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Chapter for the Nord-VET Book II:**Vocational Education in the Nordic Countries: Learning from Diversity?****Eds. Christian Helms Jørgensen, Ole Johnny Olsen, and Daniel Persson Thunqvist**

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Section 3.

Progression to higher education from VET in Nordic countries: Mixed policies and pathways**Introduction: Redefinitions of the universal policy and VET–HE relations**

In the Nordic countries, general upper secondary education and initial VET constitute a particularly important selection process toward higher education (HE), especially as compulsory education (up to the completion of Grade 9 or Grade 10) in Nordic countries is comprehensive rather than stratified. Thus, the *unitary* compulsory school system in the Nordic countries can be contrasted with *stratified* compulsory education systems like the one in Germany. In the Nordic countries, the upper secondary education systems are stratified in the sense that the general upper secondary programmes and routes offer the most common and direct access to HE (Shavit and Müller, 2000). The Nordic countries' higher education systems have been associated with Social Democratic welfare states. In such welfare states, higher education is characterised by a relatively high share of public expenditure, high enrolment rates per age cohort, low or no student fees, generous grants and loans, and a low level of differentiation (Willemse and de Beer, 2012, p. 115). The Nordic higher education systems are binary in the sense that traditional science universities exist in parallel to the non-university sector of polytechnics or colleges (Kyvik, 2004; Jóhannsdóttir and Jónasson, 2014).

The education policies of the Nordic Social Democratic welfare states differ from those of other countries with either more conservative or liberal welfare regimes. On the one hand, countries with more liberal regimes, like Australia, Canada, Ireland, New Zealand, the UK

and the USA, the share of public spending is relatively low, tuition fees are high and the level of vocational specificity in the programmes offered is low. On the other hand, more conservative regimes, such as Austria, Belgium, France, Germany, Italy, the Netherlands, Portugal, Spain and Switzerland, offer low-cost or free tuition but scant student grants or loans and are characterised by high levels of differentiation and high vocational specificity in their HE (Willemse and de Beer, 2012).

In recent decades, the Nordic countries have changed from their ‘classical period’ of the Social Democratic compromise toward more individualisation, decentralisation and education policies inspired by neo-liberal ideas. The classical period, which prioritised social equality in its educational policies, lasted from 1945 until around 1970 (Telhaug, Mediås, and Aasen, 2006; Ahonen, 2002). In the last few decades, policies have put a stronger emphasis on economic competition between nations and on technical and instrumental goals. In accordance, policies have increasingly favoured efficiency, output management and adjustments to international resolutions on school reform while downplaying state control (Ahonen, 2002; Telhaug et al., 2006). With respect to the relation between VET and HE, this has meant a shift from ‘widening participation’ in HE to an emphasis on quality, the introduction of steering mechanisms, increased competitiveness of academic professionals, and elite orientation at traditional science universities associated with the discourse on globalisation (Berggren and Cliffordson, 2012; Pinheiro et al., 2014).

The binary structure of Nordic HE has resulted in transitions from VET to HE having steered mostly toward the more vocationally oriented universities of applied sciences (formerly called ‘polytechnics’) or colleges. The uncertainty regarding the labour market value of new programmes in HE has also contributed to changing transitional patterns, while a wider array of opportunities has challenged youths’ choice making. It has become more difficult to forecast the benefits of various HE programmes for future careers. In the Nordic countries, delayed transitions to HE have been more common than in many other countries (Hauschildt et al., 2015, p. 35; Walther, 2009). In parallel, the role of HE with respect to equality has changed due to HE systems’ massification in the Nordic countries. Once a HE system has become massified and universalised through expansion, it has lost part of its prominent role as a scapegoat to be blamed for limited access, increasing inequalities and elite favouritism (Levin, 2003; Brennan and Naidoo, 2008). At the same time, internal competition between HE institutions has emerged to spearhead academic stratification.

From HE institutions' perspective, the combination of decreased public funding and increased student participation has led to many kinds of responses internationally, such as a reduction in study programmes and greater emphasis on activities that increase revenues (Levin, 2003). Some HE institutions have also expressed disinterest in promoting equity while demonstrating an active willingness to limit access. In Finland, for example, some universities of applied sciences (UAS) have introduced entrance examinations for students with a VET background in the 2010s. Internationally, limiting access to HE for those with a VET background has been argued as being rational from the perspective of HE institutions for various reasons: social inclusion is not their primary responsibility, promoting wider inclusion threatens academic standards, and they cannot afford increasing their student intake via inclusion policies (see Brennan and Naidoo, 2008). The ongoing discussion about the access to HE via the VET route has involved various interest groups and stakeholders. It has become evident that this is an important area of educational policy, subject to continuous renegotiations. Transitioning from VET to HE has been a long-standing topic of concern, not only in connection with national education policies but also more internationally within the European Union and in the general research community (see, e.g., Lasonen and Young, 1998; Trant, 1999; Stenström and Lasonen, 2000; Hoelscher et al., 2008; OECD, 2010).

While VET's relationship with HE has been ambiguous and contested, VET has often been perceived as a choice for less ambitious youths or for those with lower career expectations (see, e.g., Silver and Brennan, 1988; Lahelma, 2009; Brunila et al., 2011). On the one hand, the opportunity to progress to HE has improved VET's status in Finland and Sweden since the 1990s, but not without those in favour of it having faced opposing policy discussions (Virolainen and Persson Thunqvist, 2017). The appreciation for practical training has a long history in the Nordic countries, with its cultural origin dating back to the 19th century. 'Learning by doing' has been characteristic in the progressivism of Nordic education (Heikkilä, 2003; Telhaug et al., 2006; Thorsteinsson et al., 2016). In recent years, international World Skills competitions, popular culture and TV shows have projected images of knowledgeable, competent, competitive, developing and highly skilled practitioners (e.g., chefs, carpenters, technicians) from a variety of occupational fields (Ruohotie et al., 2008). Furthermore, changes in the working world have increased the need for combining the skills of various formerly separate occupations in a hybrid way as part of new singular occupations. Accordingly, a sharp division between blue-collar and white-collar jobs has become rather

outdated as skill demands have increased and become more complex across the board (e.g., Goos et al., 2009; Marcoux, 2010; Della Porta et al., 2015).

Changes in the working world and the development of new job profiles have led to the redefining of competence needs. The need to support the development of poly-contextual and boundary-crossing skills involving critical thinking, problem solving, communication, collaboration, creativity, controlling, evaluating, self-direction and digital literacy has been brought up to define targets for 21st century education (Guile, 2002; Trilling and Fadel, 2009; Winch, 2015). These shifts in the demand for skills have also addressed the need to rethink VET–HE relations. Wide unanimity prevails internationally concerning the need for lifelong learning competences as well as career management skills (see, e.g., OECD, 2007; European parliament, 2012). Altogether, changes in the labour market have accelerated the demand for opportunities to continue from VET to further and higher education. This chapter aims to provide knowledge on education policy and to help education planners consider the relations between VET and HE for future developments, particularly by reviewing the history of the Nordic VET–HE relationship.

Decisive turns of educational policy constructing transitions from VET to HE

This section describes, in broad terms, the decisive turning points by which transitional routes from VET to HE have been significantly altered in Nordic education systems since the 1960s. Since the Second World War, all Nordic countries (except Denmark as there presently is no VET to HE route there) have faced HE expansion to the extent of universal access (Börjesson et al., 2014). The transformation of HE systems has been a crucial part of changing VET-to-HE transitional patterns, particularly since vocational education and universities had very little interconnection prior to the Second World War. While the Nordic HE systems are relatively extensive compared to those of many other European countries, the expansion has led to student recruitment patterns having become more diverse. There has been a shift from cohesive and standardised systems administered by nation states toward more diverse, competitive, market- and efficiency-oriented international-style HE systems (Börjesson et al., 2014). Whereas the expansion of Nordic HE systems in the 1960s was related to demographic and economic growth, the expansion during the 1990s took place in circumstances of a declining youth population and economic crisis or stagnation (Börjesson et al., 2014).

Nordic HE institutions adopted the Bologna model at a different pace and their degree programmes vary in length and diversity. The Danish HE system has clear divisions between three main types of institutions: First, there are the academic- and research-based universities, which include two old universities and the younger regional universities established in the 1970s. Then, secondly, there are the university colleges (UC) that have been merged and strengthened over the last two decades. The UCs primarily provide education for students preparing for specific professions and only offer degrees up to the Bachelor's degree level. Finally, the third type is represented by the new vocational academies offering short-cycle and Bachelor's degrees, mainly in the fields of technological and business education (see Börjesson et al., 2014).

In parallel, in Norway, the HE system comprises universities, specialised university institutions and university colleges. In general, a higher education entrance qualification is required in order to enter any higher education institution. This qualification is obtained through a general study programme in upper secondary education. Some programmes, mainly in engineering, are open to students from vocational programmes through the vocational pathway ('Y-veien', in Norwegian). In these programmes, admission is based on a relevant craft or journeyman's certificate. Vocational colleges ('fagskoler', in Norwegian) offer post-secondary vocational education outside the higher education sector. The vocational colleges offer short programmes (between six months and two years of study) that are based on upper secondary education and work experience.

In Sweden, the HE institutions include universities, specialised institutions, art institutions, university colleges, and health colleges. They offer a large diversity of degrees with various durations compared to HE institutions in the other Nordic countries (Börjesson et al., 2014). In Finland, the HE system consists of traditional science universities and universities of applied sciences (UAS) ('ammattikorkeakoulut – AMKs', in Finnish), which of which the UAS were established on the basis of the former vocational colleges in the 1990s (Böckerman et al., 2009). In general, Norway and Denmark offer more HE in specialised HE institutions than is the case in Finland and Sweden (Börjesson et al., 2014).

Nordic countries have emphasised universal access to HE and promoted VET and general upper secondary education be given equal status due to the increasing emphasis on societal equality and in reaction to an increasingly knowledge-driven economy. In accordance, each Nordic country has developed bridging solutions to provide high-performing VET graduates

access to HE. At times, these measures have had unintended consequences that have worked against the intentions and aims of policymakers. The measures taken to provide access to HE via VET as well as their outcomes are described in more detail per Nordic country as follows. The description starts with the countries that have constructed more stratified systems, Denmark and Norway, and continues with Sweden and Finland, which although having built more unified systems have recently also been reformed further in regard to VET–HE transitional options.

Denmark

In Denmark, a crucial post-war turning point for access from VET to HE was in the 1960s, when the number of applicants to the apprenticeship system declined and the drop-out rate increased (Albæk, 2004, *Betænkning*, no. 612, 1971). The crisis of the apprenticeship system created demand for a reform. Reducing social inequality in connection with the limited access to HE was an explicit objective of the reform proposals (Juul, 2006). While a reform proposal suggested the coordination of the general and vocational upper secondary education routes, detracking upper secondary education was opposed by the right wing of the parliament and major labour market organisations (Christensen, 1978). The outcome of the modified reform in 1976 was that a new programme, Initial Vocational Education (‘Erhvervsfaglig Grunduddannelse – EFG’, in Danish), which was introduced parallel to the traditional apprenticeship system. It started with a one-year basic course including 40% general subjects. The resulting parallel programmes—apprenticeships and EFG programmes—were combined in consecutive reforms, one in 1991 and another in 2000, where the separation of VET from the Gymnasium, the major route of general upper secondary education, was maintained (Jørgensen, 2018).

Alongside the apprenticeship track and EFG programmes, two types of Vocational Gymnasiums were introduced in the 1980s with the aim of improving the progression rate to HE, each building on different traditions (Jørgensen, 2018). These two formats, the Business Gymnasium (HHX) and Technical Gymnasium (HTX), eventually failed to create a connection between apprenticeships and HE and did not raise the esteem of IVET offered through apprenticeships. Rather, they attracted the most ambitious learners from the apprenticeship scheme and contributed to the falling status of the other, ordinary IVET programmes. Since 1995, the HHX and HTX have enabled access to HE and their separation

from the apprenticeship route was maintained in a later reform that took place in 2005. By 2013, the Vocational Gymnasiums grew to recruiting more than 15% of the eligible youth cohorts, annually (Statistics Denmark, 2015). However, they do not enable access to the skilled labour market. A reform introduced in 2000 has allowed VET students to choose additional general subjects as part of their VET programme in order to be able to apply for higher education. However, very few students have taken advantage of this opportunity.

Traditionally, Danish VET graduates' typical higher education route steered toward short-cycle programmes below the Bachelor's degree level, which are presently offered by Vocational Academies ('Erhvervsakademier', in Danish). These institutes offer programmes that had previously been offered by vocational and professional schools. They were established as the result of a reform conducted in 2007 in order to provide better opportunities for educational progression to VET students. However, since the 1990s, the rate of progression from VET to HE has decreased and the majority of graduates from VET who continue in HE pursue Bachelor's degree programmes at university colleges. For example, during 2009–2012, only 13% of the students at Vocational Academies had an upper secondary VET educational background (Jørgensen, 2017).

In sum, in Denmark, a dual system of VET forms a minor alternative route to HE, while transitions from VET to the labour market are relatively successful. Medium-cycle tertiary education, mainly attracts participants from vocational Gymnasiums (HHX, HTX; Jørgensen, 2018). Since 2011, the hybrid EUX programme is offered as a solution to prevent youngsters in VET from entering blind alleys, to improve the status of the VET route, and to attract also high-performing students to vocational education. The EUX programme integrates academic subjects into the apprenticeship programmes through a new approach that combines subject- and problem-based work. As almost one third of the students enrolling in VET applied for EUX in 2017, it can be considered a success. However, it is a very demanding programme, so it is expected that many students may not complete the programme.

Norway

In Norway, in connection with a government committee known as the Steen Committee, there was a strong discussion about the need for changes to the education system at the beginning of the 1960s (Michelsen et al., 2018). There was a need to create a more coherent education system to replace the former heterogenous school structure that had developed on the basis of local initiatives. The Steen Committee suggested increasing the integration of the

general and vocational upper secondary education tracks. The committee supported students being free to choose an educational track, and based this on the principle that the completion of an upper secondary education with satisfactory results should enable access to HE. While a reform of the upper secondary education system was being planned, the apprenticeship system was being contested. The youth organisation of the Labour party wanted to abolish apprenticeship training, claiming that economic and legal conditions for apprentices were unfavourable compared to those of ordinary pupils in vocational schools (Michelsen, 1993). As a response to the criticism, the apprentice system was revitalised in the 1970s by measures taken to improve it. School-based initial VET was integrated in the general upper secondary education system and thus formed a more unified upper secondary educational path in 1975. The apprenticeship system was further strengthened by a new, separate law given in 1980 (Michelsen et al., 2018).

The reformed upper secondary education system was criticised as being outdated already later in the 1980s (Michelsen et al., 2018). The perceived status of VET was still low compared to that of the general academic track in upper secondary education. There was a structural mismatch between the number of study places and employment opportunities; educational contents were seen to be outdated and too specific in relation to the demands of the labour market. In 1994, Reform '94 was implemented to grant all 16–19-year-olds the right to three years of upper secondary education. The policy's aim was to abolish youth unemployment and improve the inclusion of youths in society. The reform recombined school-based and apprentice training through the '2+2 system', where two years of upper secondary education in school was to be followed by two years as an apprentice in a firm. The 2+2 system, however, blocked opportunities for the horizontal transfer between trades. The former 101 foundational courses were reformed into 12 broader, theoretically oriented initial courses which combined several related trades into different vocational tracks. While the provision and availability of apprenticeships was a major challenge, it was decided, through implementing and trying various measures, that students who cannot find an apprenticeship after the 2-year training period can complete a third, supplementary year of practical training at school. Also, it became possible for VET students to transfer back to the general education track by completing a third supplementary year of studies enabling access to HE. The most recent demands for further reforms have concerned the increased need for individual flexibility in combining school-based and work-based learning as well as for improved learning arrangements in general (Michelsen et al., 2014).

At present, the opportunities to continue in post-secondary education vary considerably between the vocational programmes in Norway (Olsen et al., 2014). There are educational programmes whose pathways to post-secondary education are well-established, mainly in the area of technical trades, but there are also programmes where direct opportunities for transitioning to HE do not exist. Students who are not formally qualified to enter HE typically continue their studies at post-secondary vocational colleges ('fagskoler' – ISCED 4). Entry requirements for vocational colleges are either a vocational upper secondary education, a general upper secondary education, or an assessment of relevant practical skills or non-formal competences. The term 'higher vocational education' has recently, in 2017, been established as an official term for the vocational college programmes. The share of students continuing at vocational colleges varies from field to field, but it is highest for the field of technical and industrial production (16% of students three years after the completion of VET, Olsen et al., 2014).

Sweden

In Sweden, the provision of vocational education increased considerably in the 1950s (Olofsson and Persson Thunqvist, 2018). In the early 1960s, the need to better coordinate the provision of VET programmes was reflected in several reform initiatives, and the Commission on Vocational Education was appointed in 1963. The commission suggested decreasing the number of former vocational education programmes and developing them into broader, two-year study programmes. The Swedish parliament ultimately decided to merge the former general upper secondary school system with the commercial and technical upper secondary school systems, and coordinated their provision as part of post-compulsory, two-year continuation schools and vocational schools. The greatest changes, however, concerned the regulation of content and scheduling; these were reformed to create an integrated upper secondary school system. In the 1960s, a shift in regulating educational contents took place when syllabuses based on local governance and initiatives were replaced by centrally determined syllabuses. When a reform was established in 1971, the new vocational programmes were to be broadly oriented toward their relevant branch of study and a new VET programme-based upper secondary school system was implemented in the same spirit. The new vocational study programmes were to provide a basic vocational education, while the adoption of working life competences was to take place later. The reform led to an

expansion of interest in establishing vocational school programmes parallel to decreasing workplace training across the total study time in vocational programmes. During the school year 1983–1984, only 6 percent of these type of students' studies took place at a workplace (Olofsson and Persson Thunqvist, 2018).

In 1991, the upper secondary education system was further reformed to comprise 17 educational programmes, 14 of which were vocationally oriented. All upper secondary education was extended to last three years. Third, mainly, a theoretical year was embedded in the upper secondary vocational education's curriculum to enable eligibility for HE. At the same time, the governance of education was decentralised (Lundahl and Olofsson, 2014). In 1992, a reform of the private school system took place as well, which led to further liberalisation and emphasised that initiatives should be taken at the local level (Olofsson and Persson Thunqvist, 2018). Even though the upper secondary education system enabled a general eligibility for higher education, many students, particularly those in vocational programmes, did not complete their studies satisfactorily. For example, in 2012, 23 percent of students did not gain their final certificate and 36 percent did not achieve eligibility for HE (Olofsson and Persson Thunqvist, 2018). The increased regulation directed at the provision of general subjects with the aim of easing the eligibility for HE led to a further weakening of work-based learning. This effect was addressed by a reform introduced in 2011.

This most recent Swedish reform, in 2011, aimed to counterbalance the academic drift by creating a stronger division between higher education preparatory programmes and respective vocational programmes. The Swedish upper secondary education system, at present, comprises three pathways to gaining an upper secondary diploma: 1) general education as the major route to HE, 2) school-based vocational programmes, and 3) apprenticeships—with the latter two giving priority to work-based learning. The school-based vocational system provides 18 national programmes, 12 of which are vocational programmes placing more emphasis than previously on specific vocational knowledge and skills (Olofsson and Persson Thunqvist, 2018).

As an outcome of the reforms, the present Swedish system of initial VET is rather heterogenous in contrast to its unified past that had become the norm since the 1990s. A review of the effects of the reform pilot from 1990 did not indicate a clear increase in the participation rate of former VET students in HE (Hall, 2012, 2013; Olofsson and Persson Thunqvist, 2018; Statistics Sweden, 2013, p. 14). The general HE participation rate has

increased. Among vocational students, 6–7 out of 10 of the students finished their upper secondary education and were qualified for HE (Statistics Sweden, 2013). At the same time, enrolment in VET programmes in general has declined from 50 percent in the 1990s to 27 percent in 2013, and Swedish VET has had to struggle against the academic drift (Skolverket, 2013; Virolainen and Persson Thunqvist, 2017). The need to counteract the academic drift in order to meet the needs of the labour market as well as to decrease youth unemployment has raised renewed interest in promoting apprenticeship training in Sweden.

Finland

In Finland, vocational education expanded remarkably in the 1960s due to the creation of a network of vocational schools established to meet the demands of the growing population after World War II (Laukia, 2013). The shift from an agricultural to an industrial society and further on to a service society was also more rapid in Finland than in other European countries (Haapala, 2006). Since the expansion of VET in the 1960s, the next groundbreaking reforms in Finnish VET's relation to HE took place in the 1980s and 1990s, whereas the 1970s saw the establishment of the nine-year comprehensive school system. In the upper secondary school reform during 1982–1988, a general education component was enhanced in the VET qualifications. Despite the hierarchical and stratified structure of VET programmes, the reform initiated a route to higher education via so-called college institutions ('Opistoaste', in Finnish). Thus, it changed the status of VET from being an educational dead end with no prospect of progressing to HE, which was previously only possible along the general upper secondary education route (Salminen, 1999; Numminen, 2000; Väärälä, 1995; Laukia, 2013).

In the 1990s, the reforms of the Finnish education system took advantage of experience gained from the youth education and polytechnics experiments, and the vocational qualification structure was developed further. The stratified structure of VET was replaced by a consecutive educational structure, curricula were modularised, the number of qualifications was reduced, and the accreditation of prior learning was to be emphasised. Through these VET reforms, local education providers gained more responsibility for planning curriculum contents, while the duration of education programmes, the qualification structure of education and the national aims were still decided at the national level (Laukia, 2013; Numminen, 2000; Salminen, 1999; Stenström and Virolainen, 2016; Väärälä, 1995).

The reforms of the 1990s improved young people's eligibility for HE, and as part of these reforms all VET qualification programmes were extended to last three years. In parallel, vocational colleges (Opistoaste) were abolished once the universities of applied sciences (UAS) were permanently established on the basis of the former vocational colleges following the *polytechnics experiment*. In addition to extending the duration of VET qualification programmes, work-based learning was given greater emphasis in VET by incorporating obligatory on-the-job learning periods (about 6 months). Furthermore, at the beginning of the 2000s, a Finnish system of skills demonstrations was adopted as a new pedagogical approach emphasising educational collaboration with the working world. As an outcome of the so-called *youth education experiment*, many cities continued to offer dual qualifications in order to widen the bridge from VET to HE. This enabled students to complete the matriculation examination of their general upper secondary education and their VET qualification in parallel. In 2012, the share of young VET graduates among matriculated students (i.e., completers of the dual qualification) was 7.6 percent (Kumpulainen, 2014, pp. 78, 81).

The latest Finnish VET reform introduced during 2015–2018 emphasised individual study progress and the competence-based approach. Even though the national curriculum framework is committed to equal opportunities and provides access to HE, the decreased funding of both the VET and HE system has led to the weakening of VET graduates' position vis-à-vis general upper secondary school graduates in competition for study places in HE. Some UAS have adopted entrance examinations for VET graduates as of the 2010s. In general, VET graduates' entrance to traditional science universities has not changed from the 2–3 percent rate seen in 1995 and during 2008–2009, even though field-specific exceptions with higher participation rates exist (Ahola, 1997; Kumpulainen, 2009). Around one third of applicants to UAS have a VET background, and they make up around 20–80 percent of entrants, varying between study programmes (Hintsanen et al., 2016). The funding models of the Ministry of Education underline study progress, and VET graduates' rate of dropping out of UAS studies has been higher than for general upper secondary students in some fields of education (Halonen, 2015; Stenström et al., 2012). In sum, access to HE is highly competitive in Finland despite the introduction of opportunities for eligibility via the VET route (see also Kilpi-Jakonen et al., 2016).

Comparison of transitions to HE

In the previous sections, we have described how transitions to HE via the VET route have been developed in the Nordic education systems. The comparison of the Nordic education systems' developments highlights how decisions on the organising of VET's relationship with the general upper secondary education system and on the provision of general subject contents have been key issues in reforms and in anchoring the institutional development of VET's relation to HE. Over the years, this has led to the establishing of education systems with deeper stratification (Denmark), integrated programmes and the reintroduction of apprenticeships (Swedish 'Gy-11' reform), binary and combinatory solutions (Finland, ordinary VET and experimental reform of youth education and dual qualifications), and consecutive optional routes (Norway, '2+2' vs '2+1'). Since the 1990s, all countries have had policy discussions to settle the issue of enabling progress from VET to HE; Norway, Sweden and Finland have developed distinct bridging solutions to offer young VET graduates pathways to HE. The outcomes of these policies are, however, somewhat difficult to compare, because, despite the policy attempts for universal HE access, their definitions and categorisations of HE differ substantially and there are also significant differences between the categorisations of the occupational fields of these countries.

An unintended side-effect of the variety of opportunities on offer has been that Nordic youths transit relatively slowly to HE, but the systemic reasons for delayed transitions and critical transition points vary from country to country (cf., Walther, 2006, 2009). Denmark offers only limited opportunities for progressing from VET to HE, and Norway offers several but not all particularly explicit routes, whereas these are quite clear in Sweden and Finland. In Sweden and Finland, however, formal eligibility is moderated later down the line through competitive HE entrance examinations and requirements. In general, Danish VET students have not acquired eligibility for higher education. The recent introduction of EUX programmes, since 2011, has promised some improvements to this pattern and an easier route to both HE and the working world (see chapter 5). Since Danish VET graduates do have direct access to some short-cycle programmes of HE (Vocational Academies), these would be their primary route to further education. However, even some of these require additional qualifications that can only be achieved through supplementary preparatory courses (typically lasting one year). For Danish VET graduates, the path from VET to higher education thus normally weaves via preparatory courses or adult education ('higher preparatory exam', HF), or via the EUX programme. Since 2011, the EUX programme has offered direct routes to both HE and the working world (see chapter 5).

In contrast, in Norway, access to HE is possible via several routes alongside internationally well-known 2+2 system. The most common route is the third supplementary year in upper secondary school that qualifies students for admission to higher education, but this option runs parallel to apprenticeship training and tends to complicate the progression. The third supplementary year is quite demanding, and a large share of students do not pass their exams. VET students also have the opportunity to enter HE via one of these four routes: 1) By following a special integrated track, TAF/YSK ('teknisk allmennfag/ yrkes- og studiekompetanse', in Norwegian; lit. translation: 'technical general or vocational and academic qualifications'), which combines VET with general education and leads to a trade certificate as well as a general university admission certification within four years. 2) By following the VET route to higher education ('Y-veien', in Norwegian; lit. translation: 'Y-road'). These are programmes adapted to VET graduates, offered by higher education institutions, in particular to meet the demands of the labour market in engineering. The Ministry of Education and Research wants to open up the possibility for VET-route programmes for further fields. Also, 3) the holders of a trade or journeyman's certificate may pursue further studies (duration from 6 months to 2 years) in tertiary vocational education ('fagskole', in Norwegian; lit. translation: 'vocational school') at the EQF-level 5. The completion of a two-year post-secondary (non-tertiary) programme qualifies students for admission to higher education, provided the applicants can demonstrate a sufficient academic level in Norwegian language. Furthermore, 4) applicants aged 25 years or more can apply for admission to higher education based on the recognition of their prior learning, RPL.

In Sweden, the qualification structure provides access to HE for VET students, but not all students achieve the targeted level in order to qualify for HE. The share of qualified students varies by programme. For instance, in the school year 2014–2015, it varied from 20 percent of students in the Energy study programme to 60 percent of those in the Health Care programme gaining eligibility for HE (Skolverket, 2016). In Finland, completing all three years of the VET programme successfully yields general eligibility for HE by law; however, VET graduates' access to HE is still complicated by highly competitive entrance requirements, with eligibility ultimately also depending on students' final grades (Numerus Clausus) and individual HE institutions' entrance examinations. Often, Finnish VET students willing to ensure their eligibility for HE are on firmer ground if they have completed a so-called 'dual qualification', that is, the matriculation examination of general upper secondary school and a VET qualification. Furthermore, the recent trend in VET reforms, during 2015–

2018, steering toward the competence-based approach, as well as the existing variety of general studies depending on education providers' preferences, have caused regional differences in opportunities among youths in Finland.

In sum, Nordic VET systems have developed various bridging solutions to enable VET graduates' eligibility for HE. While the pathways leading to such eligibility are more or less direct and explicit, the complexity of the various conditions for eligibility make youths dependent on guidance counselling regarding the progression opportunities. Finland and Sweden have a more integrated system, while Norway and Denmark have more auxiliary routes. The progression routes for Norwegians have been more systematic and embedded in the education structure than has been the case for the Danish routes until the introduction of the EUX system. In general, the differences between the Nordic HE systems complicate the comparison of the success rates of Nordic students' transitioning from VET to HE.

Differences between Nordic HE systems

The differences between how Nordic HE systems enable VET graduates' eligibility are reflected in the number of entrants to HE (see Table 1) and seen implicitly in the general rate of the different age groups of adults who have completed a tertiary education (see Table 2). The figures in Table 1 show how the eligibility for entrance to HE with a VET background varies between Nordic countries and their occupational fields. However, these figures have to be interpreted with precaution, firstly as they do not present the HE entrance numbers for the same year per country (see footnote of Table 1), and secondly as the numbers for the time passed since the HE entrants' graduation from VET up to starting HE vary between the countries. Furthermore, the categorisations of the VET occupational fields represented differs between the countries. In general, the number of entrants to HE would be higher if students' whole life span were to be taken into account, but getting access to such representative data was not targeted by the research. Thus, the presented numbers are only an example intended to show how, for instance, progress from Danish VET to HE is on average more rare than in other Nordic countries that have more established routes to HE. The differences reflect country-specific cultures in regard to the intertwinement of education systems and labour market relations, employment situations, occupational hierarchies, demand for labour, and the specific needs of occupations in each field.

The share of Finnish VET graduates among all young applicants to UAS was 27 percent in 2013, on average per UAS (Hintsanen et al., 2016), while the share of those who had started their studies in VET in 2004 and progressed to UAS by 2008 (within the typical four-year follow-up period) varied between 4–15 percent, depending on the field of study (see Table 1). In Sweden, the share of VET graduates studying in HE programmes varies likewise from field to field, ranging from 2 percent of students in Vehicle Engineering having a VET background to around 30 percent in Health Care in the school year 2006–2007 (Skolverket, 2016). In Norway, the highest participation rate of VET students in ‘fagskoler’ has been in the field of Technical and Industrial Production, where 16 percent of participants were VET graduates in 2011 (Nyen et al., 2013). In all Nordic countries, entrance to traditional science universities with a VET background is much rarer. In Finland, the rate in 2001 was 0–13 percent, depending on the field (Vuorinen-Lampila and Valkonen, 2012). In Norway, around 1–9 percent in 2011 (Nyen et al., 2013).

-----Table 1 is placed here-----

In Table 2, the varying outcomes of HE structures become explicit; although, whether the HE entrants stemmed from a general upper secondary school or a VET programme is not differentiated. The figures in Table 2 show that the provision of short-cycle education is strongly represented in the HE structures of Denmark and Norway. It is also the main destination for VET graduates in Norway. In Denmark, however, VET graduates increasingly opt for Bachelor’s degree programmes at university colleges and in an occupational field different to their VET programme (Frederiksen et al., 2012). Swedish VET graduates also continue mostly in higher vocational education (‘yrkeshögskolor’, in Swedish; lit. translation: ‘professional colleges’). In Finland, in contrast, short-cycle HE is only beginning to emerge, as suggested by recent experiments (Aittola et al., 2016). A significant proportion of the younger Finnish age groups completed their Bachelor’s degree at a UAS. Increased rates of the completion of UAS studies is the reason why the share of those who completed Bachelor’s

and/or Master's degrees has been relatively high in Finland compared to other Nordic countries (Hagensen, 2014; Virolainen and Stenström, 2014). However, the statistics for 2015 and 2016 on 25–34-year-olds' completion of HE show that the number of students who completed HE in that period was actually higher per other Nordic country than in Finland (OECD, 2017, p. 51).

-----Table 2 is placed here -----

In sum, participation in HE varies in all of the Nordic countries from field to field. While Finland is the only Nordic country where VET participation has increased since the 1990s by at least 10 percent (Stenström and Virolainen, 2016), the shift in its educational transition pattern from VET to HE has also been significant. This is not only an outcome of HE eligibility. The policies on how UAS choose their students and assess students' VET background depend on their autonomous choice. Finnish UASs have the right to organise entrance examinations and reserve study places for VET graduates. They may also consider work experience as part of their entrance criteria. The expansion of HE via the introduction of UAS is the second main reason for Finnish VET's increased attractiveness. Also, the Finnish educational transition pattern may in future change toward favouring the academic over the VET route as a result of the latest education policies' emphasis on general upper secondary education and the matriculation examination as the basis for student selection at traditional science universities (Stenström and Virolainen, 2016). At the same time, Finnish VET graduates' employment rate has been weaker than that of VET graduates in other Nordic countries. Their lower employment rate is not explained only by the prolonged recession since 2008, but also by the slow recovery from the previous recession in the 1990s as well as by the high rate of HE completion in the overall population having led to increased competition in the labour market (Julkunen and Nätti, 1999; Stenström and Virolainen, 2018). In Sweden, recent policies have placed increased emphasis on the links between VET and the working world in order to improve and increase youth employment, and the changes in VET have been reflected in the diminishing transitions to HE (Persson Thunqvist and Hallqvist, 2014). In Sweden, the general situation has been that

transitions to HE have been less common via male-dominated VET programmes aimed at specific occupations such as building and construction than via female-dominated VET programmes broadly oriented toward occupational fields such as the arts and media (Virolainen and Persson Thunqvist, 2017).

Conclusions

In the Nordic countries, higher education systems have significant similarities, in broad terms, such as public funding and related state control, tuition-free education and very high rates of enrolment despite the introduction of marketisation and managerialism in recent decades. In contrast to other countries, the Nordic systems of higher education have been characterised as less market-oriented and less hierarchical than the Anglo-American systems as well as less academically focused than the continental European systems (Antikainen, 2016). Still, from the perspective of VET graduates and their opportunities to progress to HE, the Nordic systems of HE also have major differences between each other. First of all, the eligibility requirements for VET graduates to enter HE differ and there are also general differences between the HE systems. In particular, the provision of professionally oriented HE makes each Nordic HE system distinct. What Nordic countries have in common is that creating a parity of esteem between VET graduates and graduates of general upper secondary programmes in regard to gaining access to HE is still a challenge.

As for learning policies, it is, firstly, notable that the Nordic attempts to bridge VET and HE have developed at a different pace and the relation between their respective VET and national education systems varies. On the one hand, the Danish hybridisation strategy and Norwegian VET system have intended to integrate apprenticeships and HE preparation (EUX and YSK). On the other hand, since 2011, Sweden has offered unified upper secondary education and enhanced work-based learning in integrated vocational programmes. Finland has based its approach to bridging on enhancing the general subject content in school-based vocational education, but emphasises individual choice in this in the most recent reform covering 2015–2018. Every Nordic VET–HE bridging model that has been established at some point in time has been reconsidered, renegotiated or reformed.

Secondly, the provision of short-cycle HE has different roles in various Nordic education systems. In Denmark, historically, it has held a strong position in contrast to Finland, where it has not yet established itself. Thirdly, the adoption of the Bologna structure of HE has not had similar effects in the Nordic countries in regard to the transitioning from VET to HE. While HE entrance requirements have been formalised, the interpretation of HE institutions' autonomy to decide on them have varied across the Nordic countries. In Denmark, the adoption of the Bologna structure has caused a growing time gap in these transitions, probably also due to a weak VET–HE bridging model. Fourthly, based on the experienced decline in the enrolment rate for VET in Norway, Denmark and especially Sweden after 2011, it seems that clear progression routes to HE are required to make VET an attractive alternative to the academic programmes of upper secondary education. However, the experience in Sweden since 1991 demonstrates that including academic subjects in all VET programmes in order to provide eligibility for higher education to everyone tends disadvantage students from non-academic backgrounds. In this respect, the Finnish strategy of combining skills demonstrations and enhanced on-the-job learning in addition to offering academic subjects appears to be a promising development concerning VET graduates' options for gaining eligibility for HE. Fifthly, in Finland, the UAS reform has succeeded in creating clear progression routes from VET to HE and this has contributed to raising the attractiveness of VET. Even though a similar effect is not visible in Denmark following the establishment of Vocational Academies there, the Danish outcome reflects that VET graduates in Denmark tend to already be employed in the labour market by the time they have completed their VET programme and it is thus less of an incentive for them to continue in or re-enter the education system. In Finland, the high level of unemployment compared to other Nordic countries has hampered youths' transition from VET to the labour market and thus made it an incentive to continue along the educational path.

Our descriptions of the Nordic VET systems' developments with respect to transitioning to HE have portrayed the diversity and dynamics of the systemic development in each of the Scandinavian countries. The secondary data derived from the project Nord-VET has enabled us to sketch some of the dynamics of the systemic developments as well as their recent outcomes. These findings give support to what has been found, namely, 'generic conditions for successful transitions'. Successful transitions are generally supported by "a healthy economy, well-organised pathways that connect initial education with work and further study, widespread opportunities for workplace experience to be combined with education,

tightly knit safety nets for those at risk, good information and guidance, and effective institutions and processes” (Raffe, 2008, p. 291). Previous research has also shown that transition systems’ many dimensions are interconnected and embedded in their national contexts, which makes their comparison challenging. As one kind of data typically only reflects some aspects of a systemic change, only a partial view of the complete picture can be gained—which has also been the case for this study. Our secondary data enabled identifying key turning points in education policy and their outcomes in terms of HE participation rates. As eligibility for HE has been an organisational challenge for all Nordic countries and has had an effect on transition patterns and education policies, it deserves further investigation. The differences between the occupational fields of education, their relations to the dominant forms of production in the labour market of each country, as well as the aspect of vulnerability within the present global economy all deserve more attention. Furthermore, the relevance of short- versus long-cycle HE qualifications as forms of further education for VET graduates also deserves further research. The modifications, that Busemeyer (2015) has suggested, to theories explaining institutional diversity of education and training systems further highlight one particular trait of education policies that should be examined further: the policy processes by which educational goals are defined and negotiated. In regard to transitions to and from VET, the processes by which curricular aims are defined are particularly interesting as the general content and adequacy of general competencies with respect to demands in further and higher education are defined in these processes. In particular, the polarisation and the hybridisation of job profiles in the labour market invite researchers and policy makers to rethink the education systems’ affordances concerning lifelong learning and further education opportunities. During career changes, people need career management skills, abilities and affordances to learn on the job, and they should be able to combine new learning taking place on the job with knowledge and skills learned in the past. A challenge for VET communities of practitioners is not to lose their field-specific knowledge, skills and competence when additional skills are demanded.

A deeper understanding of curricular processes would also be helpful as significant changes in the labour market can even stir up panic among policy makers, and modifications made to the education system in such circumstances are bound to lead to fragmented solutions. For example, Busemeyer’s study in 2015 brought up the temporality of educational reforms, remarking: long-term changes demand long-term commitment. Further comparative analyses of the educational experiences of youths would also be useful as interpreters of national

transition systems since transitions to HE are relatively lengthy and complex in Nordic countries (despite their differences) compared to other countries. More information on what the reasons for the slow transitioning are is needed to assess whether, for example, these involve a lack of guidance counselling and information which would help students in making career choices, a lack of transparency regarding educational outcomes in terms of employment, a lack of independence from economic pressures, the insecurity of careers, the current cultural changes in society, a combination of these or something else.

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Table 1. *Transitions from VET to HE in the Four Nordic Countries by Field of Education*

Denmark⁵		Norway⁶		Finland⁷		Sweden⁸	
Apprenticeship programmes' VET graduates who entered HE 5 years after completion of VET	Cohort 2006, %	VET graduates registered in HE within 5 years after completion of VET	Cohort 2007, %	VET graduates who entered UAS 1–2 years after completion of VET	2008, %	VET graduates who entered HE 3 years after completion of VET	2006–2007, %
Business & Retail	10.7	Design, Arts & Crafts	14	Humanities & Education	12.8	Business & Administration	15.1
Construction	3.0	Building & Construction	10	Culture	14.7	Building & Construction	2.3
Metal & Mechanical	1.9	Electricity & Electronics	21	Social Sciences, Business and Administration	13.6	Media	8.2
Media & Graphics	3.3	Technical & Industrial Production	13	Natural Sciences	15.0	Electricity	9.6
Technical & Industry	4.7	Restaurant & Food Processing	18	Technology,	5.3	Energy	6.1
Social Services	2.0	Service & Transport	32	Communication & Transport		Industry	5.2
Restaurant & Catering	2.0	Health Care, Child Care & Youth Development	22	Natural Resources & Environment	6.9	Food	8.2
Transport	4.8			Social Services, Health and Sport	9.9	Vehicle Engineering	1.9
Health	3.8			Tourism, Catering & Domestic Services	7.3	Child Care & Recreation	24.3
				Other	3.6	Handicraft	13.8
						Hotel & Restaurant	9.8
						Food	8.2
						Media	30.2
						Agriculture	18.0
						Health Care	28.7

⁵ Denmark: Progression to higher education within 5 years of completion of an apprenticeship in Denmark, real (not estimated) transition rates. Source: Frederiksen et al. (2012). Muligheder og barrierer på erhvervsuddannede unges vej til videregående uddannelse [Opportunities and Barriers in Journeymen's Progression to Higher Education]. Roskilde: Roskilde Universitet. <http://rucforsk.ruc.dk>

⁶ Norway: VET graduates who entered higher education within 5 years after completion. The table includes only those who were 21 years old or younger when completing VET. Source: Nyen et al. (2015).

⁷ Finland: VET Graduates' progression to UAS by field of education (within 1–2 years after completion). Source: Stenström et al. (2012, p.83).

⁸ Sweden: Transition from upper secondary VET to higher education within 3 years after completion, by VET programme and cohort, 2006/07. (Skolverket, 2016).

Table 2. *Adults who have Attained Tertiary Education, By Type of Programme and Age Group (adopted from OECD, 2015, p. 41)*

Education and age group	Finland (FI) %	Denmark (DK) %	Norway (NO) %	Sweden (SE) %	Germany (DE) %	United Kingdom (UK) %
Short cycle	0	4	14	10	0	8
25-34	17	4	9	11	1	11
55-64						
Bachelor's						
25-34	26	22	22	22	14	31
55-64	7	18	16	9	14	16
Master's						
25-34	14	15	12	13	13	10
55-64	9	7	6	9	10	7

Note: The OECD's data refers to ISCED 2011. Definitions and categorisations have changed in recent decades and therefore comparisons of age groups are somewhat problematic.