Case study Finland

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Delivering IVET: institutional diversification and/or expansion?

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Chapter 1. Introduction

The main reforms of the 1990s

In Finland, the vocational education and training (later VET) was developed through the following reforms in the 1990s:

- First, the youth education experiment enhanced collaboration between general upper secondary schools and vocational education and training institutions (Numminen, 2000).
- Second, the establishment of the system for competence based qualifications for adults enabled adults with work experience to have their competences qualified (independent from where the competencies had been achieved) since 1994 (Ministry of Education and Culture: Working group for qualification committee, 2002; Lahtinen, Lankinen & Sulonen, 2006).
- Third, the curricula of initial VET were extended to last three years (Stenström, 1997; Lahtinen, Lankinen & Sulonen, 2006).
- Fourth, the universities of applied sciences were developed and regularised after an experimental phase (Rantanen & Toikko, 2012). Later, they became the major route for higher education for those with vocational upper secondary qualifications (Hintsanen et al. 2016). However, vocational further education addressing the needs of more practice-oriented vocational further education was provided through competence based qualifications for adults (Lahtinen, Lankinen & Sulonen, 2006).
- Fifth, the legislative framework for apprenticeship training was reformed in 1993. Later it was merged with the law on youth and adult VET in 1998 (Laki oppisopimuskoulutuksesta [Apprenticeship Training Act]1605/1992, Laki ammatillisesta koulutuksesta [Vocational Education and Training Act] 630/1998, Laki ammatillisesta aikuiskoulutuksesta [Adult Vocational Education and Training Act] 631/1998). The role of apprenticeship training was emphasised as a part of labour policy in the 1990s (Kivinen & Peltomäki, 1999).

The reforms were introduced to reconcile structural problems identified in the education system, such as stratification, isolated provision of general studies within initial vocational study programmes, inadequate progress of studies, demand to increase participation in further and continuing education and eligibility to higher education. Furthermore, the status of VET in education system was an issue and there was an increased need for further and higher educated employees to meet the demands of the labour market. Through the reforms education system was expected to meet the needs of the changing society and working life better.

Historic background of the reforms in the 1990s

The reform efforts of the 1990s had their background in the existing structure of education system. The network of vocational schools established in the 1960s had initiated the firm role of school-based VET in the Finnish education system (Heikkinen, 2001; Laukia, 2013; Stenström & Virolainen, 2018). Already in the 1970s, the demands for reforming VET were charLerised by the need to enhance relations between VET and general education, and to reconcile tensions within different levels of vocational education (i.e. school level vs. college level education; Numminen, 2000). Compulsory education reform was implemented in 1972-1977. As a result, common nine-year-long comprehensive education (i.e. peruskoulu) was provided for all population (Rinne, 2013). It replaced the former, more stratified basic education system, where young were to choose, whether they wanted to continue to general upper secondary education already on the 4th grade.

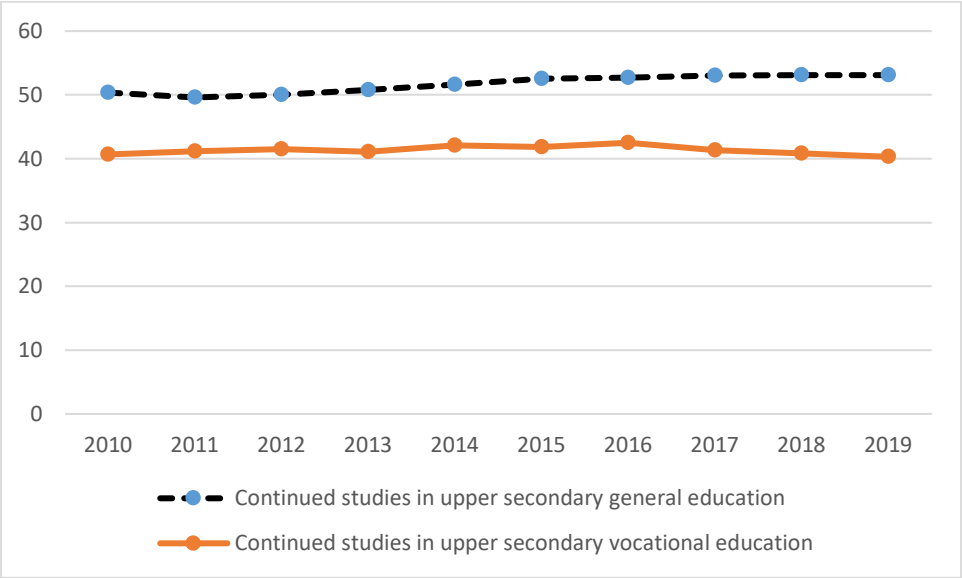
The issue of providing general education and more generic education as part of VET was addressed in the 1980s, when upper secondary education reform was carried out in VET in 1982-1988. It changed the former, more stratified and consecutive model of VET with separate school and college level VET (Salminen 1999, Numminen, 2000). The reform also aimed at making students more equal by guiding them to choose vocational field of their interest before choosing the level of education. The reform introduced a common first year, basic studies period which was the same for both the first year of the vocational upper secondary education (school level vocational education) and post-secondary education (college level vocational education) curriculum. The new general study component aimed at developing general vocational abilities, technological competences, communication skills and environmental protection skills. (Stenström & Virolainen, 2014a; Virolainen & Stenström, 2015.)

The overall curriculum aim of school-based VET was to combine specific occupational skills with more general vocational skills of the educational field in question (Ekola, 1991; Numminen, 2000; Stenström & Virolainen, 2014a). In the reform 1982-1988, the qualification structure was reformed and VET curricula were integrated into 25 basic programmes, which were further divided into specialisation lines on upper secondary and postsecondary levels. Unfortunately, the curriculum reform was not in the favour of students. Despite that, it increased the amount of general studies in the vocational curricula considerably, to amount to the fifth or fourth of the programmes´ duration (Ekola, 1991; Numminen, 2000; Stenström & Virolainen 2014a; Virolainen & Stenström, 2015). Also, the reform introduced a route to higher education via post-secondary education (Numminen 2000, Laukia 2013).

In the Finnish education system, like in many other countries, the differentiation of general upper secondary education and vocational upper secondary education has been a continuing characteristic. Likewise, the status of VET has been a continuing concern for education policy, when aiming to promote faster transitions to the world of work and equality (Lahelma, 2009; Lappalainen, Mietola, & Lahelma, 2012; Brunila et. al. 2011; Stenström & Virolainen, 2018; Rintala & Nokelainen, 2020). Since 1980s, many Finnish reform attempts reflect the pursuit to alleviate the status differences between general upper secondary education and VET and provide students with the skills needed for further and higher education, as well as to build the education system to meet the needs of both youth and adult education. Toward the end of the

1990s and in 2000s participation in initial VET increased to the level that around 40% of compulsory school leavers go to initial VET while 53% go to general upper secondary school. In recent years, the number of compulsory school leavers choosing VET has decreased slightly from 42% (2015-2016) to 40% (2019) of compulsory school leavers (see Figure 1.).

Figure 1. Direct transition to further studies, completers of the 9th grade of comprehensive school 2010 – 2019 (%, Official Statistics Finland, 2020a)



Key changes that have taken place in VET in the 2020s

In Finland, the latest reform of VET took place in 2017-2018 and it unified the legislative framework for youth and adult VET. The reform underlined the goal of enabling individual progress and more flexible study times, based on the accreditation of prior learning and individual starting points for studies (Virolainen, 2018; Nokelainen & Rintala, 2017). In addition, the VET curricula structure has been reformed to include less qualifications.

The role of initial VET will be to some extent redefined in the education system when the next reform of upper secondary education will be applied since 2021 (autumn). According to recent decision by the government (2021) compulsory education will be prolonged to last until students become 18 years old, i.e. compulsory education ends at the age of 18 or when upper secondary qualification has been completed (the upper secondary school syllabus and matriculation examination or one vocational upper secondary qualification). The reform has been justified by the need to have a greater share of the young to complete upper secondary education. The reform is expected to underline the meaning of collaboration between various educational institutions regionally.

Chapter 2. Blurring of boundaries between general education and IVET at upper secondary level

Description of the reforms of VET on system level

On one hand, some reforms of Finnish VET have aimed at increasing equality between VET and general upper secondary studies, and to enable eligibility for higher education in order to increase participation in VET since the 1990s. On the other hand, pedagogy and work-based learning have been developed, and there has been increased emphasis on the efficiency of the VET system. Several, consecutive reform efforts have been directed to accomplish each target.

In the youth education experiments (1992-2001) the aim was to increase equality and freedom of choice between different upper secondary education routes. In accordance, students were allowed to choose studies across institutional boundaries between general upper secondary and vocational upper secondary education institutions. It enabled vocational students to achieve eligibility for higher education by choosing general upper secondary studies. For general upper secondary students, it enabled the completion of initial VET qualification beside the general upper secondary studies. The youth education experiment did not change qualification structures. It preserved the vocational and general upper secondary curriculum as such, allowing individuals making choices within existing frameworks up to 30-40% (Numminen, 1997; Virolainen, 2000, 2001).

The provision of double qualifications started through the youth education experiments has continued. They have been provided in cities, and collaboration between vocational and general upper secondary schools has been stipulated in the legislation (Lahtinen, Lankinen & Sulonen, 2006; Virolainen, & Stenström, 2015; Lietzén & Silvennoinen, 2020; n.a. opintopolku.fi). In the 2010s, enhancing the collaboration of upper secondary education institutions with the institutions of higher education has also been an important developmental goal at some regions, like central Finland (edufutura.fi, n.d.). Since 2015, the number of students completing double qualifications has decreased on the national level, but the trends differ slightly between regions. The overall completion rates are presented in Table 1. Otherwise, the experimental framework was abolished and last student intake in the regional experiments took place in 2001 (Laki nuorisoasteen koulutuksen ja ammattikorkeakoulujen kokeiluista annetun lain kumoamisesta annetun lain 3 §:n muuttamisesta 519/2000 [Change of Youth Education experiments' and Pilots of Universities of Applied Sciences' Cancelling Act 519/2000).

Table 1: Completion of double qualifications in 1999-2019

Year	Number of students who completed both initial VET qualification and matriculation examination	Year	Number of students who completed both initial VET qualification and matriculation examination
1999-2000	1089	2010	2321
2000-2001	1304	2011	2143
2001-2002	1444	2012	2288
2002-2003	1507	2013	2303
2003-2004	1518	2014	2170
2004-2005	1492	2015	2183
2005-2006	1422	2016	1984
2006-2007	1589	2017	1910
2008	¨	2018	1799
2009	¨	2019	1594

Note: Figures for the years 1999-2007 adopted from Kumpulainen (2009, p.98). Figures for years 2010-2019 adopted from Education Statistics Finland (https:// Vipunen.fi, "Ammatillisen tutkinnon ja perustutkinnon suorittaneet").

In parallel to the youth education experiment polytechnics had been developed through a period of developmental pilots since 1991. They replaced the former vocational colleges and became gradually regularised part of the Finnish dual higher education system since 1996 (Böckerman, Hämäläinen & Uusitalo, 2009; Rantanen & Toikko, 2016). At present there are 24 universities of applied sciences.

Furthermore, the vocational ***core curricula were renewed***. In the curriculum reform of the 1993-1994, the subject-based curricula were replaced with the broader approach based on occupational core activities and competence-based aims. The competence-based approach was enhanced in the consecutive curriculum reforms and renewal of assessment in VET (Kärki, 2014). In 1995, the central governance and regulation of VET was decreased, and more authority was given to local education providers. While National Board of Education provided the national basis for curriculum (core curriculum), individual providers were to plan the education within these national frameworks (Väärälä 1995; Stenström, 1997; Seinäjoen koulutuskuntayhtymä Koulutuskeskus SEDU, 2016). The curriculum reform enhanced opportunities to participate in continuing education, because it enabled those with vocational two year qualifications (80 study credits) to gain eligibility for polytechnics in the same field, and three year VET qualification (120 study credits) gave eligibility for higher education at polytechnics at any field of education (Stenström, 1997).

In 1994, the ***competence based qualifications system*** was established to address the needs of adult learners (Virolainen & Stenström, 2015; National Board of Education, 2000; Stenström & Virolainen, 2018). First, the competence based qualifications were governed by the law on vocational qualifications in 1994 (Ammattitutkintolaki [Vocational Qualifications Act]306/1994) and later by law on vocational adult education (Laki ammatillisesta aikuiskoulutuksesta [Adult Vocational Education and Training Act] 631/1998). Through the system of competence based qualifications, it became possible to complete vocational qualifications at levels EQF4-5: initial vocational qualifications (ammatillinen perustutkinto),

and further vocational qualifications (ammattitutkinto) and specialist vocational qualifications (erikoisammattitutkinto; Lahtinen, Lankinen & Sulonen, 2006). The legislation given in 1998 defined VET qualifications to last two years in the minimum (Asetus ammatillisesta koulutuksesta [Vocational Education and Training Decree] 811/1998; Laki ammatillisesta koulutuksesta [Vocational Education and Training Act] 630/1998). The separate legislation for youth and adult vocational education was abolished in the reform of 2018 (Laki ammatillisesta koulutuksesta [Vocational Education and Training Act] 531/2017).

The separate law governing ***apprenticeship training*** was abolished and decrees for apprenticeship training became part of the laws set for youth and adult VET in 1998 (Kivinen & Peltomäki, 1999; Lahtinen, Lankinen & Sulonen, 2006). The laws defined apprenticeship as one of the possible ways to organise learning for any vocational qualifications (EQF4-EQF 5; perustutkinnot, ammattitutkinnot, erityisammattitutkinnot). In addition, it was possible to complete further training not aiming at whole qualifications (Lahtinen, Lankinen & Sulonen, 2006, p. 168). At the same time, the organisation of apprenticeship training was transformed to be the right and responsibility of vocational education providers (Lahtinen, Lankinen & Sulonen, 2006). Accordingly, the approval of apprentice contracts, preparing personal development plans for students, and organising the provision of general studies as well as providing the more theory oriented studies needed in the vocation was set as the behalf of education providers. In addition, education providers had to organise the delivery of compensations for employers and students and opportunities for competence tests. All providers of VET had the right to organise apprenticeship training. Previously, the organisation of apprenticeships had been the responsibility of communities (Lahtinen, Lankinen & Sulonen, 2006). Thus, the shift aligned the provision and organisation of apprenticeships with the provision of vocational education in general.

In the following curriculum reform, in 1999-2001, VET curricula were further reformed and ***all initial VET qualifications were extended to last three years*** (equal to 120 study weeks) by the decision of the Ministry of Education (Numminen, 2000; Opetusministeriön asetus A [Decree by the Ministry of Education] 216/2001). Further, each study programme was demanded to include the minimum of 20 study weeks of on-the-job learning, which was equal to half a year of studies (Lahtinen, Lankinen & Sulonen, 2006). The lengthening of studies meant increasing on-the-job learning as part of the qualification in particular.

The introduction of ***skills demonstrations*** in initial VET put an increased emphasis on the vocational skills and work-based learning in the vocational upper secondary qualifications (Haltia, 2006; Stenström & Laine, 2006; Räkköläinen, 2011;Virtanen, 2013; Räisänen & Räkköläinen, 2014). The skills demonstrations were introduced as a new form of assessment in the upper secondary qualifications by the decision of the Ministry of Education and Culture (Opetusministeriön päätös 212/430/98; see Vehviläinen, 2004, p. 7). They were developed through a number of pilots, supported by European Social Research fund (ESR) (Vehviläinen, 2004; Räkköläinen, 2011). The skills demonstrations were made part of each module of the vocational qualification. Despite the numerous pilots, legislation for the new approach to assesment was not given until 2005 (Ministry of Education and Culture 212/ 430/1998; Haapakorpi, 2007; Anttila et al. 2010; Räkköläinen 2011, 32-33; Laki ammatillisesta koulutuksesta annetun lain muuttamisesta [Change of Vocational Education and Training Act]

601/2005; Valtioneuvoston asetus ammatillisesta koulutuksesta annetun asetuksen muuttamisesta [Change of Previous Decree on Vocational Education and Training Decree] 603/2005; Valtioneuvoston asetus ammatillisesta koulutuksesta annetun asetuksen muuttamisesta [Change of Previous Decree on Vocational Education and Training] 799/2014). (Later, as the competence based approach was enhanced and legislation for youth and adult VET unified the skills demonstrations were also renamed as competence demonstrations.)

In the curriculum design of initial VET, the shift from national core curricula toward national vocational qualification requirements was realised between in the 2000s, when the competence-based approach was enhanced and skills demonstrations introduced as part of the initial VET qualifications (see Kärki, 2014). Altogether there were 52 qualifications and 120 related more specific study programmes on the upper secondary level at the beginning of the 2010s (Ammatillisen tutkintojärjestelmän kehittämishankkeen (TUTKE) ohjausryhmä [Supervisory committee for the development project of the system of vocational qualifications], 2009).

In 2017-2018, when the latest reform of VET was adopted, one central goal was to decrease the number of qualifications and to clarify the qualification structure in order to decrease administrative costs related to maintaining the system (Hallituksen esitys [Government Proposal for Legislation on VET and Some Related Acts], 2017). The number of vocational qualifications was decreased from the total of 351 different qualifications at initial, further and specialist level to 164 qualifications in total. (Later the number of vocational qualifications was slightly decreased further).

The transformation of the qualification structure and development of further and higher education opportunities between the 1990s and 2020 have been summarized in the following Table 2.

Table 2: Developments in the qualification structure of vocational education and training and its relations to higher education

	In the late 1990s*	The 2000s*	The 2010s prior to new legislation 2017*	Years 2018-2020	2021-
Qualification structure: number of qualifications*	77 upper secondary and 80 post-secondary VET qualifications	-52 qualifications with over 110 specifications[1]	-52 qualifications with reformed specifications and 122 specifications[2]: altogether 351[3] vocational qualifications on various levels (further [FE] and specialist vocational qualifications, [SPV])	-in sum 164 vocational qualifications	- compulsory education extended until the age of 18 (in August 2021): -since 1.1.2021; -44 vocational upper secondary qualifications; 64 further vocational qualifications and 55 specialist vocational qualifications[5]
Vocational further and higher education opportunities after initial VET and qualification structure	Consecutive structure of two-year upper secondary qualifications and three year post-secondary qualifications created; studies leading to three-year post-secondary qualifications offered by vocational colleges were replaced by the UAS and their qualifications	-FE and SPV -Universities of applied sciences established as the permanent part of HE sector; experiment of second-cycle polytechnic degrees (polytechnic Master´s degrees).	-FE, SPV -UAS Bachelor´s degrees -UAS Master´s degrees provide an option for professional HE (eligibility for these is given by a relevant first-cycle degree with at least three years of relevant work or artistic experience).	-FE, SPV -UAS Bachelor´s degrees -UAS Master´s degrees provide an option for professional HE (eligibility for these is given by a relevant first-cycle degree with at least three years of relevant work or artistic experience).	-FE, SPV -UAS Bachelor´s degrees -UAS Master´s degrees provide an option for professional HE (eligibility for these is given by a relevant first-cycle degree with at least three years of relevant work or artistic experience).
Eligibility for higher education	All initial VET qualifications were extended to three year qualifications	Three year VET gives eligibility for UAS and traditional universities (based on numerus clausus)	Formal eligibility to all HE with VET certificate (based on numerus clausus) The HE institutions have an obligations to reserve study places for 1st time entrants since 2016.	Formal eligibility to all HE with VET certificate (numerus clausus). Young entrants have been reserved 60-80% of study places.[4]	Formal eligibility to all HE with VET certificate (numerus clausus). Young applicants without prior HE study place have been reserved 60-80% of study places since 2015.[4]

Notes: *Columns from 1990s to 2010s adopted and modified from Virolainen & Stenström, 2015; Stenström & Virolainen, 2015; [1]Ammatillisen … (TUTKE) ohjausryhmä, [2] Ahola & Anttila, 2013; [3]Ministry of Education and Culture (n.d)., [4]Hyvönen, 2018. [5]National Board of Education (2021)

Change in the provision of common, general studies and qualification requirements

In this sub-section, the shifts in the curricula of vocational education and training vis á vis the provision of common, more general studies are described on broad terms.

At the end of the 1990s, the decrees given about the contents of vocational qualifications stipulated the amount of obligatory general studies to be 16 study credits within a three year qualification (equal to 120 study credits [scs]) on the whole. In addition, students could choose optional general common studies up to 4 study credits and free choice studies so that on the whole the amount of general studies, when obligatory and 'free choice studies' were combined could be up to 40 study credits in the maximum. Vocational studies and on-the-job training amounted to 90 study credits in the qualification and common necessary subjects for learning vocational skills 10 study credits. (Valtioneuvoston päätös tutkintojen rakenteesta ja yhteisistä opinnoista ammatillisissa perustutkinnoissa [Government decree on qualification structure and common studies in initial vocational qualifications] 213/1999). In the Finnish VET, the provision of general studies has been defined to follow similar patterns across all initial VET qualifications (EQF 4, ammatillinen perustutkinto). However, adults who completed initial VET (EQF4) through the competence based qualifications system during the previous legislation (Laki ammatillisesta aikuiskoulutuksesta [Law on vocational adult education] 631/1998), did not have to complete the common, more generic studies.

In 2017, the new legislation was given to all vocational education and training. The need for clarifying relations between initial vocational qualifications (ammatillinen perustutkinto, EQF4), further vocational qualifications (ammattitutkinto, EQF4) and specialist vocational qualifications (erikoisammatitutkinto, EQF5) had been recognized already at the beginning of 2010 (Ahola & Anttila, 2013). In 2017, the new legislation was set to replace the previous legislation given in 1998, which had been amended several times. The new legislation enhanced the competence based approach and individual progress. It underlined client-orientedness (Nokelainen & Rintala, 2017; Korpi et al. 2018; Räisänen & Goman, 2018; Virolainen, 2018; Airila et al., 2019). It unified apprenticeship training and former adults' competence based qualifications under the same legislation as initial VET and stipulated the framework for all VET (EQF4-EQF5; initial, further and specialist vocational education and training). The separate legislation for youth and adult education was abolished in this reform, which was implemented in 2018 (Laki ammatillisesta koulutuksesta [Law on vocational education] 531/2017; Nokelainen, 2019; Tapani, Raudasoja & Nokelainen, 2019). There was a shift from organizing work-based learning through 'on-the-job training' to so called 'training agreements' (i.e. 'koulutussopimus', no salary] and apprenticeships (oppisopimus; work contract and trainee´s salary] depending on the learning environments available for learners. It became also possible to combine training agreements and apprenticeships within a qualification.

After reform 2017, the common parts of the curriculum included in the VET curriculum were defined in three groups, to include competence areas, such as 1) communication and interaction competencies (CI); 2) competencies in mathematics and natural sciences (STEM); and 3) societal and working life competencies (SW). These competence areas were to make up to 35 competence points of the total of 180 competence points (cps). In individual students'

studies, the CI competencies have to make up to 11 cps in the minimum, and include competencies such as: communication and interaction and mother tongue, second domestic language, foreign language, acting in digital environment, and arts and creative expression. The STEM competencies include: the adoption of competencies in mathematics and its applications, physics and chemistry and their application and they have to make up to 6cpts (at least) within the whole 35 cpts of common parts in the qualification. The societal and working life competencies include areas such as: acting in society and as a citizen, acting in the working life, studying and the career management skills, entrepreneurship and entrepreneurial action , maintenance of' ability to work and wellbeing, and the promotion of sustainable development. These SW studies have to sum up at least to 9 competence points. On the whole, the common studies include both optional and obligatory parts. (Valtioneuvoston asetus ammatillisesta koulutuksesta [Vocational Education And Training Decree] 5.10.2017/673; see also the National Board of Education, 2015). The qualification requirements of practical nurses from the years 2010 and 2018 have been described in more details in Appendix 1.

In sum, the role of general studies within initial vocational education and training was first enhanced between the 1990s and 2020s (as all VET studies were prolonged). In between 2000-2010, the competence-based approach became more important also for youth education and skills demonstrations (later to be called competence demonstrations) were developed to enable more varied assessment. While the competence based approach is underlined in the national qualification requirements, the education providers have autonomy in implementing the requirements in the pedagogy. Since the 2017-2018 reform of VET, the general studies have been obligatory also for adult students, since adult and youth education are organized under the same legislation. The latest VET reform also underlined the importance of competence demonstrations given to the workplace. The common components of qualifications (general knowledge and key competencies) can still be assessed through assignments and examinations, though. Accordingly, the assessment of common studies and vocational studies may differ. Teacher and student design assessment plan together for those assessments that will take place in authentic workplace environment. The criteria for each module and assessment are presented in national qualification requirements and they were made more precise. They became described in detail for each level of competencies (1-5; 1=satisfactory, …5=excellent). The scale was 1-3 before reform and the interviewed experts found it too narrow both in order to motivate students and to differentiate competence levels. Employers have brought up the need to have more transparent assessment which pictures the competencies of potential employees better (Kilpeläinen & Vettenniemi, 2018). The demand for conducting follow-up and quality assurance was brought up in the recent study by (Kilpeläinen & Vettenniemi, 2018).

The experts interviewed for this case study reflected on some problems which had come up as a result of the change in the qualification requirements, i.e. that also adults who complete initial vocational qualifications have to study the common, more generic parts of the curriculum. Some students had difficulties and needed extra support for common studies. Some were not motivated, or they had got employed, and there were immigrant students who find language studies difficult. In the cases when students do not complete all modules, they cannot become

qualified practical nurses and have permanent employment or in case of assemblers be employed in general. When there was lack of employees, they could, however, get employed. Educational institutions have found various approaches to organize studies in order to support their students and to get adults to complete their qualifications:

- to develop and experiment with various timing for the provision of the different curricula components, e.g. the provision of common (generic) studies on the side of obligatory vocational studies
- the provision of common (generic) studies online
- arranging study groups which support development of studying competencies, for example extra provision on the language studies, and slower progress of studies
- guidance counseling and picturing how further and higher education competencies and opportunities depend on completed studies. Also depending on the qualification in question gaining the permanent contract as an employee may depend on the certificate.

Despite these and other options to offer support for students, some practitioners and interviewed experts brought up the view that earlier legislation (Laki ammatillisesta aikuiskoulutuksesta [Adults' Vocational Education and Training Act] 631/1998) on the competence based qualifications was more suitable for adults and allowed focus on studying vocational subjects in the curricula: "*It so happens that …when students are adults, they have families, and in the evening [after studying at workplace during daytime] they are not particularly willing to start completing common studies. It is difficult to organize groups in a satisfactory way, as all students have their own starting points. In the field for electrician and automation assemblers, you need to have the qualification [for employment]. Part of qualification is not enough."* The common, general, studies were also found quite demanding*: "It is possible that you are not able to complete the common studies with an old general upper secondary certificate*." (Quotes are from an interview for this sub-study with the Expert on the qualifications for electrician and automation assemblers). According to the experience of the interviewed experts, the fields of study and employment are quite different in this respect, how important it is that students have the whole qualification completed and whether they need to have the certificate for a full salary or employment on the whole.

Length of studies and study time: toward individualized progress

In practice, most of the completed vocational qualifications lasted three years around 2010 and the Ministry of Education had given a decree to define all initial vocational qualifications to consist of 120 study weeks, equal to three years of full time education (Opetushallitus [the National Board of Education], 2012;Opetusministeriön asetus [Decree by the Ministry of Education] A 216/2001). Despite this, the law defined that the mimimum length of upper secondary VET was two years which was equal to 80 study credits (Laki ammatillisesta koulutuksesta annetun lain muuttamisesta [Vocational Education and Training Act's Changes Act] 951/2011). In the amendment of the law in 2014, the length of vocational upper secondary studies was defined to be 180 competence points which is equal to three years of full time studies (Laki ammatillisesta koulutuksesta annetun lain muuttamisesta [Vocational Education

and Training Act's Changes Act] 787/2014). Since the reform of 2017, the vocational qualifications include the same amount of studies (180 competence points), but it is in principle possible to complete the studies at individual pace, depending on the existing competencies and progress based on the accreditation of prior learning. Students have their Personal Competence Development Plan designed in the beginning of studies, based on their previous studies and existing competencies, which are accredited. An expert interviewed for this case study reflected on the more flexible organisation of studies and opportunities for an individualised beginning of studies as follows: "*We are a relatively great education provider, and we have five student intakes per year. In May, there will be 50 more entrants. On the whole, we have around 1200 students in the field of social and health care. Flexibility is reality with us*."

Since the reform and new legislation given in 2017 (Laki ammatillisesta koulutuksesta [Vocational Education and Training Act] 531/2017), the separate legislation for young and adults' VET was abolished. Since then it has been possible to complete vocational upper secondary education as school-based education, and embed workplace learning in the studies through training agreement or apprenticeship training or a combination of these. Both young and adults study according to the same national qualification requirements (defined for EQF 4 and 5).The number of qualifications offered was decreased as a part of the reform from around 350 to around 160 vocational qualifications (45 initial vocational qualifications; 65 vocational qualifications and 56 specialist vocational qualifications). The vocational upper secondary qualification is equal to 180 competence points, i.e. three full study years (Ministry of Education and Culture, 2021a; see also Official Statistics Finland, 2021).

Summary of the major changes in VET curricula between 1990s and 2020

In the Finnish VET the reforms introduced since the 1990s have aimed to realize the following changes and shifts:

- from three-year-qualification (adopted in 2001) toward more flexible study times, with more emphasis on individualized study times based on the recognition of adopted competencies and accreditation of prior learning,
- the enhancement of the competence-based approach,
- emphasis on the vocational approach in common, generic qualification components,
- enabling more varied combinations of learning environments within qualifications (training agreements, apprenticeships),
- -more varied assessment through competence demonstrations, including assessment at authentic work environments. The scale of assessment has become more precise: experts interviewed for this case study have appreciated the shift from assessment scale 1-3 to 1-5 in the latest reform (2017). Each level of competence for each competence area has been described in the national qualification requirements.
- -the enhanced role of work-based learning, and opportunity to combine both training agreements and apprenticeship within a qualification, and

- -alignment of qualification structure for young and adults; the abolishment of separate laws for youth and adult education, competence-based qualifications and apprentice training.

The introduction of these shifts through various reforms has been described in the sub-sections above. The development in the provision of generic, common studies as part of VET programmes in relation to the overall curriculum development in the Finnish IVET has been summarized in the Table 3 below.

Table 3: Initial VET programmes' curricula changes between 1990s and 2020s

Characteristics of initial VET qualifications	**Time period**		
	1990s	**2000s**	**2010-2020**
Length of studies	2-3 years 80-120 study weeks	3 years 120 study credits	Flexible study time, personal development plan 180 competence points
Study components measured as	Study weeks (opintoviikko)	Study credits (opintopiste)	Competence points (osaamispiste)
General studies	Common studies (Kaikille yhteiset opinnot) 20 study weeks -studies in mathematics and natural sciences -studies in humanities and societal issues -ethical studies and cultures. Due to free choice, it is possible to study common studies up to 40 study weeks.		Common qualification components (Yhteiset tutkinnon osat) 35 competence points -competencies in communication and interaction -competencies in mathematics and natural sciences, -competencies in societal and working life participation -free choice studies
Learning environments	School and workshop (Apprenticeship as a separate route)	School, workshop and workplace learning	School, workshop and workplace learning, digital (distant) learning
Work-based learning	Practical training (harjoittelu) Training is part of vocational studies Lengt varies between qualifications: Electricians- mimimum 4 study weeks, Practical nurses complete practice related studies in authentic work situations 25 study weeks in the mimimum	On the job learning: 20 study weeks in the minimum (työssäoppiminen)	Training agreement or apprenticeship (koulutussopimus or oppisopimus) In principle up to 145 competence points depending on students' personal study plan and chosen work environment?
Assesment	Teacher. Typically at school.	Skills demonstrations.	Teacher and employer. Preferably at workplace. Competence demonstrations.

Chapter 3. Relationship of IVET at upper secondary levels with that at higher levels

The more vocational and more academic routes at higher levels

In the Finnish education system, there are two major routes to further and higher studies for those with initial vocational qualifications. First, there is a route to deepening and widening vocational competencies: it is to obtain further vocational qualifications at EQF4 level (ammattitutkinto) and/or specialist vocational qualifications at EQF5 level (erikoisammattitutkinto). These qualifications are relevant to those who have completed initial vocational upper secondary qualification (ammatillinen perustutkinto) at EQF level 4, who have some work experience and want to continue their studies. Also for those, who have more practice based interests and want to develop for example to a group leader or supervisor at the workplace or specialize further in some tasks of an occupation or in a related occupation. Second, there is the more 'academic route', i.e. to continue studies at the universities of applied sciences and/or traditional science universities. All VET qualifications, i.e. initial vocational, further vocational qualifications and specialist vocational qualifications provide eligibility for higher education in the same way as general upper secondary studies in Finland.

Further and specialist vocational qualifications

According to the definition provided by the National Board of Education (2021) the further vocational qualifications (ammattitutkinto) aim at more in depth competencies or more specialised competencies than initial vocational qualifications. They can be equal to 120 (competence points) cps, 150 cps or 180 cps, but in general they are equal to 150 cps. In contrast to further vocational qualifications, the specialist vocational qualifications (erikoisammattitutkinto) certify working life oriented competencies, which demand more in depth and multi-field command of an occupation than further vocational qualifications. They are equal to either 160, 180 or 210 cps, but mostly they require 180 cps. In principal, formal qualifications are not required to take part in the competence tests for further vocational qualifications and specialist vocational qualifications, but mostly students and candidates participate in education provided by vocational schools.

The certificates for further and specialist qualifications are awarded by education providers who have the authorisation to provide education and award qualifications. They are granted by the Ministry of Education and Culture. The further and specialist qualifications give eligibility to higher education studies.

For example, those with initial Vocational qualification in Electrical Engineering and Automation Technology may hold qualification title 'electrician and automation assembler' (EQF4; related), and can continue their studies toward further vocational qualifications (EQF 4), such as Further Vocational Qualification in Electrical Engineering and Automation Technology. The related qualification titles are: Electrician (FQ), Automation Assembler (FQ), and Locking and Security Systems Installer (in Finnish: sähköasentaja (AT), automaatioasentaja (AT), lukitus- ja turvajärjestelmäasentaja; the National Board of Education, 2021). The available Specialist Vocational Qualification (EQF 5) is Specialist Vocational

Qualification in Electrical Engineering and Automation Technology. The related qualification titles are Specialist qualification for Electronics assembling, Specialist Qualification for Automation Assembling and Specialist Qualification for Locksmiths (in Finnish: sähköasennusmestari, automaatioasennusmestari, lukkoseppämestari; the National Board of Education, 2021). The competence areas included in the qualifications of Practical nurses (EGF 4) are; care and rehabilitation for elderly people, podiatric care, children's and youth education and care, mental health and substance abuse work, nursing and care, oral health care, care for the disabled, and basic life support (emergency practical nurse).

With respect to the Vocational Qualification in Social and Health Care, and the Qualification of Practical Nurse, the relevant further Vocational Qualifications (EQF4) are:

1. Further Qualification for Masseur/ Masseuses,
2. Further Vocational Qualification in Education and Guidance (Kasvatus- ja ohjausalan ammattitutkinto, 150 cps). The qualification is directed to Learning support assistants/morning and afternoon club activity instructors, for instance; or Childminders. The qualification comprises five competence areas: Learning Support and Morning and Afternoon Club Activity Instruction at School, Family Day Care, Work with the Romanies, Education and Guidance.
3. Further Vocational Qualification in Intellectual Disability Services (Kehitysvamma-alan ammattitutkinto)
4. Further Vocational Qualification in Mental Health and Intoxicant Abuse Welfare Work (Mielenterveys- ja päihdetyön ammattitutkinto)
5. Further Vocational Qualification in Health Care (Terveysalan ammattitutkinto; kipsiteknikko, jalkojenhoitaja (AT), obduktioteknikko) is based on four competence areas and gives education to qualification titles such as Orthopaedic Technician (FQ), Chiropodist (FQ), and Autopsy Technician.

In accordance, the specialist vocational qualifications relevant to Practical Nurses are (EQF 5, ISCED 4)

1. Specialist Vocational Qualification in Massage (180 cps). The related qualification titles are: Masseur/Masseuse (SQ) Lymphatic Drainage Therapist (SQ); Sports Massage Therapist (SQ). (Hieronnan erikoisammattitutkint;hieroja (EAT), lymfahieroja (EAT), urheiluhieroja (EAT)),
2. Specialist Vocational Qualification in Patient Immobilisation (180 cps) (Immobilisaatiohoidon erikoisammattitutkinto). The related qualification title is Orthopaedic Technician (SQ) (kipsimestari)
3. Specialist Vocational Qualification in Education and Guidance (Kasvatus- ja ohjausalan erikoisammattitutkinto)
4. Specialist Vocational Qualification in Rehabilitation, Support and Guidance Services. The related qualification titles are: Special Instructor for People with Disabilities, Specialist in Rehabilitation Counselling for the Visually Impaired and Job Coach

(Kuntoutus-, tuki- ja ohjauspalvelujen erikoisammattitutkinto; vammaisalan erityisohjaaja, näkövammaistaitojen ohjauksen erityisasiantuntija, työvalmentaja)

5. Specialist Vocational Qualification in Mental Health and Intoxicant Abuse Welfare Work (Mielenterveys- ja päihdetyön erikoisammattitutkinto)
6. Specialist Vocational Qualification in Interpreting for Persons with Speech Impairments (Puhevammaisten tulkkauksen erikoisammattitutkinto). The related qualification title is Interpreter for Persons with Speech Impairments
7. Specialist Qualification in Care for the Elderly. The related qualification titles are: Service adviser for elderly persons (SQ), Memory nurse (SQ), Age coach (SQ),Hospice nurse (SQ) (Vanhustyön erikoisammattitutkinto;muistihoitaja (EAT), ikävalmentaja (EAT), ikääntyneen ihmisen palveluohjaaja (EAT), saattohoitaja (EAT)).

From the 1990s, the changes adopted in the qualification structures have been characterized by the establishment of the universities of applied sciences both in the fields of social and health care and electrical engineering. In the Finnish education system, a good number of former college level qualifications, which existed in the field of social and health care are at present provided by the universities of applied sciences. These include the former college level qualifications such as a nurse, midwife, public health nurse, dental nurse, optician, occupational therapist, radiographer, and physiotherapist. The hierarchy of qualification structure vis a vis the universities of applied sciences has developed in a different manner from the field of social and health care in the field of electrical engineering depending on the demand of the labour market and the role of professionals at workplace (Opetushallitus, 1995a, Opetushallitus, 1995b). The universities of applied sciences provide studies for example, for Bachelors in Electrical Engineering and Automation Technology (insinööri, AMK).

Access to universities of applied sciences and traditional science universities

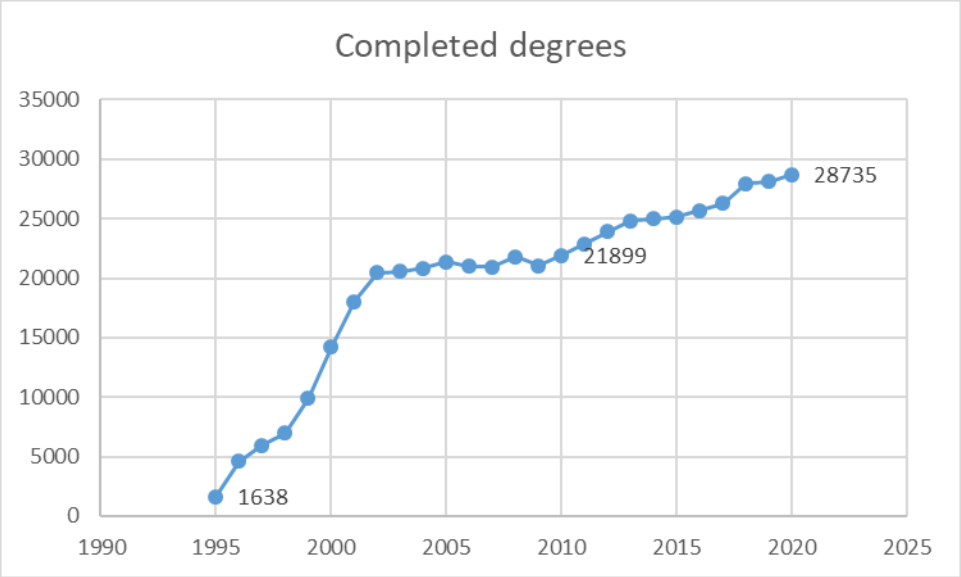
The access to higher education in the traditional science universities or universities of applied sciences is dependent on numerus clausus. Traditionally, access to many educational fields in traditional science universities has been dependent on participation in entrance examinations, as the student intake belongs to the area of universities' autonomy (Yliopistolaki 2009/558 [Universities Act]). Also, some universities of applied sciences have applied entrance examinations at times, but not quite to the same extent as universities (Ammattikorkeakoululaki 2014/932 [Universities of Applied Sciences Act]).The development of the application system, which administers students' choices to higher education has been discussed actively throughout the 2000s (Ahola, 2003: Haltia, Isopahkala-Bouret & Jauhiainen, 2019). A central priority in its development has been to make the transitions of young faster. For example, young applicants who do not have a prior study place in higher education have been reserved 60-80% of study places since 2015 (Hyvönen, 2018). While the organisation of more efficient transition to the youth has been the key issue in the discussion, the fact that there are quite a lot of adult students in higher education has not been addressed to a similar extent (Haltia, Isopahkala-Bouret & Jauhiainen, 2019).

In 2013, around one third of young and adult applicants to the universities of applied sciences had either initial vocational qualification (30.2%), further vocational qualification or

specialist vocational qualification, or both initial vocational qualification (1.4%) and matriculation examination of the general upper secondary education (4.1%) as their former education (Hintsanen et al. 2016, p. 19). Among applicants to youth education in the UAS, there were less those with initial vocational qualifications as their former education (26.7%), while vocational qualifications were more common among applicants to studies targeted to adults (44.4%) (Hintsanen et al., 2016, p. 20). On the whole, the universities of applied sciences have become an important higher education route for students with initial vocational qualifications. In total, around 28700 Bachelors' degrees were completed in the universities of applied sciences in 2020 (see Figure 2).

The share of vocationally qualified who enter higher education has continued to be on quite the same level. Also in 2016, the proportion of students with vocational education background was around on third (34%) among students in the universities of applied sciences, acccording to Eurostudent VI survey (Potila et al. 2017, p. 30; see also Haltia, Isopahkala-Bouret & Jauhiainen, 2021). Furthermore, in the recent 'Koulutuspoliittinen selonteko' (i.e. 'Outline for the report on education policy') (2021) by the present government it was stated that around one fourth of the entrants to youth education in universities of applied sciences and 1% of the entrants to traditional science universities had vocational qualifications as their educational background.

Figure 2. Bachelor's degrees completed at the universities of applied sciences 1995-2020 (Official Statistics Finland, 2020b)



Chapter 4: The changing relationship between IVET and CVET

In Finland, the recession of the 1970s gave an impetus for establishing a stronger network of adult education centres to cater both the needs of re-educating unemployed and adults' further education (Expert interview conducted for this substudy; Janhila, 1997; Kouvolan ammatillinen aikuiskoulutuskeskus, 1996; Varmola, 1994; Purola, 1996).

Between the 1990s and 2020s the continuing vocational education (CVET) has gone through two major periods of reorganization:

- the establishment of the competence based qualification system in the 1990s
- transition to unified legislation for IVET and CVET, and abolishment of the separate competence based qualification system for adults from 2018.

The Finnish initial VET and CVET were stipulated by different laws from 1998 until the new law was given in 2017 (Laki ammatillisesta koulutuksesta [Vocational Education and Training Act] 630/1998; Laki ammatillisesta aikuiskoulutuksesta [Adults' Vocational Education and Training Act] 631/1998). The Vocational Education and Training Act defined the organisation of VET for young and initial, basic vocational education. Initial vocational education included initial vocational qualifications and preparatory education organized to guide and prepare for participation in IVET (Laki ammatillisesta koulutuksesta [Vocational Education and Training Act] 630/1998). The Adults' Vocational Education and Training Act defined the organisation of vocational qualifications, further vocational qualifications and specialist vocational qualifications (Laki ammatillisesta aikuiskoulutuksesta 631/1998; Asetus ammatillisesta aikuiskoulutuksesta 812/1998 [Adults' Vocational Education and Training Act 631/1998; Adult Vocational Education and Training Decree 812/1998]; Ministry of Education and Culture, 2010). In general, the CVET system in Finland does not, by definition include studies in the universities of applied sciences or universities even though some of their studies are clearly professionally oriented (the Ministry of Education and Culture, 2010, p.16).

The competence based qualifications (CBQs) system for adults was established in 1994. CBQs were planned to serve those adults who already had work experience in the field to have an opportunity to show their competence and receive qualification and right to respective salaries. The requirements for youth and adult education were the same for the basic qualifications except for common studies; those who completed CBQs had no opportunity to include the common, general studies as part of their qualifications. The Law for them was given in 1998 (Adults' Vocational Education and Training Act 631/1998). It defined the organisation of the competence based qualifications. The skills and competencies for CBQs could be adopted in any learning context and learning were to be shown in competence tests, independent of formal education. They could include accreditation of prior learning and competencies achieved at workplace or through apprenticeship, combined with school based education wholly or partially. Students participating in competence tests could also choose to participate in preparatory training. In principle, students were to be provided with individual learning programmes paying attention to previous studies and work experience. (Ropponen, 2015.)

As accreditation for competence-based qualification had to be independent of the form of learning, the length and forms of preparatory education was not stipulated formally by any Acts or Decrees. The providers of education could decide about the preparatory education based on the national qualification requirements (the Ministry of Education and Culture, 2020a). The National Board of Education specified and confirmed the requirements for the competence-based qualifications. The centrally planned requirements determined vocational skills required in the qualification 'module by module', and assessment criteria for each module (the National

Board of Education, 2004). The personal, individual plans for preparatory education and organizing participation in competence tests was on the behalf of education providers (the Ministry of Education and Culture, 2010; Viinamäki & Selkälä, 2015). Participation in Competence tests and receiving a qualification was not bound in participation in preparatory training and therefore entering just competence tests was also possible. However, the majority of students preferred participating in preparatory training.

The qualification committees appointed by the National Board of Education for three years term at a time were responsible for arranging and supervising competence tests. Their members were appointed by the National Board of Education from experts in each sector, including teachers, employees, employers or self-employed persons. There could be in the maximum 9 members in each committee. The National Board of Education had appointed altogether 91 committees, which served the period 2016-2018.The committees had a supportive body of secretaries (näyttötutkintosihteeristö) working as part of National Board of Education to support and help the committees by taking care of the practicalities in their activities (Hallituksen esitys… [Government proposal…], 2017).

In 2010, the vocational education system consisted of 187 vocational qualifications (aimed at adults) and 129 specialist vocational qualifications. In addition, initial vocational qualifications (IVET) could be approved through the competence based qualifications system by participating in competence demonstrations (the Ministry of Education and Culture, 2010). In 2016 the number of vocational qualifications was slightly decreased to 177 vocational qualifications and 122 specialist vocational qualifications (competence based qualifications) (Hallituksen esitys…[Government proposal..], 2017).

In 2015, when new legislation for vocational education and training was planned the CVET system of competence based qualifications was criticized for its lack of transparency and comparability (Hallituksen esitys…[Government proposal...], 2017). The varying lengths and extents of the contents of modules were seen as a justification to adopt competence points as the uniform way to measure components in a qualification (Hallituksen esitys… [Government proposal...], 2017).

The large scale reform of Vocational education and training in 2015-2017 meant that a new unified legislation for youth and adult education was adopted from 2018. The reasons given to plan a unified legislation for both the youth and adult education included:

- The qualification structure of the vocational qualifications (initial VET, adult VET, and specialist VET) was not built as continuum and could be overlapping even though it was seen to meet the needs of the labour market and individual development in a satisfactory way (Hallituksen esitys… [Government proposal], 2017 p.68).
- The number of vocational qualifications and vocational specialist qualifications was relatively high, which meant increased administrative costs to organize and maintain responsible bodies.
- The profiles of qualifications were considered too narrow and specified considering the changing labour market needs.

- The system was not responsive to needs of emerging new occupational skill areas. It was seen too slow in adopting new qualifications while the initiative for new qualifications was given to qualification committees.
- If a student completed the competence based qualifications there was no opportunity to complete general studies as part of the qualification as the competence based qualifications only included the vocational parts of qualification requirements. This was considered problematic, because the general studies were seen beneficial for participation in further education and enabling individuals thus meet the needs of the labour market better in the future (Hallituksen esitys… [Government proposal…], 2017, p. 67).

There has been some variance in the participation in the adult CBQs over the years. The completion of CBQs increased from 2000, but not steadily. Between 2000 and 2007 there was an increase from 12 606 to 18 780. Thereafter there was a decrease and non-linear development in the completion rate and in 2010 there were 11886 completers of competence based qualifications. In contrast, in 2011 there were 14871 qualifications taken and during the last year, (when it was possible to complete them before the reform), in 2017, 26 100 competence based qualifications were completed. Since the reform of VET in 2017-2018 it has not been possible to complete vocational qualifications as competence based qualifications through a separate system as before (the Ministry of Education and Culture, 2021b).

In sum, in Finland, the relations of IVET and CVET between the 1990s and the 2020s have been characterised by the following changes:

- shift from the separate legislative framework for youth and adult vocational education to unified legislation as of 2018
- from increasing the provision of specific CVET qualifications in the 2000s to a decreased number of CVET qualifications provided in the 2020s, and
- increased participation in both IVET and CVET for reskilling and further education (see Tables 4, 5).

With respect to the participation rates of the young in VET, the most considerable changes in the age groups who complete IVET have taken place between age groups 15-19 year olds and 20-24 year olds (see Table 4), where there has been a shift toward emphasis on younger students completing more substantial share of IVET qualifications. According to Education Statistics Finland (Completed vocational qualifications by age group) the numbers were quite even in 2008 (15 591 students were 15-19 year olds vs. 15 603 students were 20-24 year olds). Since then the number of younger completers of IVET studies, aged 15-19 years old, has grown. It was 26 564 already in 2010.

The profiles of IVET (initial vocational qualifications at EQF4 level) and CVET qualifications (at EQF4-5 levels) are in principle different.

Table 4: The number of completed vocational upper secondary qualifications by age groups; years 2005, 2010, 2015, 2017, 2018

	2005		2010		2015		2017		2018	
Aged	N	%	N	%	N	%	N	%	N	%
15–19	13881	24,0	26565	44,9	27954	40,2	25869	35,0	24204	31,2
20–24	15753	27,2	8637	14,6	12156	17,5	11706	15,9	10683	13,8
25–29	6429	11,2	4956	8,4	7158	10,3	8184	11,1	8835	11,4
30–34	4314	7,4	4056	6,9	5778	8,3	7152	9,7	8163	10,5
35–39	4788	8,3	3711	6,3	4914	7,1	6183	8,4	7419	9,6
40–44	4809	8,3	4116	7,0	3948	5,7	5094	6,9	6183	8,0
45–49	4074	7,0	3588	6,1	3753	5,4	4287	5,8	5214	6,7
50–54	2643	4,6	2385	4,0	2574	3,7	3504	4,7	4302	5,5
55–59	1098	1,9	927	1,6	1095	1,6	1569	2,1	2214	2,9
60 older	69	0,1	201	0,3	180	0,3	282	0,4	345	0,4
Unknown	60	0,1	6	0,01	1-4	0	6	0		0
Total	57921	100	59148	100	69513	100	73836	100	77517	100

Table 5: The number of VET qualifications gained via vocational education routes 2005, 2010, 2015, 2017 and 2018

Qualification types	**2005**	**2010**	**2015**	**2017**	**2018**
Upper secondary VET Upper secondary vocational qualification	37 455	37 221	46 710	48 765	47 520
Competence-based qualifications					
Upper secondary vocational qualification (EQF4)	6216	4245	9579	14667	¨
Further vocational qualification (EQF4)	8832	6141	8595	9276	10 224
Specialist vocational qualification (EQF5)	1614	1500	1971	2157	2493
Apprenticeship training	**10 020**	**14286**	**12 234**	**13 638**	**16 827**
Upper secondary vocational qualification (EQF4)	3 168	5922	4713	4347	5535
Further vocational qualification (EQF4)	3 918	4617	4020	4914	6351
Specialist vocational qualification (EQF5)	2 934	3747	3501	4377	4941
In total Upper secondary vocational qualifications Further vocational qualifications Specialist vocational qualifications **Grand total**	 40 623 12 750 4 548 **57,921**	 43 143 10 758 5 247 **59,148**	 51 423 12 615 5 475 **69,513**	 53 112 14 190 6 534 **73,836**	 53 055 16 575 7 884 **77,514**

Note: ¨ information not available. Data adopted from Education Statistics Finland (vipunen.fi). Excluding labour policy education and training.

Chapter 5: Changing institutional arrangements

The initial network of vocational schools was built in Finland in the 1960s (see Chapter 1; Heikkinen, 2001; Laukia, 2013; Stenström & Virolainen, 2018). Around 1950, only 22% of Finnish population lived in towns which had more than 20 000 inhabitants (Heinilä, 1962). In contrast, in 2018, already 72% of the population lived in the urban areas (Helminen, Nurminen & Vesanen, 2020). Despite the level of the long-term urbanisation, it is notable, that the increase in migration towards urban areas has not been particularly strong between 1990 and 2018; it has been around 10% (Helminen, Nurminen & Vesanen, 2020, p. 14). On the side of the urbanisation, the fields of production and demand for education in various fields have changed considerably. In accordance, as a result of urbanisation and changes in the labour market, there has been a need to reorganise the network of educational institutions.

The number of educational institutions has been cut down and the number of students in existing institutions has increased. The number of vocational institutes has reduced from 221 to 82 during 2000-2020 (see Table 6). At the same, time the size of institutes grew, and the number of students studying at vocational institutes increased from 136 400 to 208 700. The shift reflects the increased demand for vocational education in urban areas. The differentiation between vocational institutes and vocational adult education centres has become less important since the latest reform in 2017-2018. Accordingly, the legislative framework and curricula are the same for both youth and adult vocational education. At present, both vocational institutes and adult education centres may provide education for various age groups, even though the traditional division of work between vocational institutes and vocational adult education centres has sustained to some extent (see also Table 5, previous sub-section). The traditional division of work was reflected in the expert interviews conducted for this case study.

Table 6: Numbers of vocational education institutions and numbers of students by type of educational institution in 2000, 2005, 2010, 2013, 2015, 2018 and 2020 (adopted from Statistics Finland, Providers of education and educational institutions)

Year	Type of institution (ownerships included: Private, State, Municipality, Federation of Municipalities, County of Åland)							
	Vocational institutes	Students	Special needs vocational institutes	Students	Specialised vocational institutes	Students	Vocational adult education centres	Students
2000	221	136 400	12	3 900	43	23 700	43	29 800
2005	182	140 700	13	4 300	40	23 300	38	38 700
2010	132	182 800	6	5 300	34	22 900	25	43 100
2013	120	173 200	6	5 000	34	12 900	25	36 500
2015	102	169 700	6	5 300	29	34 200	26	37 000
2018	84	189 100	5	5 000	20	25 500	14	18 100
2020	82	208 700	5	5 600	18	18 100	10	15 000

Note: See Appendix 2 for detailed references.

Chapter 6: Conclusion: Harmonisation, diversification, pluralisation, academic/vocational drift

The aim of this chapter is to summarize and draw tentative conclusions about the main changes that have taken place in the Finnish VET system since 1995. In these conclusions, the focus is on curricula, qualification structure, as well as provision and participation in VET (IVET and CVET) in 1990-2020.

In the curricula of VET, there has been a trend toward enhancing the competence-based approach since the 1990s. In initial vocational education and training the role of workplace learning enhanced during 1995-2020 (see e.g Koramo, 2011; Kärki, 2014; Virtanen, 2013; Kilpeläinen & Vettenniemi, 2018). First, competence-based qualifications were established for adults from the 1990s, and on-the-job learning was adopted in initial VET in the 2000s along with skills demonstrations. Since the reform of 2017-2018 the work-based learning periods for young and adults can be organized in a more flexible way via training agreement or apprenticeship or a combination of them. The trend toward the competence-based approach has been reflected in practice in the national qualification requirements, for example in defining the curricula components as competence areas (see Appendix 1). At the same time there has been a long-term goal to make the common, general studies more related to the vocational content and to design the curricula into components which reflect central occupational entities with respect to the labour market (Kärki, 2014). The role and amount of common (general studies) within the curricula was transformed while initial vocational qualifications were prolonged.

In the 2017-2018 reform of VET, the abolishment of boundaries between youth and adult education has meant revitalizing the role of common studies also for adults who study for initial vocational qualifications. At present, both young and adults' studies follow the same qualification requirements (even considering common studies). According to the experts interviewed for this case study, both the pedagogy and organisation of common studies still deserves further attention in order to meet the interests of various groups of students. For example, younger adults who plan participation in further and higher education in their future seem to be more clearly motivated to common studies. In parallel, adult students from educational fields where employment is possible with partial qualifications may find immediate employment more attractive than setting long-term goals and completing also the common (more generic) studies.

In the Finnish initial vocational qualifications (ammatillinen perustutkinto, EQF4) the structure of qualification requirements (curricula) is rather similar across all fields. At present, the common studies include 35 competence points out of the whole 180 competence points included in each qualification. These common studies are Competencies in communication and interaction, Competencies in mathematics and natural sciences, and Competencies in societal understanding and participation in working life (see Appendix 1). Competence demonstrations (earlier called skills demonstrations) have been adopted as an important form of assessment for all qualifications since the 2000s. At present, it is the teacher and representative from the workplace who typically assess students' competencies together for each component of the qualification unless there is a special reason to organize assessment

in another way. In such cases, the representatives of the provider of education, i.e. teachers will take care of assessment. This is the case more often for common studies. In the 1990s, in contrast, teachers and schools were mostly responsible for students' assessment on their own. Due to this change in student assessment procedures, it has become the duty of the education provider to train workplace supervisors so that they understand how to complete the assessment. However, the accreditation and acknowledgement of prior learning may take place also through assignments and examinations and they are organized and supervised by the educational institute (the education provider). On the whole, the collaboration between education providers and the world of work has increased in the organisation of Finnish VET since the 1990s. The assessment criteria for each module are presented in national qualification requirements and they have become more precise since the 1990s.

The formalization, and alignment of VET provision is reflected in how vocational national qualification requirements are delivered by the National Board of Education and they are available online. Most vocational education institutes are publicly funded, and the Vocational Education and Training Act (531/2017) sets up the common shared legislative framework for organizing vocational education and training. During the period 1995-2020, the VET system has been aligned in particular in the reform of 2017-2018, where the number of qualifications was decreased and legislation for youth and adult vocational education was unified (Laki ammatillisesta koulutuksesta 531/2017 [Vocational Education and Training Act]). Meanwhile, it seems that the academic drift of vocational education has taken place via the expansion of higher vocational education, i.e., the universities of applied sciences and increased number degrees completed via this professionally oriented route of higher education (see Figure 2). Officially, the UAS are part of the higher education system, and not VET, but they offer an important higher education route to VET students. Around 1/3 of the entrants to UAS have initial vocational qualifications. Meanwhile the role of vocational further and specialist education (EQF4-5) has sustained and number of adults completing them has increased, even though the number of provided specialist qualifications was decreased in the latest reform in 2018 (see Table 5).

On the whole, the attractiveness and participation of young in vocational education and training increased from the 1990s and was around 42% of compulsory school leavers in the school year 2015-2016 (see also Stenström & Virolainen, 2016). Recently there has been a slight decrease in these transition rates though, since 2017 (see Figure 1, Statistics Finland, 2020a). Due to the expansion of compulsory education until the age of 18 (or young having completed upper secondary qualification) in the latest reform of upper secondary education taking place as of 2021, it is expected that there will be more emphasis on the regional collaboration between the providers of general upper secondary and vocational education.

The adoption of new technologies following the shift toward Manufacturing 4.0, and demand to respond to climate change and needs of aging population in Western societies have changed skills demands both in the labour market and for citizenship. The changes in the forms of production as a result of transition toward the new industrial era, Manufacturing 4.0 have often been interpreted as polarizing skills demands in the labour market. According to recent study comparing the developments in the labour market, the patterns of transformation follow occupational structure in each country in a more varied way. For example, in the Nordic

countries, the polarization of the labour market enhanced in Denmark, but the demand for higher education graduates increased in Norway (Berglund, Alasoini, Dolvik, Rasmussen, Roed Steen & Varje, 2020). In contrast, in Finland and Sweden, the demand for employees with higher education has increased in the public sector and production of goods, while the demand for qualified employees has been more polarized in the private sector (Berglund, Alasoini, Dolvik, Rasmussen, Roed Steen & Varje, 2020). In Finland, the need for the education system to adapt to changes in the labour market has been met by the provision of higher VET and participation in education both via CVET and universities of applied sciences has increased since the 1990s. In particular, the UAS have become an important route for higher education for those with initial VET qualifications.

In the Finnish education system, the vocational qualifications at various levels (EQF4-EQF5) have distinct profiles. Even though there have been occasions where education providers have made parts of studies for higher level qualifications available through optional studies for the students of initial VET, there has not been a need to repeat the same studies. The further and higher-level vocational qualifications (ammattitutkinto, erikoisammattitutkinto) are for broadening and deepening the understanding about the field in question as well as moving toward more independent and autonomous, supervisory position. They are aimed to broaden the vocational competencies both horizontally and vertically (Guile and Griffiths, 2001). In the latest reform of 2017-2018, the qualification structure was aligned, and number of further and higher-level qualifications was decreased (see Table 2). The alignment of VET provision is also reflected in the network of providers. The institutional landscape for organizing VET has been affected by continuing urbanization and the shift of population toward larger cities and south of Finland. The size of educational institutes has grown, and there are considerably less vocational education institutions than in the 1990s (see Table 6). Government's recent programme and reform of continuous learning underlines regional collaboration between upper secondary and higher education institutes.

The recent reform of continuous learning introduced by the Ministry of Education and Culture (2019; 2020b) emphasizes collaboration between education and working life and the importance of recognising and validating prior learning acquired outside formal education. The programme's theme areas bring up, for example, the need to develop the anticipation of changes in the world of work, guidance counselling, innovative education and training provision and digitalization of education. The programme of continuous education aims at increasing re-skilling, further and specialized education. In particular apprenticeship training and opening of higher education to serve the needs of continuing education are seen important to reach these aims. It seems that by and large, the development of Finnish VET in 1990s-2020s has been in line with many of these goals. In its report on continuous learning in Finland OECD (2020) pointed out many similar viewpoints like the programme of continuous learning; the anticipation of the labour market needs and collaboration between the world of work and educational institutions. In addition, it brought up that the funding mechanisms demand development, as they guide to provide and study whole qualifications while also developing the provision of smaller entities will be needed (OECD, 2020).

References

Ahola, S. (2003). *Yliopistojen opiskelijavalintojen kehittäminen. Selvitysmiehen väliraportti*. Opetusministeriön työryhmämuistioita ja selvityksiä, 29. Opetusministeriö. https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/80603/tr29.pdf?sequence=1[accessed 30.3.2021]

Ahola, S. & Anttila, A. (2013). *Ammatillisen koulutuksen ja tutkintojärjestelmän kehittäminen*. Tilannekatsaus – Maaliskuu 2013. Opetushallitus.

Airila, A., Mattila-Holappa, P., Kurki, A.-L., & Nykänen, M. (2019). Työelämässä oppiminen, ohjaus ja oppilaitosyhteistyö työpaikkojen näkökulmasta. *Ammattikasvatuksen aikakauskirja*, 21(2), 24–41.

Ammatillisen tutkintojärjestelmän kehittämishankkeen (TUTKE) ohjausryhmä [Supervisory committee for the development project of the system of vocational qualifications]. (2009). *Ammatillisen tutkintojärjestelmän kehittämishankkeen loppuraportti* [The final report of the developmental project on vocational qualification structure]. Ministry of Education and Culture.

Anttila, P., Kukkonen, P., Lempinen, P., Nordman-Byskata, C., Pesonen, K., Tuomainen, S., Hietala, R., & Räisänen, A. (2010). *Näyttöä on! Ammattiosaamisen näyttöjen toteutuminen käytännössä*. Koulutuksen arviointineuvosto.

Berglund, T., Alasoini, T., Dølvik, J. E., Rasmussen, S., Røed Steen, J. & Varje, P. (2020). Changes in the occupational structure of Nordic employment:Upgrading or polarization? Nordic future of work project 2017–2020: Working paper 2, 2nd edition. FAFO. https://www.fafo.no/images/pub/2020/Nfow-wp2-2.pdf.pdf [accessed 30.3.2021]

Brunila, K., Kurki, T., Lahelma, E., Lehtonen, J., Mietola, R., & Palmu, T. (2011). Multiple Transitions: Educational Policies and Young People's Post-Compulsory Choices. *Scandinavian Journal of Educational Research*, 55 (3) 307-324. DOI: 10.1080/00313831.2011.576880

Böckerman, P., Hämäläinen, U., & Uusitalo, R. (2009). Labour market effects of the polytechnic education reform: The Finnish experience. *Economics of Education Review,* 28(6), 672-681.

edufutura.fi (n.d.). https://edufutura.fi/edufutura/edufutura-briefly-in-english/ [accessed 30.3.2021]

Ekola, J. (1991). Miten onnistui ammatillisen keskiasteen uudistuksen toimeenpano? [How did the reform of vocational upper secondary education succeed?]. In J. Ekola, P. Vuorinen, & P. Kämäräinen (Eds.), *Ammatillisen koulutuksen uudistaminen 1980-luvulla: Selvitys uudistuksen toteutumisesta ja toteutusympäristöstä* [Vocational education reforms in the 1980s] (Tutkimuksia ja selosteita No. 30, pp. 7–64). VAPK-kustannus.

Guile, D., & Griffiths, T. (2001). Learning through work experience. Journal of education and work, 14(1), 113-131.

Hallituksen esitys laiksi ammatillisesta koulutuksesta ja eräiksi siihen liittyviksi laeiksi, HE 39/2017[Government Proposal for Legislation on VET and some related acts] (2017) https://www.finlex.fi/fi/esitykset/he/2017/20170039

Haapakorpi, A. (2007). *Näytöt oppimisen ohjaajana ja ammatillisen kasvun edistäjänä*. [Skills demonstrations guiding learning and promoting vocational development]. Opetushallitus.

Haltia, P. (2006). Ammattiosaamisen näytöt–mitä ja miksi. *Ammattikasvatuksen aikakauskirja*, *2*(2006), 19-28.

Haltia, N., Isopahkala-Bouret, U. & Jauhiainen, A. (2019). Korkeakoulujen opiskelijavalintauudistus ja aikuisopiskelijan opiskelumahdollisuudet. *Aikuiskasvatus* 39(4), 276-289. https://doi.org/10.33336/aik.88081

Haltia, N., Isopahkala-Bouret, U. & Jauhiainen, A. (2021). The vocational route to higher education in Finland: Students' backgrounds, choices and study experiences. *European Educational Research Journal*. https://doi.org/10.1177/1474904121996265

Heikkinen, A. (2001). Heikkinen, A. (2001). The transforming peripheries of vocational education: reflections from the case of Finland. *Journal of Education and Work*, 14(2), 227-250.

Heikkinen, A. (2004a). Can European policy draw on models of vocational education? In Cedefop report (Ed.), *Towards a history of vocational education and training (VET) in Europe in a comparative perspective* (Cedefop Panorama Series No. 103, pp. 100–121). Office for Official Publications of the European Communities.

Heikkinen, A. (2011). Elatus, oppi ja kumppanuus. In A. Heikkinen & P. Leino-Kaukiainen (Eds.), *Valistus ja koulunpenkki. Kasvatus ja koulutus Suomessa 1860-luvulta 1960-luvulle* (pp.37 -73). Suomalaisen kirjallisuuden seura.

Heinilä, K. (1962). Yhteiskunnan kaupungistuminen [Urbanisation of society*]. Finnish Yearbook of Population Research*, 7, 19-33. https://doi.org/10.23979/fypr.44623 [accessed 30.3.2021]

Helminen, V., Nurmio, K. & Vesanen, S. (2020). Kaupunki-maaseutu-alueluokitus 2018 [Urban-rural classification 2018]. Suomen ympäristökeskuksen raportteja, 21. Helsinki: Suomen ympäristökeskus. https://helda.helsinki.fi/bitstream/handle/10138/315440/SYKEra_21_2020_Kaupunki_maaseutu_2018.pdf?sequence=1&isAllowed=y [accessed 30.3.2021]

Hintsanen, V., Juntunen, K., Kukkonen, A., Lamppu, V.-M., Lempinen, P., Niinistö-Sivuranta, S., Nordlund-Spiby, R., Paloniemi, J., Rode, J.-P., Goman, J., Hietala, R., Pirinen, T. and Seppälä, H. (2016) *Liikettä niveliin: Ammatillisesta koulutuksesta ammattikorkeakouluun johtavien opintopolkujen ja koulutusasteiden yhteistyön toimivuus*. Helsinki, Kansallinen koulutuksen arviointikeskus.

Hyvönen, I. (2018). Ensikertalaiskiintiöt ja ensimmäistä paikkaa hakevien asema korkeakoulujen opiskelijavalinnoissa: havaintoja vuosilta 2015-2018. Vipunen – Opetushallinnon tilastopalvelu. https://tilastoneuvos.vipunen.fi/2018/11/26/ensikertalaiskiintiot-ja-ensimmaista-paikkaa-hakevien-asema-korkeakoulujen-opiskelijavalinnoissa-havaintoja-vuosilta-2015-2018/ [accessed 30.3.2021]

Janhila, J. (1997). *Valovoimaa: Keuruun aikuiskoulutusosaston 20-vuotishistoriikki* (1977-1997). Keuruun aikuiskoulutuskeskus.

Kilpeläinen, P., & Vettenniemi, J. (2018). Ammatillisen koulutuksen tuottaman osaamisen työelämärelevanssi muuttuvassa maailmassa. [The workplace relevance of the competencies produced by the vocational education in the changing world]. *Ammattikasvatuksen aikakauskirja*, 20(5), 66-72.

Kivinen, O., & Peltomäki, M. (1999). On the job or in the classroom? The apprenticeship in Finland from the 17th century to the 1990s. *Journal of education and Work, 12*(1), 75-93.

Korpi, A., Hietala, R., Kiesi, J., & Räkköläinen, M. (2018). Ammatillisen koulutuksen osaamisperusteisuus, asiakaslähtöisyys ja toiminnan tehokkuus – Osaamisperusteisuuden tila. Kansallinen koulutuksen arviontikeskus. https://karvi.fi/app/uploads/2018/01/Osaamisperusteisuuden-tila_KARVI_VNTEAS.pdf

[accessed 25.2.2021]

Koulutuspoliittinen selonteko [Outline for the report on education policy]. (2021). https://www.lausuntopalvelu.fi/FI/Proposal/Participation?proposalId=20b02103-fcef-4d3a-b761-d2e05523a6b1

Kouvolan ammatillinen aikuiskoulutuskeskus. (1996). *Historiikki: 25 vuotta aikuiskoulutusta:* Kouvolan ammatillinen aikuiskoulutuskeskus.

Koramo, M. (2011). Työssäoppiminen ja ammattiosaamisen näytöt ammatillisessa peruskoulutuksessa [On-the-job learning and skills demonstrations in initial vocational qualifications]. Opetushallitus.

Kumpulainen, T. (2009). *Koulutuksen määrälliset indikaattorit 2009*. Opetushallitus. https://www.oph.fi/sites/default/files/documents/kumpulainen-t.-red-kvantitiva-indikatorer-for-utbildningen-2009.-2009.pdf [accessed 30.3.2021]

Kärki, S. (2014). *Lähtökohdat, kansallinen tahtotila ja osaamisperusteisuuden tuomat muutokset* [Starting points, national goals and changes brougth by the competence based approach]. In 'Osaamisperusteisuus todeksi - askelmerkkejä koulutuksen järjestäjille'. Helsinki: National Board of Education, pp.6-8. Retrieved from: https://www.oph.fi/sites/default/files/documents/170260_osaamisperusteisuus_todeksi_askelmerkkeja_koulutuksen_jarjestajille_2015.pdf [accessed 30.3.2021]

Lahelma, E. (2009). Dichotomized metaphories and young people's educational routes. *European Educational Research Journal*, 8(4): 497–507. (doi:10.2304/eerj.2009.8.4.497)

Lahtinen, M., Lankinen, T. & Sulonen, A. (2006). *Koulutuksen lainsäädäntö käytännössä*. [The legislation of education in practice]. Tietosanoma.

Lappalainen, S., Mietola, R. & Lahelma, E. (2013). Gendered divisions on classed routes to vocational education, *Gender and Education*, 25 (2), 189-205. DOI: 10.1080/09540253.2012.740445

Laukia, J. (2013). Education of skilled workers and citizens–vocational education in Finland. In K. Aaltonen, A. Isacsson, J. Laukia, & L. Vanhanen-Nuutinen (Eds.), *Practical skills, education and development–vocational education and training in Finland* (pp. 9–19). Haaga-Helia University of Applied Sciences.

Lietzén, O., & Silvennoinen, H. (2020). Jatkokoulutussuunnitelmien ja perheen kannustuksen merkitys yhdistelmätutkinnon valinnassa. *Kasvatus 51,*(3), 286-301.

Ministry of Education and Culture (n.d). Uusi ammatillinen koulutus 1.1.2018 alkaen [New vocational education from 1.1.2018. [Brochure on the reform]. https://minedu.fi/amisreformi. [accessed 30.3.2021]

Ministry of Education and Culture (Finland). (2002) *Tutkintotoimikuntatyöryhmä* [Working group for qualification committee]. Tutkintotoimikuntatyöryhmän muistio. Ministry of Education and Culture. https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/80824/opmtr31.pdf?sequence=1&isAllowed=y [accessed 30.3.2021]

Ministry of Education and Culture, Finland (2010). Ammatillisen tutkintojärjestelmän kehittämishankkeen loppuraportti [The final report of the project developing the vocational education system]. Opetus- ja kulttuuriministeriön työryhmämuistioita ja selvityksiä,15. Helsinki. https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/75544/okmtr15.pdf [accessed 30.3.2021]

Ministry of Educaion and Culture, Finland (2019). *Jatkuvan oppimisen*

kehittäminen.Työryhmän väliraportti [Developing continuous learning. Interim report of the working group]. ublications of the Ministry of Education and Culture. http://urn.fi/URN:ISBN:978-952-263-641-6 [accessed 30.3.2021]

Ministry of Education and Culture, Finland. (2020). *Ammatillisen koulutuksen reformi* [The reform of vocational education and training].https://minedu.fi/amisreformi [accessed 30.3.2021]

Ministry of Education and Culture, Finland. (2020b). *Jatkuva oppiminen* [Reforming continuous learning]. https://minedu.fi/en/continuous-learning-reform [accessed 30.3.2021]

Ministry of Education and Culture, (Finland). (2021a*). Ammatillisen koulutuksen tutkintojärjestelmä.* [The qualification structure of vocational qualifications]. https://minedu.fi/tutkintojarjestelma [accessed 30.3.2021]

Ministry of Education and Culture (Finland). (2021b). Ammatillisesta koulutuksesta annetun lain 531/2017 ja asetuksen siirtymäsäännökset. https://minedu.fi/documents/1410845/4297550/siirtymasaannokset16102017.pdf/52052d7e-f43c-490d-b6c0-b8eee2769a33/siirtymasaannokset16102017.pdf [accessed 30.3.2021]

National Board of Education. (2004). *Competence-based qualifications*: 1st January 2004. Helsinki.National Board of Education.

National Board of Education (Finland) (2021). *Tutkintotyypit ja tutkintojen laajuus*. [They types of qualification and their extent]. https://www.oph.fi/fi/koulutus-ja-tutkinnot/tutkintorakenne [accessed 30.3.2021]

Nokelainen, P., & Rintala, H. (2017). Ajankohtaista ammattikasvatuksessa. *Ammattikasvatuksen aikakauskirja*, 19(1), 4–8.

Nokelainen, P. (2019). Kohti itseohjautuvaa oppimista ammatillisessa koulutuksessa. *Ammattikasvatuksen aikakauskirja*, 21(1), 4–13.

Numminen, U. (1997). Nuorisoasteen koulutuskokeilu ja oppilaitosten alueellinen verkostoituminen [Youth education experiments and regional networks of educational instiutions]. In R. Mäkinen, M. Virolainen & P. Vuorinen (Eds.) *Oppilaitosten yhteistyö ja yksilölliset opinnot nuorisoasteen koulutuskokeilussa* [Collaboration of educational institutions and individual studies in the youth education experiments]. Finnish Institute for Educational Research, University of Jyväskylä.

Numminen, U. (2000). Strategies for improving vocational education: The Finnish case. In M.-L. Stenström & L. Lasonen (Eds*.), Strategies for reforming initial vocational education and training in Europe* (pp. 74–91). Jyväskylä, Finland: University of Jyväskylä, Institute for Educational Research.

Nylund, M. & Virolainen, M. (2019). Balancing ‘flexibility’ and ‘employability’: The changing role of general studies in the Finnish and Swedish VET curricula of the 1990s and 2010s. *European Educational Research Journal*, 18(3), 314–334.

OECD. (2020). Continuous Learning in Working Life in Finland. Getting Skills Right. OECD Publishing, Paris. https://doi.org/10.1787/2ffcffe6-en [accessed 30.3.2021]

Official Statistics Finland (2020a). Entrance to education [e-publication].ISSN=1799-4527. 2019, Appendix table 1. Direct transition to further studies of completers of the 9th grade of comprehensive school 2000 - 2019 . Helsinki: Statistics Finland [referred: 8.4.2021]. http://www.stat.fi/til/khak/2019/khak_2019_2020-12-10_tau_001_en.html [accessed 30.3.2021]

Official Statistics of Finland (2020b): Students and qualifications [e-publication].ISSN=2737-0410. 2020, Appendix table 1. Students in universities of applied sciences and completed university of applied sciences degrees 1995 to 2020. Helsinki: Statistics Finland]. http://www.stat.fi/til/opiskt/2020/opiskt_2020_2021-04-19_tau_001_en.html [accessed 20.4.2021]

Official Statistics of Finland (OSF) (2021). Vocational education. Concepts and definitions [e-publication].ISSN=1799-1986. Helsinki: Statistics Finland http://www.stat.fi/til/aop/kas_en.html[accessed 23.2.2021]:

Opetushallitus.[National Board of Education] (1995a). *Sosiaali- ja terveysalan opetussuunnitelman perusteet toisella asteella*. [The national core curriculum in the field of social and health care]. Opetushallitus.

Opetushallitus.[National Board of Education]. (1995b).*Sähköalan opetussuunnitelman perusteet toisella asteella*. [The national core curriculum in the field of electrical engineering]. Opetushallitus.

Opetushallitus.[Finnish National Board of Education] (2012). Todistusmallit 2012. Ammatilliset perustutkinnot ja valmistavat koulutukset. Ohje 4/012/2012. Määräykset ja ohjeet, 2012: 28. [he model certificates 2012. Vocational upper secondary education and preparatory programmes. Order 4/012/2012. Instructions and orders, 2012: 28.]. Opetushallitus. https://www.oph.fi/fi/tilastot-ja-julkaisut/julkaisut/ammatillisten-perustutkintojen-perusteiden-toimeenpano [accessed 30.3.2021]

Opetushallitus [National Board of Education] (2015). *Ammatillisten perustutkintojen perusteiden toimeenpano ammatillisessa peruskoulutuksessa*. Oppaat ja käsikirjat, 10. Opetushallitus.

opintopolku.fi (n.d.). Useampi tutkinto lisäopinnoilla: kaksoistutkinto. https://opintopolku.fi/wp/ammatillinen-koulutus/useampi-tutkinto-samanaikaisesti/

Potila, A.-K., Moisio, J., Ahti- Miettinen, O., Pyy-Martikainen, M., Virtanen, V. (2017). Opiskelijatutkimus 2017. *Eurostudent VI –tutkimuksen keskeiset tulokset. Opetus- ja kulttuuriministeriön julkaisuja, 37*. Opetus- ja kulttuuriministeriö. https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/80534/okm37.pdf?sequence=3&isAllowed=y [accessed 30.3.2021]

Purola, M.(1996). *Ilo oppia isonakin!: Turun ammattikoulutussäätiö 25 vuotta*, *Turun ammatillinen aikuiskoulutuskeskus 20 vuotta*. Turun ammatillinen aikuiskoulutuskeskus.

Rantanen, T., & Toikko, T. (2012). The three phases of the research and development activities in the Finnish universities of applied sciences. In S. Ahola & D. M. Hoffman (Eds.), *Higher education research in Finland* (pp. 383-405). University of Jyväskylä. https://jyx.jyu.fi/bitstream/handle/123456789/42356/978-951-39-5189-4.pdf?sequence=1 [accessed 30.3.2021]

Rinne, R. (2013). Kohti meritokratiaa – suomalaisen koulutuksen ekspansio [Toward meritocracy – Finnish educational expansion]. In A. Antikainen, R. Rinne, & L. Koski (Eds.), *Kasvatussosiologia* [Sociology of education] (5th Rev. ed., pp. 49–99). PS-kustannus.

Rintala, H., & Nokelainen, P. (2020). Standing and attractiveness of vocational education and training in Finland: focus on learning environments. *Journal of Vocational Education & Training*,72 (2), 250-269.

Rintala, H., Jussila,J., & Nokelainen,P. (2018). The reform of vocational education and training in Finland: Insights from Twitter. In C. Nägele &B. E. Stalder (Eds.), Trends in vocational educationand training research.Proceedings ofthe European Conference

on Educational Re-search (ECER), Vocational Education and Training Network (VETNET)(pp. 312–321).https://doi.org/10.5281/zenodo.1319706 [accessed 30.3.2021]

Ropponen, M. (2015). Näyttötutkintojärjestelmän historiasta [The History of Competence Based Qualifications System]. In 'Näyttötutkintojärjestelmä 20 vuotta. Historia ja vaikuttavuus' (pp. 7-73). Opetushallitus.

Räisänen, A. & Goman, J. (2018). *Ammatillisen koulutuksen osaamisperusteisuus, asiakaslähtöisyys ja toiminnan tehokkuus - Politiikkatoimien vaikutusten arviointi (ex ante).* Kansallinen koulutuksen arviointikeskus. https://karvi.fi/app/uploads/2018/01/Os-perusteisuus_politiikkatoimien-arviointi_KARVI_VNTEAS.pdf [accessed 30.3.2021]

Räisänen, A., & Räkköläinen, M. (2014). Assessment of learning outcomes in Finnish vocational education and training. *Assessment in Education: Principles, Policy & Practice*, 21(1), 109-124.

Räkköläinen, M. (2011). *Miltä näytöt näyttävät? Luotettavuus ja luottamus ammatillisten perustutkintojen näyttöperusteisessa arvioinnissa*. [What do skills demonstrations show? Reliability and confidence in the assessment of learning outcomes]. University of Tampere, dissertation. https://trepo.tuni.fi/bitstream/handle/10024/66799/978-951-44-8518-3.pdf?sequence=1&isAllowed=y [accessed 30.3.2021]

Salminen, H. (1999). Ammattikorkeakoulu-uudistuksen ja keskiasteen tutkinnonuudistuksen yhteneväisyyksiä ja eroja [The AMK reform and the reform of upper secondary education qualifications in Finland: Parallels and differences]. *Kasvatus*, 30(5), 472–490.

Seinäjoen koulutuskuntayhtymä, Koulutuskeskus SEDU. (2016). *Opetussuunnitelma 2016*. Sosiaali- ja terveysalan perustutkinto, lähihoitaja. [Curriculum 2016, the Upper Secondary Vocational Qualification in Social and Health CARE, practical nurse. SEDU. https://www.sedu.fi/loader.aspx?id=b4a9e02a-22bc-4d87-b77f-9e338690dfc0 [accessed 30.3.2021]

Stenström, M.- L. (1997). *Opetussuunnitelmauudistuksen seuranta: Toisen asteen ammatillinen koulutus* [Follow-up study on curriculum reform]. Helsinki, Finland: National Board of Education.

Stenström, M.-L. & Laine, K. (2006). *Towards good practices for practice-oriented assessment in European vocational education*. Finnish Institute for Educational Research, University of Jyväskylä. https://jyx.jyu.fi/bitstream/handle/123456789/37761/G030.pdf;sequence=1[accessed 30.3.2021]

Stenström, M.-L., & Virolainen, M. (2014a). *The History of Finnish Vocational Education and Training*. Nord-VET - The future of Vocational Education in the Nordic countries. http://nord-vet.dk/indhold/uploads/report1a_fi.pdf [accessed 30.3.2021]

Stenström, M.-L., & Virolainen, M. (2014b). *The Current State and Challenges of Vocational Education and Training in Finland*: The Finnish Country report 1B. Nord-VET - The future of Vocational Education in the Nordic countries. Country reports. Retrieved from hhttp://nord-vet.dk/indhold/uploads/report1b_fi.pdf [accessed 30.3.2021]

Stenström, M.-L., & Virolainen, M. (2016). Towards the Enhancement of School-Based VET in Finland. In E. Berner, & P. Gonon (Eds.), *History of Vocational Education and Training in Europe : Cases, Concepts and Challenges* (pp. 327-348). Peter Lang.

Stenström, M.-L. & Virolainen M. (2018). The modern evolution of vocational education and training in Finland (1945–2015). In S. Michelsen & M-L. Stenström. (Eds.) *Vocational Education in the Nordic Countries - The Historical Evolution* (pp. 102–123). Routledge.

Tapani, A., Raudasoja, A., & Nokelainen, P. (2019) Ammatillisen koulutuksen uudistus: uhka

ja mahdollisuus. *Ammattikasvatuksen aikakauskirja*, 21(2), 4–8.

Valtioneuvoston asetus ammatillisesta koulutuksesta 5.10.2017/673 [Vocational education and training decree]

Varmola, T. (1994). *Aikuiskoulutuksen muutoksen hallinta: esimerkkinä Vaasan ammatillinen aikuiskoulutuskeskus*. Tampereen yliopisto, Tampereen yliopiston täydennyskoulutuskeskus.

Vehviläinen, J. (2004). *Ammattiosaamisen näytöt – kokemuksia, asenteita ja ennakko-odotuksia*. [Vocational skills demonstrations – experiences, attitudes and expectations]. Opetushallitus.

Viinamäki, L. & Selkälä, A. (eds.) (2015). *20 vuotta suomalaista näyttötutkintojärjestelmää* [20 yeard of the competence based qualifications system]. In ‚Näyttötutkintojärjestelmä 20 vuotta. Historia ja vaikuttavuus' (pp. 81-370). Opetushallitus.

Virolainen, M. (2000). Peräkkäin, rinnakkain vai yhdistellen - mikä on kaksoistutkintojen anti?. In M. V. Volanen (Ed.), *Kokeiluista reformeiksi. Tuloksia ja johtopäätöksiä nuorisoasteen koulutuskokeiluista ja ammattikorkeakoulureformista* (pp. 66-74). Jyväskylä, Finland: Koulutuksen tutkimuslaitos, Jyväskylän yliopisto.

Virolainen, M. (2001). Opettajat ja rehtorit oppilaitosten yhteistyön rakentajana. *Ammattikasvatuksen aikakauskirja*, 3 (2), 32-38.

Virolainen, M. (2018). Changing patterns of transition to VET and from VET to higher education: the on-going Finnish VET reform. In L. M. Herrera, M. Teräs, & P. Gougoulakis (Eds.), *Emergent issues in vocational education and training : Voices from cross-national research* (pp. 578-606). Premiss.

Virolainen, M. (2018). Changing patterns of transition to VET and from VET to higher education: the on-going Finnish VET reform. In L. M. Herrera, M. Teräs, & P. Gougoulakis (Eds.), *Emergent issues in vocational education and training: Voices from cross-national research* (pp. 578-606). Stockholm: Premiss. https://www.edu.su.se/polopoly_fs/1.465451.1575029857!/menu/standard/file/Emergent%20Vol%201-Content.pdf [accessed 30.3.2021]

Virolainen, M. & Hagen Tønder, A. (2018). Progression to higher education from vocational education in Nordic countries: Mixed policies and pathways. In C. H. Jørgensen, O. J. Olsen & D. P. Thunqvist (Eds.) *Vocational Education in the Nordic Countries - Learning from Diversity* (pp. 51–73). Routledge.

Virolainen, M. & Persson Thunqvist. D. (2017). Varieties of universalism: post-1990s developments in the initial school-based model of VET in Finland and Sweden and implications for transitions to the world of work and higher education. *Journal of Vocational Education and Training,* 86(1), 47–63.

Virolainen, M., & Stenström, M.-L. (2015). *Recent Finnish VET Reforms and Innovations: Tackling the Current Challenges.* Nord-VET – The future of Vocational Education in the Nordic countries. http://nord-vet.dk/indhold/uploads/report1c_fin.pdf [accessed 30.3.2021]

Virtanen, A. (2013*). Opiskelijoiden oppiminen ammatillisen peruskoulutuksen työssäoppimisen järjestelmässä*. Jyväskylä studies in education, psychology and social research, (473). Dissertation. University of Jyväskylä.

Väärälä, R. (1995). *Ammattikoulutus ja kvalifikaatiot* [Vocational education and qualifications] (Acta Universitatis Lapponiensis No. 9). Rovaniemi, Finland: University of Lappland.

Laws and decrees.

Ammattitutkintolaki [Vocational Qualifications Act] 306/1994

Ammattikorkeakoululaki [Universities of Applied Sciences Act] 14.11.2014/932

Laki ammatillisesta koulutuksesta [Vocational Education and Training Act] 630/1998

Laki ammatillisesta aikuiskoulutuksesta [Adults' Vocational Education and Training Act] 631/1998

Laki ammatillisesta koulutuksesta [Vocational Education and Training Act (531/2017] 531/2017

Laki ammatillisesta koulutuksesta annetun lain muuttamisesta [Act to change Act on Vocational Education and Training] 601/2005

Laki nuorisoasteen koulutuksen ja ammattikorkeakoulujen kokeiluista annetun lain kumoamisesta annetun lain 3 §:n muuttamisesta 519/2000 [Change on Youth Education experiments' and Pilots of Universities of Applied Sciences' cancelling Act 519/2000]

Laki oppisopimuskoulutuksesta [Apprenticeship training Act]1605/1992,

Opetusministeriön asetus ammatillisista perustutkinnoista [Initial Vocational Qualifications Decree by the Ministry of Education] 1.3.2001/216

Valtioneuvoston asetus ammatillisesta koulutuksesta [Vocational Education and Training Decree] 5.10.2017/673

Valtioneuvoston asetus ammatillisesta koulutuksesta annetun asetuksen muuttamisesta [Change of Previous Decree on Vocational Education and Training Decree] 603/2005

Valtioneuvoston asetus ammatillisesta koulutuksesta annetun asetuksen muuttamisesta [Change of Previous Decree on Vocational Education and Training] 799/2014).

Valtioneuvoston asetus tutkintojen rakenteesta ja yhteisistä opinnoista ammatillisessa peruskoulutuksessa annetun valtioneuvoston päätöksen 2 §:n muuttamisesta [Change in Qualification Structure and Common Studies in Initial Vocational Qualifications Decree] 616/2001 (defines the subject and extent of common, generic studies in vocational upper secondary education)

Valtioneuvoston päätös tutkintojen rakenteesta ja yhteisistä opinnoista ammatillisissa perustutkinnoissa [Qualification Structure and Common Studies in Initial Vocational Qualifications] 213/1999

Yliopistolaki [Universities Act] 24.7.2009/558

Appendices

1.1.1. Appendix 1

NATIONAL QUALIFICATION REQUIREMENTS FOR PRACTICAL NURSES IN 2010 AND 2018

Practical nurses are educated within the programme:

Vocational Qualification in Social and Health Care

National qualification requirements for practical nurses 1.8.2010[1](National Board of Education, 2010)

Extent of the whole qualification is 120 study credits (scs). The qualification can be completed through school-based education or competence based education. The qualification is divided into three groups of subjects A-C:

A. Vocational components (90scs)

1. General curriculum components (common for all students):
- Support and guidance for growth (15scs)
- Care and treatment (20scs)
- Rehabilitation (15scs)

2. One obligatory study programme to be chosen among 9 options (30scs):
(Customer service and data administration; Emergency care; Rehabilitation; Child and youth education and care; Mental health care; Nursing and care; Dental care; Work with the disabled, Geriatric care)

3. Optional study component (10scs)
which can be chosen from obligatory study programmes provided for vocational qualification in social and health care, other initial vocational qualifications, vocational qualifications, further vocational qualifications, specialist vocational qualifications, studies in the universities of applied sciences, or regional study components provided as a part of vocational qualification. Students can also choose the component among other optional parts, which are Entrepreneurship (10 scs), Preparation for workplace guide (2scs), Components which deepen and expand vocational skills (5-10scs), Components which complete vocational skills (general curriculum components)(0-10scs), or studies in general upper secondary schools.
Student can choose to expand vocational qualification with some deepening components individually.

B. General components which complement vocational skills (general studies) (20scs)

Obligatory studies (16scs) and optional studies (4scs):
mother tongue; second domestic language; foreign language; mathematics; physics and chemistry; societal, entrepreneurial and working life knowledge; physical education; health education; arts and culture; environmental studies; communication and information technology; ethics; cultural understanding; psychology, intercultural education and entrepreneurship.

C. Optional study components (10 scs)

The competence based qualifications' requirements are the same and consist of the Vocational components described in part A. above. The qualification requirements and assessment criteria are the same both for the initial vocational qualifications and the competence based qualifications. The goals for assessment are described as work processes, methods and knowledge of tools and materials, and command of vocational knowledge. The key skills for lifelong learning are embedded in the vocational components' (A.) and their assessment criteria as well as in the complementary components (B.) and they will be assessed in their context. The key skills for lifelong learning include: learning and problem solving; interaction and collaboration; vocational ethics; health; security and functionality; initiativiness and entrepreneurship; sustainable development, esthetics; technology and information technology; active citizenship and various cultures. Each initial vocational qualification will include at least 5 study credits of entrepreneurial competencies and entrepreneurial readiness. Competencies for each component of the vocational qualification will be assessed in skills demonstrations (IVET) or in organized competence based examinations (CVET). In principle the demonstrations and examinations will be

organized in authentic work live situations. In the cases that it is not possible to present skills in demonstrations or examinations, it is possible to complement the assessment by other means.

[1] Adopted from: Hakala, R., Tahvanainen, S., Ikonen, T. & Siro, A. (2011). Osaava lähihoitaja 2020. Sosiaali- ja terveysalan perustutkintokoulutuksen kehittämisstrategia. Raportit ja selvitykset, 16 Opetushallitus. [Competent basic nurse in 2020. The strategy for developing initial vocational qualification in social and health care. Reports and studies, 16. National Board of Education.] 1(National Board of Education, 2010)

Vocational Qualification in Social and Health Care
Qualification requirements entered into force on 01.08.2018
(adopted from the certificate supplement: https://eperusteet.opintopolku.fi/eperusteet-service/api/dokumentit/6598137)

Composition of the qualification
The Vocational Qualification in Social and Health Care is composed of vocational units (145 competence points) and common units (35 competence points). The scope of a vocational qualification is 180 competence points.
The Vocational Qualification in Social and Health Care comprises eight competence areas:
• competence area of care and rehabilitation for elderly people, practical nurse
• competence area of podiatric care, practical nurse
• competence area of children's and youth education and care, practical nurse
• competence area of mental health and substance abuse work, practical nurse
• competence area of nursing and care, practical nurse
• competence area of oral health care, practical nurse
• competence area of care for the disabled, practical nurse
• competence area of basic life support (BLS), emergency practical nurse (BLS).
The competence areas include four compulsory units, of which the first two compulsory units, Promotion of growth and social inclusion and Promotion of wellbeing and functional capacity, are included in all but the Competence area in basic life support, in which the compulsory units are Promotion of health, safety and wellbeing and Maintenance and promotion of functional capacity. The first two of the above-mentioned compulsory units must be passed acceptably in a demonstration of knowledge and skills before the demonstrations of the other two compulsory units included in the competence area.
The common units are: Communication and interaction skills, Competence in mathematics and natural sciences, and Society and working life skills
The scope of the optional studies students must include in their qualification is 15 competence points.
Vocational skills and competences required for completion of the qualification
Holders of the vocational qualification in social and health care have wide-ranging basic capabilities for the different tasks in their occupational field and more specialised competence and the vocational skills required in the world of work in at least one competence area in working life activities. Practical nurses or emergency nurses (BLS) who have completed a vocational upper secondary qualification are able to carry out their work following the regulations, operating practices,values ,and occupational ethics of their field. They are able to work in professional interaction and in multiprofessional and multicultural operating environments. They know how to plan, implement, and assess nursing and care that promotes the client's or patient's health, wellbeing, functional capacity, growth, and social inclusion in different social and health care or educational operating environments. They are able to provide customer-oriented guidance on how to use the services, are able to use wellbeing technologies diversely, and develop their professional competence according to the principles of lifelong learning. They are able to take care of patient and client safety, work aseptically and ergonomically, and take care of their occupational safety and wellbeing at work. In the competence area in children's and youth education and care, they know how to promote the child's growth, wellbeing, and learning in early childhood education and care and are able to promote the child's, the adolescent's, and the family's health and wellbeing. In the competence area in mental health and substance abuse work, they are able to do mental health and substance abuse work and work with the clients and networks in that field. In the competence area in care and rehabilitation of the elderly, they are able to work in home care in a manner that enhances the client's functional capacity and promotes the social inclusion of the elderly. In the competence area in nursing and care, they know how to promote the client's health and are able to work in home care and nursing.

In the competence area in care for the disabled, they know how to enhance the social inclusion of individuals with disabilities and to maintain and enhance their functional capacity. In the competence area in podiatric care, they know how to promote the foot health of their clients and are able to work in podiatric care. In the competence area in oral and dental care, they are able to work in oral and dental health care and know how to promote oral and dental health. In the competence area in basic life support, they are able to enhance health, safety, wellbeing and the functional capacity and are able to work in emergency and acute care.
The optional units provide practical nurses or emergency nurses (BLS) with competence required for profiling themselves in the different sectors of activities in social and health care. These sectors include the use of wellbeing technology in the maintenance of functional capacity, terminal care, taking samples, supporting living at home and life management, mental health and substance abuse work for different client groups, patient immobilisation, perioperative care, acting in situations with multiple patients and in disasters, terminal care, use of functional methods, enhancing children and adolescents' mental health skills, oral and dental care, and podiatric care.

The common units (35 competence points). (26 cps obligatory studies, 9cps optional studies)
**Competencies in communication and interaction* (11 competence points):
Communication and interaction in mother tongue (4 competence points, obligatory; 3 competence points optional)
Communication and interaction in second domestic language (1 competence point, obligatory;3 competence points optional)
Communication and interaction in foreign language (3 competence points, obligatory; 3 competence points optional)
Action in digital environment (2 competence points obligatory; 3 competence points optional)
Arts and creative expression (1 competence point obligatory; 3 competence points optional)

**Competencies in mathematics and natural sciences* (6 competence points):
Mathematics and application of mathematics (4 competence points obligatory; 3 competence points optional)
Physical and chemical phenomena and their applications (2 competence points obligatory; 3 competence points optional)

**Competencies in societal understanding and participation in working life* (9 competence points):
Acting in society and as a citizen (2 competence points obligatory; 3 competence points optional)
Acting in the world of work (2 competence points obligatory; 3 competence points optional)
Competencies in planning studies and career management (1 competence point obligatory)
Entrepreneurship and entrepreneurial action (1 competence point obligatory)
Maintenance of work ability and wellbeing (2 competence points obligatory; 3 competence points optional)
Promotion of sustainable development (1 competence point obligatory;3 competence points optional;)

In addition to these common general subjects (across qualifications), there are optional vocational subjects (based on national requirements) which are offered as part of initial vocational qualifications. They are:

-vocational excellence activities (15cps)
-climate responsible action (15cps)
-training in workplace guidance (15cps)
-acting in entreprise ‘yrityksessä toimiminen’(15cps)
-planning entrepreneurial activities(15cps)
-component based on regional vocational skills needs(5-15cps)
- from other vocational qualification, further vocational qualification or specialist vocational qualification(5-15cps)
-higher education studies (5-15cps)
- parts from general education components in the requirements, studies from general upper secondary education or other studies supporting development of competencies for further and higher education (1-25cps)

For common general studies and vocationally oriented optional studies see also: https://www.oph.fi/fi/koulutus-ja-tutkinnot/tutkintojen-perusteet#

1.1.2. Appendix 2.

Year by year references for the Table 6.

Statistics Finland, Providers of education and educational institutions

Year 2000: Tilastokeskus[Official Statistics Finland (OSF)]: Koulutuksen järjestäjät ja oppilaitokset 2000.[Providers of education and educational institutions [e-publication].] Access method: https://www.stat.fi/ajk/tiedotteet/v2001/073kous.html

Year 2005: Suomen virallinen tilasto [Official Statistics Finland (OSF)] (SVT): Koulutuksen järjestäjät ja oppilaitokset [verkkojulkaisu]. ISSN=1796-3796. 2005. Helsinki: Tilastokeskus [viitattu: 6.4.2021].Access method: http://www.stat.fi/til/kjarj/2005/kjarj_2005_2006-02-24_tie_001.html

Year 2010: Official Statistics of Finland (OSF): Providers of education and educational institutions [e-publication].ISSN=1799-5825. 2010. Helsinki: Statistics Finland [referred: 6.4.2021].Access method: http://www.stat.fi/til/kjarj/2010/kjarj_2010_2011-02-17_tie_001_en.html

Year 2013: Official Statistics of Finland (OSF): Providers of education and educational institutions [e-publication].ISSN=1799-5825. 2013. Helsinki: Statistics Finland [referred: 6.4.2021].Access method: http://www.stat.fi/til/kjarj/2013/kjarj_2013_2014-02-13_tie_001_en.html

Year 2015: Official Statistics of Finland (OSF): Providers of education and educational institutions [e-publication].ISSN=1799-5825. 2015. Helsinki: Statistics Finland [referred: 6.4.2021].Access method: http://www.stat.fi/til/kjarj/2015/kjarj_2015_2016-02-11_tie_001_en.html

Year 2018: Official Statistics of Finland (OSF): Providers of education and educational institutions [e-publication].ISSN=1799-5825. 2018. Helsinki: Statistics Finland [referred: 6.4.2021].Access method: http://www.stat.fi/til/kjarj/2018/kjarj_2018_2019-02-12_tie_001_en.html

Year 2020: Official Statistics of Finland (OSF): Providers of education and educational institutions [e-publication].ISSN=1799-5825. 2020. Helsinki: Statistics Finland [referred: 6.4.2021]. Access method: http://www.stat.fi/til/kjarj/2020/kjarj_2020_2021-02-18_tie_001_en.html

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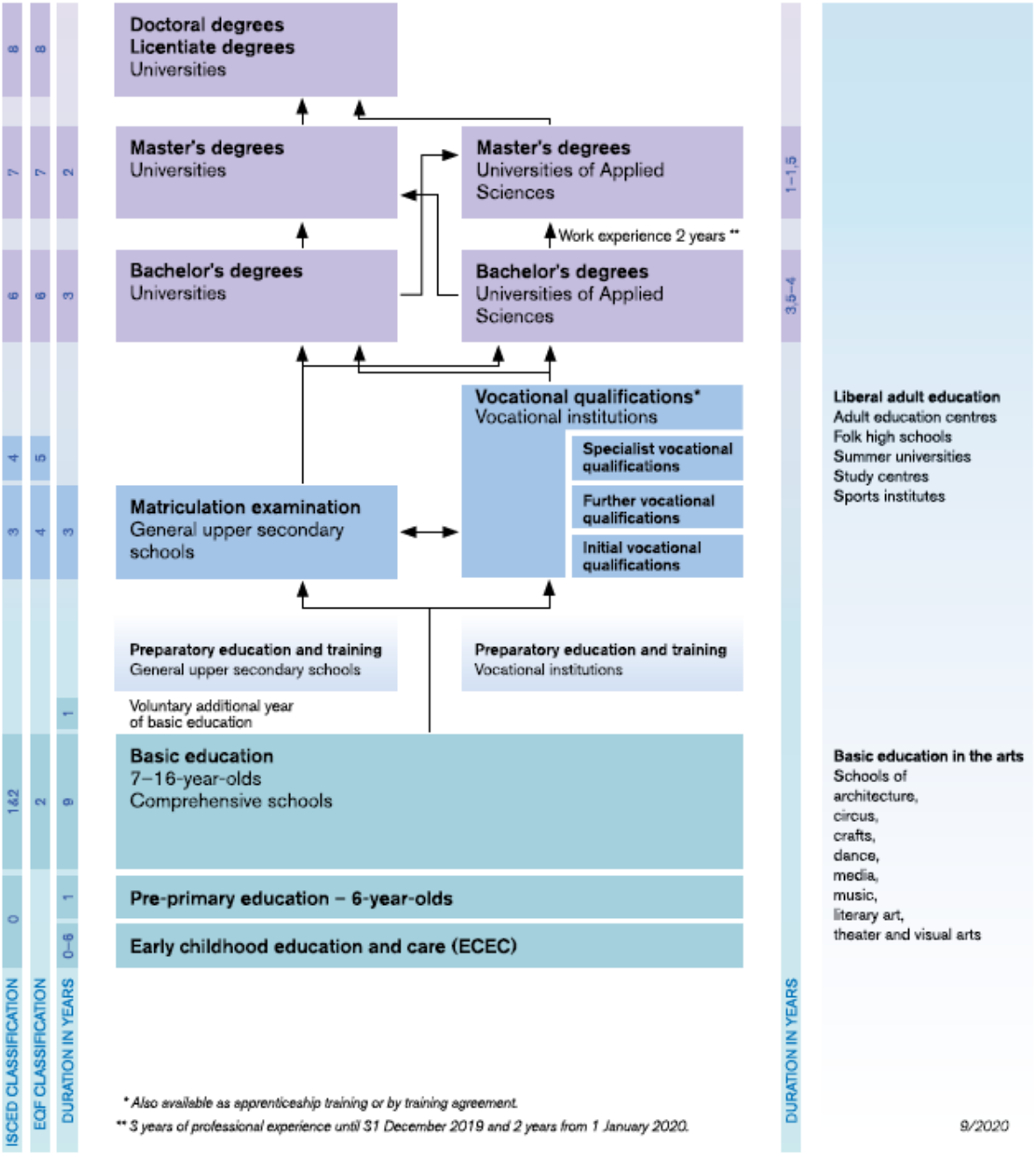

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