



## Editorial: Vocational classroom research with a focus on teaching and learning in vocational education subjects

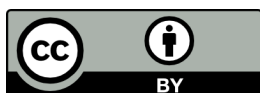
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Sixteen years ago, the Swedish Research Council published an overview of the development of Swedish, Nordic, and international classroom research from the 1970s onwards (Sahlström, 2008). Although studies with an interest in exploring teachers' and students' interaction and activities in the classroom were in an expansive phase when the overview was written, it is interesting to note that only one study (Lindberg, 2003) with an explicit focus on vocational learning in vocational education was represented in the overview. Not least considering that a core element in vocational education is the actual teaching and learning situations that take place when vocational teachers and students interact with each other. Through this interaction students are expected to learn and develop practical skills and theoretical knowledge that are needed in order to practice their future profession (Andersson, 2019; Asplund et al., 2022; Johansson, 2020). It is also in these situations that students can get the opportunity to communicate their knowledge and understanding of what is to be learned, which can create better conditions for the teacher to adapt the teaching to the students' needs (Hattie, 2012; Marton, 2010).

Overall, and from a historical perspective, there has been an emphasis on examining the teaching and learning activities that take shape between teachers and students in workplace-based teaching settings within the field of vocational education research. During the last decade however, a growing number of studies in vocational education have been carried out where there has been an increased interest towards studying and describing teachers' and students' interaction and activities in the vocational classroom (Asplund et al., 2022; Axelsson, 2023;



Berner, 2010; Gåfvelds, 2016; Kilbrink & Asplund, 2018; Lindberg, 2019; Schaap et al., 2012; Öhman, 2017). The vocational 'classroom' should here be viewed upon in a broader sense, including school-based learning settings in for example school workshops and method rooms as well as outdoors. What these previous interactional studies have in common is that they illuminate how a vocational content, may it be with an emphasis on theoretical or practical dimensions or both, is often taught and learned in interaction between teacher, students, and artefact. What these studies also reveal is the complex teaching and learning processes that are set into play when teachers and students interact in the vocational classroom. Asplund et al. (2021), for example, show how vocational teaching situations sometimes involves two parallel processes that include different kinds of vocational learning and knowledge, which teachers and students have to handle simultaneously. One of these processes concerns solving a practical task at hand here and now in the workshop session (for example how to unscrew some pipe fittings), while the other process involves aspects related to the practical doing that are more explicitly linked to a vocational content needed for a successful future profession (for example how to unscrew the pipe fittings in a gentle and sustainable way to enable a long working life as a professional). In another study, Heusdens et al. (2016) show that contextualising vocational knowledge involves both the processes of concretising and conceptualising. According to Heusdens et al., 'contextualising vocational knowledge leads to a growing understanding of how complex and interdisciplinary bodies of knowledge fit together, and how practitioners can decide what knowledge is relevant for a particular purpose or in a specific situation' (p. 161). However, despite the growing number of studies, the field is still relatively unexplored, not least in terms of studies that focus on students' learning in VET.

Hence, there is a need for research in vocational education that studies what happens in the vocational classroom and that focuses on teachers' and students' actions. Against this background, the *Nordic Journal of Vocational Education and Training* (NJVET) called for contributions to a special issue titled *Vocational classroom research with a focus on teaching and learning in vocational education subjects*. The call searched for papers that addressed the encounter between vocational teachers, vocational students, and vocational content in the vocational classroom. Vocational classroom research here thus referred to studies that explore what happens in the school-based settings in vocational education – with a special focus on teachers' and students' actions. This special issue is the result of that special call, and it aims to develop knowledge about how teaching in the vocational classroom can create productive conditions for students' vocational learning and the development of students' vocational knowledge in vocational subject areas. The contributions in this issue embody a variety of perspectives and methodological approaches and focus on different dimensions of the vocational classroom; vocational subject teaching in vocational school settings, vocational subject

teaching in school in relation to workplace-based learning and vocational subject teaching in the connected classroom. Together these contributions illuminate the breadth and variety in the vocational subject teaching that take place within different vocational education settings.

### Five research articles

The special issue includes five research articles; four written in English and one in Swedish. In the first article, *How does it feel? An exploration of teaching perceptive sensoriality in hairdressing education*, **Anna Öhman** and **Eva Klope** explore the teaching of perceptive sensoriality in Swedish hairdressing education. The article is based on video-recordings of teacher and student interactions centered on actions such as instructions, demonstrations, and evaluations in the vocational classroom. Through a close and detailed ethnomethodology and conversation analysis Öhman and Klope show how perceptive sensoriality is used by teachers and students in establishing shared understandings of vocational knowledge. The findings suggest that in order to learn the vocational subject content students need to encounter a learning environment in which they can practice the individually embodied sense of touch as well as the vocation's verbalised collective feel.

Just like the first article in this special issue, the second article, which is the article written in Swedish, focuses on the interactions between teacher and student in the vocational classroom: *Spegeln som resurs i hår- och makeup-stylistklassrummet: Yrkesämnesundervisning på hantverksprogrammet* (The mirror as a resource in the hair and make-up stylist classroom: Subject-specific vocational education in the Handicraft programme). The vocational classroom in this study is the hair and make-up stylist classroom, where mirrors play a central role. In the article, **Minna Arvidsson**, **Stig-Börje Asplund**, **Ann-Britt Enochsson**, and **Nina Kilbrink** base their analysis on video recorded sessions in a make-up workshop and focus on the use of the mirror as a resource in the enacted teaching and learning situation focusing on application of eye shadow. By the use of conversation analysis and variation theory approach (CAVTA), the authors show when and how the mirror is made relevant in the interaction between teacher and student and what vocational content is made visible in those situations. The results show how the use of a specific artefact – the mirror – contributes to making specific aspects of the learning content possible to teach and learn. The authors highlight these processes as teaching and learning processes through which the student also is given possibilities to develop a professional vision as a hair and make-up stylist.

The third article, *From doing to learning: Students' self-evaluation and reflective practices in VET*, is a fieldwork study in the Natural Resources programme in Swedish upper secondary school. Through a variety of data such as video recordings, interviews, and observations of interaction between teachers, students and

digital driving simulators **Giulia Messina Dahlberg** and **Susanne Gustavsson** examine the interplay between vocational students' self-evaluation and reflective practices with teachers' feedback while engaging with vocational skills across different learning environments. The analysis illuminates how teachers use strategic combination of practice within digital driving simulators and authentic machines as a pedagogical design to develop students' vocational skills, as well as their ability to evaluate and assess a variety of situations in their future profession. Hence, the study by Messina Dahlberg and Gustavsson shows that simulation-based teaching and learning can create opportunities to foster and develop students' abilities to self-evaluate and reflect on their learning trajectories that relate to handling different machines in a simulation as well as in authentic situations.

In order to create productive conditions for students' vocational learning and the development of students' vocational knowledge in vocational subject areas the findings in the fourth contribution by **Sarah Würges** and **Carmela Aprea**: *Implementation of digital tools in VET: Experienced support and technology acceptance*, show the importance of working with and implementing digital technology already in the vocational classroom. Since the advent of the Internet, there have been ideas about the extended classroom, but it was during the Covid pandemic digital technology as means for teaching and learning became a reality for a larger audience. Being in the classroom can in this respect mean that teachers and students sit in places located geographically far from each other and have to rely on different kinds of technology to communicate. Students do not embrace technology the same way or to the same extent, which is showed in Würges and Aprea's contribution based on a questionnaire answered by 891 trainees. The authors highlight the importance of didactically sensitive teaching of basic digital skills to ensure progress in the sense of digitalisation.

In the fifth contribution to the special issue, *What constitutes a conducive learning environment in VET?*, **Bjarne Wahlgren** and **Vibe Aarkrog** encapsulate the key factors that contribute to a conducive learning environment in the school-based parts of dual vocational education and training (VET) based on a review of international research. These central factors are then exemplified with extensive data from an empirical study conducted on teachers and students at 13 Danish VET schools and their perception of a conducive learning environment. In the study, two main categories of key factors are identified; *curricular factors* that include factors such as form and content of teaching, and *social factors* that include relations between teacher and student and relations among students. The results show that conducive learning environments are closely dependent on teachers as persons, trainers, and professional role models. The study by Wahlgren and Aarkrog illustrates that a productive learning environment in VET requires teachers that have relevant vocational knowledge and skills, as well as a variety of social competences. As such, the article contributes to knowledge about how

vocational teachers can create productive conditions for students' vocational learning in the vocational classroom.

Together, these contributions present a multilayered picture of the dynamic and complex teaching and learning processes that are set into play in the vocational classroom. We hope that this special issue will encourage further research that explores how teaching in the vocational classroom can support students' vocational learning and the development of students' vocational knowledge in vocational subjects.

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