



Editorial: Challenges and development in and of vocational teacher education

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Welcome to this special issue of the *Nordic Journal of Vocational Education and Training* titled *Challenges and development in and of vocational teacher education*. The particular focus and context as represented by the research articles and magazine articles in this issue is vocational teacher education in Sweden, Norway and Denmark. Paper presentations on vocational teacher education at the yearly NORDYRK conference in 2017 showed that although the structure and the length of the programmes differ in these Scandinavian countries, there are many similarities regarding content and subjects, and similar challenges that are addressed. We are very glad for the contributions in this special issue. The research articles contribute to knowledge of vocational teacher education, its problems and opportunities, while the magazine articles provide concrete examples of work in the area for review and development. In both cases, it is possible to draw attention to the vocational teacher education in each country, even though there are differences between them.

Vocational teacher education is an under-researched area. As an example, *The International Handbook on Teacher Education* (Loughran & Hamilton, 2016) has no chapter on vocational teacher education, nor are any aspects of vocational teacher education included in the thematic chapters such as chapters on organization and structure in teacher education or chapters on reflective practice and pedagogic reasoning. When the term 'vocation' is used, it is in phrases such as 'teacher training as a vocation'. A search of journals in the field of vocational education and



training over the past five years confirms the gap in the research focused on 'vocational teacher education'. Search results show for example that the *Journal of Vocational Education & Training* and *Vocations and Learning* have no articles addressing vocational teacher education. The *International Journal of Training Research* has a special issue on VET (vocational education and training) teaching and teacher education (2017), however research is only within the Australian context.

The lack of articles on vocational teacher education is also a fact regarding this journal. Thus, contributions in this special issue is of great value for Nordic researchers in the field of VET, for teachers in vocational teacher education in the Nordic countries, administrators, school principals, and teachers in the area of VET. The articles give us a unique opportunity to learn from each other demonstrating a sharing attitude, which we think is significant of the members of NORDYRK. As all articles, but one, are written in a Scandinavian language, there are limits for readers who do not read in Swedish, Danish or Norwegian. However, this editorial and the abstracts give an overview of the themes and issues of the articles.

The provision of vocational teacher education differs widely among nations. In some countries there is no unified vocational teacher education. How teachers in different vocational domains have been trained for their particular job differs in accordance with historical and societal characteristics of each nation, and there are different definitions of teachers and trainers across Europe (cf. Misra, 2011; Wollschlager & Guggenheim, 2004). In regards to the three countries represented by the articles in this issue, vocational teacher education is the education of teachers in vocational subjects in upper-secondary school, or in an adult education institution/VET college. The programmes are provided by a university or a university college. However, the length of the education for a vocational teacher diploma differs, as does the content. Denmark and Sweden have similar structures with shorter programmes, than that of Norway. In Denmark, vocational teacher education consists of 60 European Credit Transfer System (ECTS) points, in Sweden it is 90 ECTS. In Denmark, 10 ECTS consist of practicum, while in Sweden 30 ECTS consist of practicum. In both Denmark and Sweden, the admission to vocational teacher education is based on a relevant vocational certificate, and relevant and recent work experience (minimum five years in Denmark). Both Denmark and Sweden have a unified vocational teacher education programme, which means that the students come from mixed vocational backgrounds. VET teacher pedagogy and curriculum are addressed on a general level, but students also work with individual subject-specific tasks. The vocational teacher education of Norway has similar admission requirements as those in Denmark and Sweden. However, Norway also has a VET teacher education programme with a bachelor's degree.

The history of education in the Nordic countries is connected with the continental European pedagogic tradition. This has implications for some of the concepts we use. One of the central concepts in the field of teaching and learning and in teacher education in the Nordic countries is *didaktik*. When Nordic (and for example German) researchers and teacher education staff translate *didaktik* into English, it is translated into 'didactics'. In this issue some of the keywords are 'vocational didactics' or 'vocational subject didactics'. As the term is not used by, or familiar to teachers and researchers in other parts of the world, or may have a connotation of a specific kind of teaching, we think it is important to articulate the meaning of the concept as it is used in the Nordic countries.

As stated by Ylimaki and Uljens, 'Didaktik as a field of research traditionally tries to keep together questions among aims, contents, and methods of teaching as they occur different levels...' and '...Didaktik always treats contents as related to the *methods* of teaching as well as the *aims* of teaching' (Ylimaki & Uljens, 2017, p. 182–183). Taking this into account, the concept of 'vocational didactics' implies the teaching of vocational content accompanied with an awareness of the aim of teaching this specific content, and the method of teaching or enacting a learning situation for a specific group of students. In discussions with scholars within the field of VET in Australia (Roslin Brenan Kemmis, Susanne Fransicso and Anette Green), the term that they have suggested as most useful to match the concept of *didaktik* is 'pedagogy', and the terms 'VET pedagogy', and 'VET teacher pedagogy' are developed on and used in their publications (cf. Brennan Kemmis & Green, 2013; Francisco, 2016; Green, 2015). The traces of the concept of pedagogy, as it is discussed by them, is connected to the work of Bernstein and van Manen (cf. Brennan Kemmis & Green, 2013; Smith, Edwards-Groves & Brennan Kemmis, 2010). With this in mind, we now turn to the topics and themes in the articles of this issue.

The findings presented and analysed draw on systematic investigations related to the ongoing developmental work of enacting syllabuses and assignments in VET. The underlying context in several articles is the goal-oriented and outcomes-based policy and structure of vocational teacher education in the three countries. In the first article of the issue, Duch, Egendal, Marcussen, Højlund and Nistrup (pp. 1–18 in this issue) shed light on the Danish vocational teacher education structure which was established in 2014, and identify the need for teachers in vocational teacher education to develop their pedagogical and educational competencies. A way of doing this is through research and developmental projects with VET institutions. Duch et al. report on three such different collaboration projects which have been carried out and analysed continuously with the help of concepts from activity theory, as developed by Yrjö Engeström. The article gives a rich picture on how local curriculum development processes take place when a new structure for vocational teacher education is implemented.

Another such example where the incentive for local syllabus development is related to goals in the higher education act and the systems of qualification of the Swedish vocational teacher programme, is illustrated in the second article by Gustavsson, Henning Loeb and Kvarnemo (pp. 19–35). A module of education for sustain-able development (ESD) in which the vocational teacher students work in a group project and plan an ESD activity is described. In all, 47 group work presentations have been carried out since 2014. These presentations were analysed by asking the ‘what-questions’ and the ‘how-questions’ of *didaktik*. The results show a great variation of content and working methods that the vocational teacher students plan for their students in VET. This variety is related to previous studies investigating critical aspects of teaching ESD. The study also includes results from a questionnaire on how the students value their learning during this module. On average, 82 % of the students filled in the questionnaire and the answers show that over all, the students were positive to the content of the ESD module and the work that was carried out within this part of the course. Issues on sustainability seem to be relevant for vocational teacher students, who often carry prior knowledge of these issues from their vocations. Although the study is not an investigation with in-depth interviews, the results with the high respondent rate are discussed in relation to predominant ideas and aims in policy and research on ESD, where transformative learning is emphasized.

The focus of the third article, written in English, by Alvunger and Grahn Johansson (pp. 36–56) is on how students make meaning of ‘didactic ability’. This is a key concept in the course and the task that is described, in which the vocational teacher education students have video recorded a planned lecture for VET students, on the history of training in their specific vocation. These video recordings were then shared with the other vocational teacher students in the group. As in the case of the ESD module above, this task is aligned with one of the goals in the systems of qualification of the Swedish vocational teacher education, namely to develop an understanding of the history of education. The analysis was carried out by using the concept of recontextualisation. The task of how to select and recast the history of training in their specific vocation and how to structure and plan this teaching sequence enabled the students to engage in ‘learner recontextualisation’. In order to investigate how the students experienced the task and its possibilities of meaning making of didactic ability, follow up interviews were conducted with five vocational teacher education students of different vocations. The way teacher students make meaning of didactic ability includes understanding ways of dealing with the relationship between work-knowledge and the teaching content, and repertoires for bridging the gap between theory and practice. Alvunger and Grahn Johansson conclude that workplace codes from the different vocations of the students are incorporated and transformed – recontextualised – from the pedagogic discourse of the school.

The fourth research article by Dahlback, Berg Olstad, Sylte and Wolden (pp. 57–77) gives a picture of the challenges of creating a meeting point between vocational teacher education of design and craft and the field of practice. Findings from interviews with teachers and with vocational teacher education students within Design and Craft show a low coherence between the teacher’s didactical organization and choice of teaching methods, and the content in vocational teacher education. The results also show a need to strengthen the occupational related content and teaching methods in vocational teacher education, especially in practicum periods, in order to better match the occupational competence of future working life. The findings are analysed in regards to the major reform of VET that will be launched in 2020, which implies a stronger framing of occupational specialization in VET.

In the fifth research article, by Lagercrantz All, Pettersson and Teräs (pp. 78–97), the assignments that the students face during their vocational teacher education at Stockholm University are in focus. Course assignments are conceptualized as mediating artefacts with epistemological functions, and the research interest has been to identify and analyse expected vocational knowledge requirements for the diverse group of students with different vocational backgrounds. Thirteen course guides and 56 assignments have been analysed. Although several assignments involved collaboration, peer responses and opportunities of formative feedback from the teachers, individual written assignments predominated. These assignments showed to be complex and requiring the students to navigate between different knowledge domains. The authors wanted to highlight that it is important for vocational teacher educators to critically examine assignments and what kind of knowledge cultures they promote. Furthermore, vocational teacher students need to be aware of different knowledge cultures to be able to support VET students’ learning.

Course guides are also the empirical data in the sixth research article, by Andersén, Asghari and Petersson (pp. 98–123). The research interest in this article was to analyse how ‘subject specific vocational didactics’ takes form in the different vocational orientations that is provided in this specific vocational teacher education programme in Sweden. The didactic relational model of Hiim was used as a framework to analyse how goals, content, learning activities and examination tasks are formulated in the course guides. One result of this study points out a common challenge of aligning goals, content, learning activities and examination tasks. A second result shows major differences between the vocational-specific orientations of the programme, for instance between choice of literature and examination tasks. Teachers of vocational subject didactics in different vocational orientations have different priorities and considerations of what is most important for their vocational teacher students to focus on regarding learning. The authors discuss how these differences may be impacted by the professional

and occupational identities of the teachers teaching in the different vocational orientations of the vocational teacher programme.

This special issue on *challenges and development in and of vocational teacher education* also includes three magazine articles, which in different ways portray the developmental work going on in VET teacher education. The first magazine article by Annerberg and Fändrik (pp. 124–140) illustrates a project at Dalarna University focusing on ‘academic competence’, a term in the qualification descriptor of the Vocational teacher education programme. The Swedish Higher Education Act states that academic professional programmes are to build on ‘a scientific foundation’. The Swedish higher education authority requires that this scientific foundation is strengthened. The article describes two parallel projects; the construction of a matrix to display the progression of students’ academic competence during their studies in the programme, and a seminar series on VET research for the colleagues teaching in the vocational teacher education programme. The authors discuss different aspects of how this developmental work has provided a collective consciousness for instance on the selection of course literature, and insights on scaffolding structures for the students in their path towards ‘academic competence’.

The second magazine article provides a historical reflection on the preparation and the establishment of the Bachelor’s Programme for Vocational Teacher Education at the Institute of Teacher Education at The Norwegian University of Science and Technology (NTNU). The authors Lillevik Rokkones, Landro and Utvær (pp. 141–159) present the content and organization of the bachelor programme, some results from the student group in relation to throughput, and dropout changes that have been made along the way as part of the programme’s quality development. The article concludes by describing work in process: recruiting students, strengthening cooperation between universities, schools and working life, and involvement in internationalization across Europe, through strategic partnerships and student mobility. Finally, the work towards the goal of becoming a robust and fully-fledged research environment is addressed.

The final magazine article by Walkert (pp. 160–174) provides an illustration of a collegial developmental work focusing on improving feedback given to the students during their teacher education practicum at Karlstad University. The vocational teacher education programme at this university is mostly distance-based and the students live in disparate areas far away from the campus in Karlstad. Thus, visits of university teachers during the practicum is often not feasible. The article describes how a digital conference tool is used for discussions with the students and their supervisors in the practicum, and provides a thorough example of current developmental work, in which the student’s teaching is filmed by a local supervisor. The student shares a sequence of this film with a group of fellow students on the digital seminar platform. The filmed sections are analysed and discussed together in a seminar, with the university teacher. The aim of the

developmental work that is carried out is twofold: to make the university teachers, the vocational teacher education students and the supervisors in the practicum become more observant of distinct teaching strategies, and to make the vocational teacher education programme at the university more research-based. For this purpose, a research-based observation manual inspired by the PLATO-manual with elements of instruction is used, in order to discuss the students' teaching strategies and to provide feedback to the students in a systematic way.

Together, the contributions give a unique picture of contemporary challenges and issues in Nordic vocational teacher education, and how teachers and researchers in this field of higher education continuously are involved in developing the structure and pedagogy.

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