicality; it is rather a body that embodies two vocational identities and knowledge, which is enacted in different ways. The use of simulators as a teaching method for vocation learning makes it possible for VET teachers to enact their professional bodies in

multiple and distributed ways and to delegate them, but the simulator cannot capture and embody their complexity or dual identities. The study also shows that VET teachers use their professional bodies "instrumentally" (Schatzki, 1996) to achieve a specific end or goal when it comes to supporting students' vocational learning. This ability to use one's professional body intentionally and situatedly is something which cannot be enacted by the software program that runs the simulator.

The practice theory perspective and the observational methodology chosen in this study provided tools that brought new understandings of VET teachers' professional bodies through disentangling the sociomaterial relationships in simulation as a part of VET teaching practice. The iteration and balance between empirical data and theory required constant critical reflection on the process of the analysis. Data generated from two different schools can increase the transferability across learning settings. One critical reflection is that the methodology was delimited to what could be captured through observations. Additional interviews after the observations with teachers and students might have enriched the understanding even further.

Conclusion

In this article we have analysed and discussed the enactment of VET teachers' professional bodies in the context of vocational and simulation-based training. We have shown the interplay between teachers, students, the simulator, and the material set-up of the simulation training. This interplay shows that the use of simulation as a method of vocational learning is a way to use resources more effectively. Simulation training makes it possible for students to train without using the real machine or having teachers constantly present. However, this should not be misconstrued as the absence of teachers. The VET teacher might not be in the same physical place together with the students, but their professional bodies are enacted in multiple and distributed ways but also delegated to the simulator and the students in terms of sayings and doings. These enactments show that VET teachers' professional bodies also encapsulate their dual vocational identity, which the teachers can draw upon and perform in an intentional and situated way.

To sum up, simulation is a useful teaching method for vocational education, but its effectiveness is made possible by the enactments of VET teachers' professional bodies *in practice*. Therefore, it is important to have a discussion in terms of resources, not only material resources, but also teachers—their time and embodiment—all of which need to be shared and used wisely. The availability of updated material resources—e.g., forest harvesters, large trucks or updated simulators, and enough VET teachers—will impact how teaching practice is organised long-term, and the quality of vocational learning. VET teachers' knowledge of students' future vocations, together with an understanding of how to support vocational learning and the use of simulators create a space of possibilities.

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Availability of data and materials The data sets generated during and/or analyzed during the current study are not publicly available because the participants have not given consent to share the data.

Declarations

Competing interests We declare that there exists no conflict of interest in this paper.

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