

Case study Finland

The future of vocational education and training in Europe Volume 4

Delivering lifelong learning: the changing relationship between IVET and CVET

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Part 1: Introduction: IVET and the learning of adults

In the following section the national reforms which have influenced the involvement of IVET providers in the learning of adults are discussed.

In the 1990s, the roles of IVET providers and CVET providers were rather separated in Finland. They had different regulations. For example, in the late 1990s, there were two separate Acts to direct the initial and further education. The Vocational Education Act (Laki ammatillisesta koulutuksesta 630/1998) stipulated initial vocational education and training provided for young and adults. The Adult Education Act (Laki ammatillisesta aikuiskoulutuksesta 631/1998) stipulated competence based education. It was directed to recognition of competences achieved regardless of the learning place, i.e. initial vocational qualifications, further vocational qualifications and specialist vocational qualifications, as well as education preparing students for competence based assessment. At the same time, the *initial* vocational education aimed at adults was to follow the Vocational Education Act (Laki ammatillisesta koulutuksesta 630/1998). Each sector of VET had differentiated Acts and Decrees to guide their work. Since the 1990s, the major reforms, where the relations of IVET and CVET have been redefined and realigned in Finland, include the following:

- a) The establishment of the competence based qualifications system for adults in 1994 (Finnish National Agency for Education, 2000; Ministry of Education and Culture: Working group for qualification committee, 2002; Lahtinen, Lankinen & Sulonen, 2006; Virolainen & Stenström, 2015; Stenström & Virolainen, 2018). The length and forms of preparatory education for these qualifications was not stipulated formally by Acts or Decrees. Providers of education could decide about the preparatory education and provide it, based on the national qualification requirements (Finnish National Agency for Education 2004; Ministry of Education and Culture, Finland 2020). The separate Act governing apprenticeship training was already abolished, and the decrees governing it were embedded in the Acts stipulating youth and adult vocational education and training in 1998 (Kivinen & Peltomäki, 1999; Lahtinen, Lankinen & Suhonen, 2006).
- b) The alignment of youth and adults' national qualification requirements as of 2008–9 (Ammatillisen tutkintojärjestelmän kehittämishankkeen (TUTKE) ohjausryhmä, 2010). This shift emphasised the role of utilizing assessment criteria also for the vocational skills demonstrations in youth education. (Haltia 2006; Stenström, Laine & Kurvonen, 2006). The vocational skills demonstrations were adopted as part of youth education. The organisation took benefit from the experience gained through competence based qualification system for adults established in the 1990s (Räkköläinen, 2011; Virtanen, 2013; Räisänen & Räkköläinen, 2014).
- c) The reform of 2015–18, where the legislation for youth and adult vocational education was unified and overall regulation decreased, to enable flexibility and individual study plans and progress for the students. The separate competence based qualification system for adults was abolished from 2018. (Vocational education and training Act 531/2017, i.e. Laki ammatillisesta koulutuksesta 531/2017).
- d) Prolongation of compulsory education until the age of 18. (Act on Compulsory Education 1214/2020 [in Finnish Oppivelvollisuuslaki 1214/2020])

- e) The reform of continuous learning. The reform was part of governments' programme (Bill (HE 76/2021); Service Centre for Continuous Learning and Employment Act 682/2021; OECD, 2020; Ministry of Education and Culture, Finland, 2020). The established Service Centre for Continuous Learning aims to integrate the adults' competence development more firmly to the needs of the world of work and regional development. The centre was established as an independent sub-unit within the National Agency for Education, administered and guided by the Ministry of Education and Culture and Ministry of Economic Affairs and Employment, Finland.

At present, the role IVET providers play in the provision of CVET depends on the regional composition of education providers and their adaptation to the changed operational context. In the metropolitan area of the capital Helsinki's region with its dense population, the strong traditional adult education providers have kept their profile, even though mergers have taken place. For example, two traditional adult education centres from the (one and only Finnish) metropolitan area, Amiedu and AEL, merged into Taitotalo in 2020 (Taitotalo n.d). *In contrast, adult education centre from South-Eastern Finland has first decreased and later merged its operations with another regional institution to adapt to changed funding after reform 2015-2018. At the same time VET provider from central Finland, Gradia provides education for young and adults in the same study groups, depending on the qualification in question and the size of study groups. (Expert interviews).*

The relations of IVET and CVET after reform 2015–18 was chosen as the topic of the expert interviews conducted for this case study. Depending on the institute, its traditional focus on youth vs. adult education and various fields of occupation, and its operational context, the education providers adapted to the change with different approaches. One interviewed expert described the change of the operational scenery as follows:

“The reform [2015–18] meant severe funding problems to quite many traditional adult education centres. We have [in Finland] some large scale adult education centres which clearly have the role and status of a strong provider. And they are based in the larger cities, like Helsinki, Turku, Tampere, Oulu, maybe Jyväskylä, to some minor extent. For the rest, ---, which are situated in the areas of net emigration and decreasing youth population, it meant that they had less funding. And when there was no differentiated Act for the adult education, the role of adult education became weaker compared to youth education, in my opinion”. The interviewed expert further described the changed funding background from the perspective of out of metropolitan area as challenging: “In the past, we used to have a lot of labour policy education funded by the Ministry of Economic Affairs and Employment (later MEAE), targeting the VET qualifications and following the same qualification system [governed by the Ministry of Education and Culture (later MEC)]. It was not transformed to the new funding system. The qualification-oriented labour policy education which was governed by the MEAE was never made part of the new funding system. At the same time when the governance of its funding was given to Ministry of Education and Culture, some funding was cut. For us it meant that all the IVET education we had been giving for unemployed adults based on the funding by MEAE was gone.” “The further vocational qualifications and specialist vocational qualifications funded by MEC remained with us only.” “In the following years the funding increased little by little. As the funding was given based on the outcome of the previous years, it meant that we had to do

more every year to have more funding. And then there was the lag of two years. We had truly severe years there.” In contrast, an expert from an education provider with both youth and adult students reflected on the change since the reform 2015–18 as follows: “At our institute young and adults studied in the same study groups already before the reform [2015–18]. It was familiar to teachers to work this way. I know there are still institutions where the learning groups for young and adults are differentiated. At our institution students coming through the joint application system and students coming through the continuous application system study in different groups. ... But we receive very young students also through the continuous application system.”

In sum, based on the differences of population in the region and their traditional institutional provision profiles youth and adult education providers had to adjust their provision and profile to the changed context and funding scheme post the reform 2015–2018. The adult education centres and providers of VET in the larger cities had more choice for the reorientation of their provision than the adult education centres situated in the rural areas with net-emigration. However, getting a full-scale picture of what kind of provision diminished and where would demand a more-detailed investigation.

Part 2: Further analysis of the selected policy development and the direction of travel

In this section the aim is to understand better the Finnish context of the policy and the drivers behind the policy development, both within the VET system and outside of the VET system. The section aims to find answers to the following questions directing the work of the WA4 studies:

- *“What are the key challenges that the selected policy development seek to overcome?”*
- *What are the underlying causes of these key challenges?*
- *What are the external drivers outside the VET system (Political, Environmental, Social, Technological, Legal and Economic factors)*
- *What are internal drivers and trends inside the VET system that called for policy development?*
- *What are the objectives of the selected policy development?*
- *How do such objectives relate to the challenge(s)?”*

The needs for the reorganisation of the relation of IVET – CVET were many-sided when preparing the reform of VET in Finland between 2015–2018. The causes for reform were identified both as internal and external to the system. The former legislation was differentiated for IVET (mainly to young), and the system of competence based qualifications which targeted the needs of adults with work experience. These legislations had been given in 1998 (Laki ammatillisesta peruskoulutuksesta 630/1998 [Initial vocational education Act]; Laki ammatillisesta aikuiskoulutuksesta [Adults’ vocational education Act 631/1998]; Asetus ammatillisesta aikuiskoulutuksesta 812/1998 [Decree about vocational adult education 1998/812]. The legislation had been amended several times and as a result the compilation of Acts had become to resemble a complicated patchwork quilt. However, according to the public documents the primary goals for the reform were to enhance the meaning of VET in the society, to renew funding and qualification structure while sustaining eligibility to higher education (Bill: HE 39/2017). Further, the aims included taking care of regional needs of education and promoting collaboration between education and the world of work. The overlapping educational provision and borders between youth and adult education were to be removed. Both the administration, the supervision and funding of unified forms of VET were organised as a new unit under Ministry of Education and Culture, while efficiency of the system and increase of workplace learning were set as important goals (Bill: HE 39/2017). From the perspective of reorganising the allocation of funding, it was decided that the differentiated systems for initial VET, further VET, apprenticeship training, and their regulation, guidance and funding will be unified. The change was planned in 2016 (Ministry of Finance, 2015).

Quite many of these policy goals set for the new reformed VET had been recognized and mentioned already in the work conducted by the ‘Supervisory committee for the development project of the system of vocational qualifications’ set up in 2009 (Ammatillisen tutkintojärjestelmän kehittämishankkeen (TUTKE) ohjausryhmä, 2010). The duties of the Supervisory committee included finding out, field by field, ways to increase freedom of choice in the qualifications. It had to identify combinations of qualifications and occupation specific

study units which could be unified to increase freedom of choice within and between qualifications (vocational upper secondary qualifications, further vocational qualifications, and specialist vocational qualifications). Further the qualification structure and whether it was still responsive enough to the needs of the labour market in each occupational field, had to be reconsidered. Thirdly, the developmental needs of the Qualification committees responsible for arranging and supervising skills demonstrations, and their resources had to be reviewed (Ammatillisen tutkintojärjestelmän kehittämishankkeen (TUTKE) ohjausryhmä, 2020).

The working group appointed by the Committee discussed the issues with interest groups representing students, employers, employer and employee organisations, education providers and teachers. The working group utilized custom-made studies and found out that the qualification system was overlapping and partly outdated. It was typical for the discussions of interest groups that qualifications which could be removed or united were hard to find. At the same time the qualification structure was found slow in its responses to changes in the labour market and more flexibility was demanded. The participants found important that the profiles of initial vocational qualifications, further vocational qualifications and specialist vocational qualifications would remain clear and identifiable. (Ammatillisen tutkintojärjestelmän kehittämishankkeen (TUTKE) ohjausryhmä, 2020). The working group also brought up the diversifying needs of learners and the European educational cooperation. As for the European cooperation, the European qualification framework, European credit system for vocational education and training (ECVET), European Quality Assurance Reference Framework for VET (EQARF), and Europass were brought up. In the Bill for the new legislation they were brought up as well together with New Skills Agenda established by the European Commission 2016 (Bill: HE 39/2017). Further, the diminishing age cohorts, urbanization and needs of the labour market resulting from technological change and the development of work processes, as well as the emergence of new occupational profiles were seen to contribute for the needs to develop the qualification system (Ammatillisen tutkintojärjestelmän kehittämishankkeen (TUTKE) ohjausryhmä, 2020). In sum, based on the documents cited above and the societal development, the external drivers for the reform of the Finnish VET system between 2015–2018 could be identified as Political, Social, Technological, Legal and Economic factors.

The *internal drivers* demanding the reorganizing of VET system included the overlapping qualifications. The structure of qualification system and individual qualifications had been developed at varying periods of time based on the initiatives of the labour market. The inadequate coordination of the initiatives had resulted in somewhat unclear structure of the whole qualification system, and there were overlapping study units across various qualifications (Ammatillisen tutkintojärjestelmän kehittämishankkeen (TUTKE) ohjausryhmä, 2020). Further, some qualifications were rather too specific and narrow with respect to the career opportunities available at the labour market. In 2008–2009 the national qualification requirements were unified so that the new national qualification requirements included both the curriculum requirements (in Finnish: opetussuunnitelmaperusteinen ammatillinen koulutus) and requirements for competence based qualifications (in Finnish: näyttötutkinnot; Ammatillisen tutkintojärjestelmän kehittämishankkeen (TUTKE) ohjausryhmä, 2020, p. 21). In practice, it meant that the requirements for both youth and adult education were presented in the same qualification requirement documents and there were no differentiated requirements.

The recent Act for the parliament about the Service Centre for Continuous Learning (682/2021; Bill for the parliament about the Service Centre for Continuous Learning and Employment Act and some related Acts 76/2021) will affect the organization of (liberal) adult education especially. According to the Bill, the main goal for establishing the new center is to integrate the services for continuous learning and employment. The key challenges addressed by the establishment of the integrative Service Centre are the cumulation of participation in education and competences to those with higher education and employment. Also, there are inadequacies of basic skills among quite many adults and the demand of qualification-oriented education among adult population has been more dominant than taking short training and specialized further education courses. The challenges explicated in the Bill reflect the findings of OECD's (OECD, 2020) report on continuous learning, the PIAAC studies and European Commission's report on skills' mismatches (Hämäläinen et al. 2017, 2019; Nygren et al. 2019, Vandeplass & Thum-Tysen, 2019). While the provision of adult education has an emphasis on the completion of whole qualifications it may prevent participation in education by some population. The Finnish education system has not had specific structures to support participation in education for those adults with weak or low basic skills. When the number of immigrants has increased, for example the skills in Finnish language have become topical issue of interest.

The external drivers mentioned as the prerequisite for establishing the new Service Centre emphasize technological changes and the acceleration of the change of economic structures due to Covid-19 pandemic (Bill for the parliament about the Service Centre for Continuous Learning and Employment Act and some related Acts 76/2021). The internal driver demanding the change is seen in the dispersed service structure spanning across different administrative sectors, and the lack of overview about adults' competence needs. The tasks of the new Service Centre relate to developing and coordinating information and guidance systems, analysis of the information and making forecasts about competence demand and labour requirements. The target groups of the Service Centre are employed and unemployed adults. The Service Centre complements the existing structures and supports regional service ecosystems as well as inter-regional cooperation (Bill for the parliament about the Service Centre for Continuous Learning and Employment Act and some related Acts 76/2021). The new planned short-term education should not demand long leaves from employment. It should address, for example, the competence needs created by digitalization and skills mismatches in the labour market.

In sum, the reforms concerning the relations of IVET and CVET and the reorganizing of the labour policy education seem to continue the turn towards liberalization and deregulation of the education system since the 1990s. The reforms emphasize funding and information-control in contrast to looking for centralized solutions and reflect the increased demand for reforming institutional set-up due to economic shocks and globalization (see Michelsen, 2018).

Change process and (institutional) context

In the following subsection the aim is to understand better the change process and its institutional context in relation to policy development, both within the VET system and outside of the VET system. The sub-section aims to find answers to the following questions directing the work of the WA4 studies:

- *“What broad set of actions / activities were conducted in order to achieve the objectives?”*
- *What is the mechanism of change linking the inputs to output/outcomes and long-term goals?*
- *What is the underpinning theory / line of thinking that justifies the chosen change process?*
- *What is in broad terms the (financial and human resource) input related to the selected policy development?*
- *What is the timeline associated with reaching the objectives?*
- *What actors are involved in the change process, what is their role? In particular, what role do IVET providers play?”*

The realignment of the relations of the Finnish IVET and CVET concerned legislation, regulation, funding and administration, qualification structure, models of organizing education and providers of education in the reform 2015–2018 (Virolainen 2018; Rintala & Nokelainen 2020; Ministry of Education and Culture, Finland, 2016). The change is illustrated in the following with some statistics (Boxes 1-3). Firstly, the following Box 1 about the Public Expenditure on VET and CVET adopted from the Finnish state’s budget proposals pictures the scale of the institutional change. While reading it, it is important to keep in mind that budget proposals may be appropriated with supplementary budgets, and the realized budget may thus differ from the proposed budget and be on higher or lower level than the initial proposal after the parliamentary process. (Note that some figures for the Box 1 have been adopted from the following year’s budget proposal.) Also, there have been some reallocation of funds between ministries, e.g. between Ministry of Education and Culture and Ministry of Economic Affairs and Employment of Finland. Therefore the Box 1 does not show the budgetary change in full detail, but it helps to illustrate some points and pictures the direction of change on broad terms. More thoroughgoing study would be needed to get the full picture.

In the Box 1 it is possible to see how the reform 2015–18 and the related Act (Vocational education and training Act 531/2017, i.e. Laki ammatillisesta koulutuksesta 531/2017) and changes implemented in funding and regulation had an effect in the state’s funding to VET providers. The separate categories for adult education, and apprenticeship training were removed, and the units were reallocated as part of categories concerning VET and funds for general education and administration as of 2017. The separate categories that existed for adult education earlier are not reported here, because comparison is problematic due to changes in the categories. The former category (prior 2017) included all kinds of adult education ranging from basic education to higher education. In general, the comparison presented in the Box 1 has to be read cautiously, keeping the shift in the allocation to different categories in mind. The removal of the separate unit for allocating funding for adult education was proposed in the budget planned for the year 2017 (Ministry of Finance, 2016). This removal of separate category for adult education is related to the changed relations of IVET and CVET in the reform 2015–2018. It is based on the logic that when the same education providers were to provide both youth and adult education through the same national qualification requirements, the different groups of providers were not allocated funding separately. The funding allocated

under the category ‘VET’ was 722 067 (1000 euros) in 2014 and 492 096 (1000 euros) in 2015 according State’s budget proposal for the year 2016 (Ministry of Finance, 2015). Further decrease of 190 000 000 euros was planned for the year 2017 (Ministry of Finance, 2016). Later there has been some increase in the funding allocated to the category ‘Vocational education’ related to the prolongation of compulsory education as of 2021 (Act on Compulsory Education 1214/2020). Participation to upper secondary education is obligatory to young, and initial VET is one of the two major routes available on the side of the general upper secondary education. Accordingly, the state allocates funding to it.

Box 1. Public expenditure on VET and CVET (1000 euros)

	2012 ⁽¹⁾	2014 ⁽²⁾	2015 ⁽²⁾	2016 ⁽²⁾	2018 ⁽³⁾	2020 ⁽⁴⁾	2021 ⁽⁴⁾
Vocational education	715 160	722 067	492 096	468 108	758 871	917 598	966 429
Vocational further education (ammattillinen lisäkoulutus)	154 361	138 075	133 006	131 805	--	--	--
Liberal adult education	164 144	164 818	156 545	157 589	152 833	165 216	160 973
Apprenticeship training	131 003	124 843	110 042	106 650	--	--	--
Specialist vocational education institutions	21 061	15 879	16 055	16 055	--	--	--
Total ⁽⁵⁾	1 185 729	1 165 682	907 744	722 618	911 704	1 082 814	1 127 402

Source: (1) Ministry of Finance (2013). Adopted from the Table: ‘The grants by state appropriated for the Ministry of Education and Culture’ (i.e. ‘Valtionosuusmäärärahat opetus- ja kulttuuriministeriön hallinnonalalla 1000 euroa’)
(2) Ministry of Finance (2015). Adopted from the Table ‘The grants by state appropriated for the Ministry of Education and Culture’ (i.e. ‘Valtionosuusmäärärahat opetus- ja kulttuuriministeriön hallinnonalalla 1000 euroa’)
(3) Ministry of Finance (2017). Adopted from the Table ‘The grants by state appropriated for the Ministry of Education and Culture’ (i.e. ‘Valtionosuusmäärärahat opetus- ja kulttuuriministeriön hallinnonalalla 1000 euroa’)
(4) Ministry of Finance (2020). Adopted from the Table ‘The grants by state appropriated for the Ministry of Education and Culture’ (i.e. ‘Valtionosuusmäärärahat opetus- ja kulttuuriministeriön hallinnonalalla 1000 euroa’)
(5), In addition the separate budget category for adult education included funding for VET before 2017. (Ministry of Finance, 2016).

Secondly, the change in the organization of VET and CVET is reflected in the number of institutions providing vocational education and training. It has decreased from 251 to 158 between 2010–2020 (see Box 2). This decrease may partly be an outcome of administrative mergers, where two (or more) institutions have merged their organizations and possibly cancelled activities of some sub-units. To get a more detailed picture, the histories of remaining institutions should be investigated.

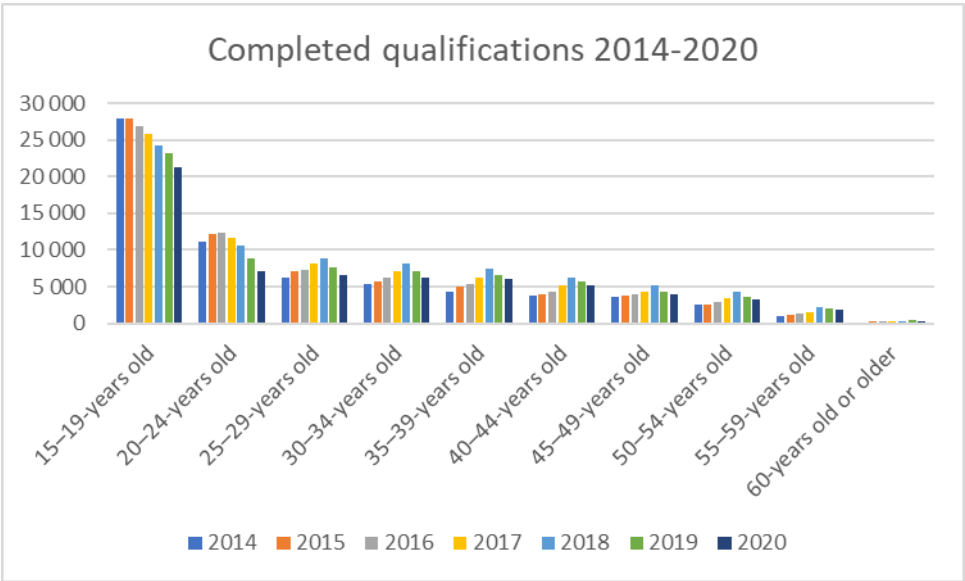
Box 2. The number of institutions providing vocational education and training 2010–20

Statistical year	Number of Institutions providing vocational education and training	Average number of Students/Number of educational institutions
2010	251	1067
2013	251	1194
2014	235	1297
2015	237	1291
2016	229	1339
2017	213	1431
2018	183	1626
2019	165	1738
2020	158	1746

Source: Education Statistics Finland (Vipunen.fi) Institutions providing vocational education and training

Thirdly, changes in participation in VET and CVET are illustrated in the following Figure 1, which shows the number of completed qualifications in VET (initial or further VET) by age group. There has been a decrease in the number of completed qualifications in the age groups ‘15–19 years old’ and ‘20–24 years old’ since 2015-16. In the age groups 25 and older, the decrease of the number of completed qualifications has become later, as of 2018. The Covid-19 pandemic has affected on the level of completion since 2020, but related numbers were not available at the source.

Figure 1. The number of completed VET qualifications by age group (see Annex 3)



Fourthly, the development of the completion rates by young and adults can be observed in the Box 3. The number of completed initial vocational qualifications has decreased from 43 100 to 40 600 between 2010–2020, but not in a linear manner. At the same time the share of

Box 3. **The number of completed initial, further and specialist vocational qualifications between 2010–2020**

	2010	2014	2015	2018	2020
Initial vocational qualification	43143	49224	51423	53055	40635
Further vocational qualification	10758	11691	12615	16575	14619
Specialist vocational qualification	5247	5352	5475	7884	6906
Total	59148	66267	69513	77517	62160

completed further vocational qualifications has increased by 3861 and the share of completed specialist vocational qualifications 1 659 in total (all occupational fields included). Further vocational qualifications and specialist vocational qualifications are directed to adults (mostly).

The roles of IVET and CVET providers after the reform 2015–2018 were characterized by an expert interviewee to have transformed: “those who have been on the side of vocational adult education do not provide education for young. In contrast, the traditional youth education institutions provide education for adults.”

The reasons for the differentiation of the education providers’ profiles were seen to stem from the size of age cohorts. There are relatively more adults in need of education than young aged 15-19 years in the perspective of diminishing age cohorts. Another expert reflected on the traditional images of the education providers in the eyes of the applicants. The pedagogic approach of adult education centers was also seen as a barrier for educational provision for youth by one interviewed adult education expert: *“We expect independent learning and self-directed learning, autonomous approach. We have less guidance and an orientation to short, effective processes. We expect students to have skills for working life participation. The pedagogic approach is however the main reason.”*

The adaptation to the changed funding scheme was reflected by an interviewed expert as follows:

“We are foundation owned. We were able to utilize some of our savings, but we also fired some of our teachers. We had a period of negotiations with personnel and layoffs. It enabled us to continue a couple of years. We are a relatively small education provider.” Eventually, the process directed the institute to merge with another regional VET provider.

Results and impact of the policy

The aims of the VET reform of 2015–2018 were to align the qualifications system, remove overlapping provision as well as simplify the governance of qualification requirements. In the present qualification system, there are 64 further vocational qualifications and 54 specialist

vocational qualifications. In contrast to the 177 further vocational qualifications and 122 specialist vocational qualifications that were available prior to the reform 2015–18, the decrease is remarkable (Bill: HE 39/2017). The development of the qualification structure, and related decrease in the number of qualifications is presented in the Box 4. The box does not present the competence based qualification system as separate, because the qualification structure was the same both for the curriculum based VET and competence based VET.

Box 4. The change of qualification structure since the late 1990s

Time period	Qualification structure: number of qualifications
In the late 1990s	77 upper secondary and 80 post-secondary VET qualifications
The 2010s prior to the new legislation 2017	52 initial vocational qualifications, 177 further vocational qualifications and 122 specialist vocational qualifications ² : altogether 351 vocational qualifications on various levels
Between 2018–2020	In sum 164 vocational qualifications on various levels (initial vocational qualifications [IVET], further [FE] and specialist vocational qualifications, [SPV])
Since 1.1.2021	44 vocational upper secondary qualifications; 64 further vocational qualifications and 54 specialist vocational qualifications

The number of vocational education providers has decreased substantially and some education providers which formerly focussed on IVET or CVET have reoriented the focus of their work and the qualifications they provide. The demand for these changes has been dependent on the regional circumstances, the ownership of the institutions, other sources of funding available for them (except for state) and the strategies individual VET providers have taken to adapt to the changed context. Holistic, overall evaluation of the impacts of the reform 2015–18 on IVET and CVET provision and completion has not been conducted. The views of stakeholders, such as education providers, employers, teachers, and students, on the outcomes of the reform have not been investigated in depth, recently.

The effect of the reform 2015–18 on the numbers of completed VET qualifications is presented above, in the Figure 1: the number of completed qualifications has decreased among the youngest age group (15–19 years old) since 2015. The number of qualifications completed by the older age groups, has also decreased but, a couple of years later, depending on the age group.

Part 3. Description of the selected programmes

In Part 3 of this case study report, the epistemological and pedagogical changes are discussed. In order to illustrate the changes, reference is made to VET programmes in two sectors.

- (a) **Industrial Manufacturing** (in particular, metals, machine-tool making, automotive), with a share between 10% and 20% of the workforce, representing areas where IVET plays typically a key role and where various institutional arrangements ('blue colour career ladders') for linking IVET and CVET are known to exist (e.g. the role of craft masters). The case study could focus on the learning opportunities **workers responsible for mechatronics (thereby for automatisisation) for manufacturing.**
- (b) **the Retail sector**, employing up to 10% of the workforce, with IVET playing a significant role only in some countries, while in others on-the-job training for unskilled workers dominates. Career pathways and the role of CVET are also different from the manufacturing and shows a large variety across countries (Tilly & Carré, 2017). The case study could focus on the learning opportunities of the **shop floor assistants having constant exchange with clients (thus not looking too much into the management ranks).**"

In the Finnish case, the occupations and the related closest qualifications on upper secondary level which are studied as examples are specifically the following two (a)–(b):

- (a) In the Finnish context, the closest qualifications at upper secondary level, which educate **Skilled workers responsible for the maintenance of automated systems, trained in mechatronics, and equivalent to "mechatronics engineer"**, are *Vocational Qualification in Mechanical Engineering and Production Technology*, i.e. 'kone- ja tuotantotekniikan perustutkinto' in Finnish, and '*Vocational qualification in Electrical Engineering and Automation Technology*', i.e. 'sähkö- ja automaatioalan perustutkinto'. Probably the latter is closer to what is looked after in the international comparison, but some study units of the former qualification may be applicable depending on the education provider's profile.
- (b) **Shop assistants**¹, trained at upper secondary level (e.g. a school based VET, and apprenticeship). In the Finnish context, the relevant qualification at upper secondary level is in *Vocational Qualification in Business* (i.e. 'Liiketoiminnan perustutkinto' in Finnish).

In the following the programmes are described in more detail. According to the Certificate Supplement provided by the Finnish National Agency for Education (2018a): "The scope of a vocational qualification in *Mechanical Engineering and Production Technology* is 180 competence points. The qualification is composed of vocational units (145 competence points) and common units (35 competence points). The scope of compulsory units in the qualification is 65 competence points (35 competence points from units that are compulsory for all competence areas and one compulsory qualification title -specific unit of 30 competence

¹ Shop assistant: 5223.6: <http://data.europa.eu/esco/occupation/0b15375e-dfdd-4047-9efb-096e0aaee7d2>

points), and 40-80 competence points are chosen from optional units specific to the qualification title (Optional units 1) and 0-40 competence points from units that are optional for all (Optional units 2).

The Vocational Qualification in Mechanical Engineering and Production Technology comprises two competence areas and five qualification titles: competence area in assembly and automation (Automation Assembler, Mechanical Fitter) and competence area in production technology (Machinist, Plater-welder, Maker of Plastic and Rubber Products).” The Competence areas in Assembly and Automation are directed toward assembling and installing mechanical machines and equipment (Automation Assembler, Mechanical Fitter). As specified in the Certificate supplement: “Mechanical fitters are able to inspect the parts and components that are to be installed, carry out the required checks and adjustments and do the required documentation.” “Automation assemblers are able to apply mechanics, hydraulics, pneumatics, and electrical engineering in electromechanical installations.”

In contrast, according to the Certificate Supplement provided by the Finnish National Agency for Education (2018b): “The scope of the *Vocational Qualification in Electrical Engineering and Automation Technology* is 180 competence points. The qualification is composed of vocational units (145 competence points) and common units (35 competence points). Of the vocational units, the scope of compulsory units is 75 competence points and the scope of optional units is 70 competence points. The Vocational Qualification in Electrical Engineering and Automation Technology comprises the following qualification titles: ‘Electrician’, and ‘Automation Assembler’.” The Certificate supplement describes: “Holders of a vocational qualification in Electrical Engineering and Automation Technology have the vocational skills required in tasks in the field of electrical engineering and automation technology and can work co-operatively and safely when carrying out different work tasks involving electrical and automation installations. Qualification holders can read planning documents of the field and carry out installation work according to the installation environment. They ensure that the final result is safe and meets the requirements set for the work.”

The level of both qualifications according to National Qualifications Framework (nqf) is 4, and in the European Qualifications Framework (eqf) 4 (ISCED 3). Mechanical engineering is also taught at universities of applied sciences where related qualification title is ‘Engineer (UAS); mechanical engineering’ (eqf 6; ISCED 6 level). In addition, traditional science universities, provide education for Master of Science in Engineering and Master of Science in Technology (ISCED 7). ⁽²⁾

The second qualification programme of interest is Shop assistants, trained on upper secondary level (e.g., a school based VET, and apprenticeship). In the Finnish context, the relevant qualification on upper secondary level is Vocational Qualification in Business (i.e., ‘Liiketoiminnan perustutkinto’, in Finnish). According to the certificate supplement provided by the National Agency for Education (2018c) the qualification is composed as follows: “The scope

⁽²⁾ The latest Finnish qualification requirements, which have been already translated in English are available at: <https://eperusteet.opintopolku.fi/#/en>.

of the vocational qualification in business is 180 competence points. The qualification is composed of vocational units (145 competence points) and common units (35 competence points). The qualification includes three compulsory units: Customer service, Productive operation, and Acting in a work community (55 competence points). Optional studies enable different study paths that may focus, for example, on customer service and sales skills, financial management skills, or library service skills. The qualification title produced by the Vocational Qualification in Business is, in Finnish, 'merkonomi'. The level of the qualifications is according to National Qualifications Framework (nqf) 4, European Qualifications Framework (eqf) 4 and ISCED 3. (These qualification requirements are not available in English at the time of writing this case study report, i.e. February, 2022).

The further vocational qualifications and specialist vocational qualifications relevant to the qualifications in the focus of the sub-study above are:

In relation to the field of Engineering:

Further vocational qualification in Machine Mechanics and Maintenance –

Specialist vocational qualification in Machine Mechanics and Maintenance. According to Certificate Supplement: "Holders of the Specialist vocational qualification in Machine Mechanics and Maintenance may work in the planning, design and implementation of mechanical and maintenance installations. Depending on their choices, qualification holders may specialise in preventive maintenance, cost accounting and the management of electric, automation, pneumatic and hydraulic installations." The extent of the specialist vocational qualification is 180 competence points, where 120 competence points are optional.

*Further vocational qualification in Electrical Engineering and Automation Technology
Specialist vocational qualification, in Electrical Engineering and Automation Technology.*

In relation to the field of Business:

Further Vocational Qualification in Business

Specialist Vocational Qualification in Business

Specialist Vocational Qualification in Leadership and Business Management

The latter SVQ is directed to supervisory position and leadership. Therefore the former SVQ is probably better appropriate for the range of comparison.

The programmes are part of the national VET system providing formal qualifications and receiving state funding (which is comprised of basic, performance based and effectiveness-based funding).

The links to present national qualification requirements (eRequirements) are presented in the following Box 5.

Box 5. **The study programmes and their national qualification requirements (links)**

(a) ***The Industrial Manufacturing***; education which prepares workers responsible for mechatronics (thereby for automatisisation) for manufacturing

Vocational Qualification in Mechanical Engineering and Production Technology

-qualification requirements are available in English at

<https://eperusteet.opintopolku.fi/#/en/esitys/7823349/reformi/tiedot>

Further vocational qualification in Machine Mechanics and Maintenance

-qualification requirements are available in Finnish at

<https://eperusteet.opintopolku.fi/#/fi/esitys/4540520/reformi/tiedot>

Specialist vocational qualification in Machine Mechanics and Maintenance

-qualification requirements are available in Finnish at

<https://eperusteet.opintopolku.fi/#/fi/esitys/4556447/reformi/tutkinnonosat>

Vocational qualification in Electrical Engineering and Automation Technology

-qualification requirements are available in English at

<https://eperusteet.opintopolku.fi/#/en/esitys/6810751/reformi/tiedot>

Further vocational qualification in Electrical Engineering and Automation Technology

-qualification requirements are available in Finnish at

<https://eperusteet.opintopolku.fi/#/fi/esitys/4556443/reformi/tutkinnonosat>

Specialist vocational qualification in Electrical Engineering and Automation Technology

-qualification requirements are available in Finnish at

<https://eperusteet.opintopolku.fi/#/fi/esitys/4556444/reformi/tiedot>

(b) ***The Retail sector***;

education which prepares shop floor assistants having constant exchange with clients

Vocational Qualification in Business

-qualification requirements are available in English at

<https://eperusteet.opintopolku.fi/#/en/kooste/3855077> (from 1.8.2018)

Further Vocational Qualification in Business

-qualification requirements are available in Finnish at

<https://eperusteet.opintopolku.fi/#/fi/esitys/4540525/reformi/tiedot>

Specialist Vocational Qualification in Business

-qualification requirements are available in Finnish at

<https://eperusteet.opintopolku.fi/#/fi/esitys/4540526/reformi/tiedot>

Specialist Vocational Qualification in Leadership and Business Management

-qualification requirements are available in Finnish at

<https://eperusteet.opintopolku.fi/#/fi/esitys/2541612/reformi/tiedot>

The qualifications, their extent and competence areas available for specialization are summarized in the following Box 6.

Box 6. Selected VET Programmes

(a) <i>the Industrial Manufacturing</i> ; education which prepares workers responsible for mechatronics (thereby for automatisisation) for manufacturing		(b) <i>the Retail sector</i> ; education which prepares shop floor assistants having constant exchange with clients
<p>Vocational Qualification in Mechanical Engineering and Production Technology, i.e. 'kone- ja tuotantotekniikan perustutkinto' in Finnish 180 competence points nqf 4, eqf 4, ISCED 3</p>	<p>Vocational qualification in Electrical Engineering and Automation Technology, i.e. 'sähkö- ja automaatioalan perustutkinto' in Finnish 180 competence points nqf 4, eqf 4, ISCED 3</p>	<p>Vocational Qualification in Business (i.e., 'Liiketoiminnan perustutkinto', in Finnish) 180 competence points nqf 4, eqf 4, ISCED 3</p>
<p>Further vocational qualification in Machine Mechanics and Maintenance 150 competence points nqf 4, eqf 4 -four competence areas available for specialization: Sheet Metal and Welding Technology; Glass and Ceramics; Machining; Plastics and Rubber Technology</p>	<p>Further vocational qualification in Electrical Engineering and Automation Technology 150 competence points nqf 4, eqf 4 -three competence areas available for specialization; Electrician (FQ); Automation Assembler (FQ); Locking and Security Systems Installer</p>	<p>Further Vocational Qualification in Business 150 competence points nqf 4, eqf 4 -six competence areas available for specialization: Business Services; Sales Work and Marketing Communications; Estate Agency Services; Financial Services; Business Administration, Financing and Accounting; International Business and Forwarding</p>
<p>Specialist vocational qualification in Machine Mechanics and Maintenance 180 competence points nqf 5, eqf 5 -specializations available: Preventive maintenance, Cost accounting and the management of electric, automation, Pneumatic and hydraulic installations</p>	<p>Specialist vocational qualification in Electrical Engineering and Automation Technology 180 competence points nqf 5, eqf 5 -specializations available: Electric installation, Automated installation, Locking and security systems</p>	<p>Specialist Vocational Qualification in Business 180 competence points nqf 5, eqf 5 -competence areas: Human Resources Management, Business Administration, Financing and Accounting, Sales Work and Marketing Communications, Trade, Competence area in Estate Agency Services, International Business.</p>

Following the general trend in the development of the qualification structure after the reform 2015–18, the qualification structure has become more compact also with respect to these education programmes. There are less qualification titles. However, some former qualification titles have been transformed into competence areas provided within the decreased number of qualification titles. (The changes in the qualification structure of these two sectors can be compared to competence based qualifications provided for adults in 2000,

as the same qualification titles have been available both via school-based and competence-based route (Table 1-2, Annex 3).

In the Finnish context, the IVET system is open both to young and adult students. The further and specialist vocational qualifications are targeted to adults mainly. Typically, an adult would study an IVET qualification when there is need to change occupation due to unemployment, health issues, better career opportunities in another field or personal interest (or any combination of these). The legitimacy of the further and specialist vocational qualifications derives from the value of the qualifications for the students and employers. (In some occupational fields, there are some rare further vocational qualifications targeted to adults which do not demand initial VET qualification as a background for their completion).

In the recent study which compared the employment and status of those with specialist vocational qualifications (SVQ) in the technology industry to the employment of those with initial VET qualifications, the employment benefits of SVQs were seen in better salary, and less unemployment months (Ojala & Pyöriä, 2020). At the same time, the group of those who had completed SVQs was small, and the results were not statistically significant. In general, SVQs are taken by a minority compared to IVET qualifications like Figures 2–3 presented later in the report picture.

In the following, the change in the relations of IVET and CVET after the reform 2015–18 is discussed from the perspective of the above qualifications in the field of technology, but as the national administration and governance is quite similar in both fields (in the state governed education) the characteristics are by and large applicable also to the field of business.

The change in the relation of IVET and CVET provision since reform 2015–18 was characterized by the interviewed expert as follows: *“At our institute, the change was that we took the adults to study among the young. But it was not totally without problems. Teachers were not necessarily prepared to it. More students with varying ethnic backgrounds entered. It was quite a lot of pain for the personnel. The reason for the combined groups was economic. There were not enough students in the youth education. At our institute the education for adults was finished [as a separate activity]. It seems that the trend is to start to provide the youth and adult education somewhat more separately. There are too many contradictions. The prolongation of compulsory education has caused some trouble. When the reform was to be established at our region, the adult education centres were saying that they will expand to youth education [prior to reform 2015-18]. They have not succeeded [in this effort]. The education providers were identified as adult education centres.”*

The educational institutions are typically long-standing. The adult education centres in the exemplary region had already been profiled as adult education centres, which dominated their image. As a result, they had difficulties in finding new, young clientele after the reform. For the educational institutions which had been educating mostly young, taking adults as students was easier, but depending on the targeted qualifications. Due to the national qualification requirements and national regulations the competence demands are in principle similar from one education provider to another, even though the regulation system allows some regional variation. The education providers receiving state funding are under State governance.

Among the targeted qualifications of the study, the Specialist Vocational Qualification in Leadership and Business Management is very popular among the students compared to many other specialist vocational qualifications. The education is appreciated both by the employers and the students as generic preparation for managerial positions. At the adult education centre where one interviewed expert was situated, the students had found the school-based education part of the qualification valuable: they wanted to come to meet their peer-group of other students and discuss with them. The peer-group exchange itself was found valuable. In addition, the contents of studies was seen as something more than their everyday activities of practice.

In the following, the differences between the targeted study programmes are discussed in short based on quantitative data about the completion rates by various age groups and the level of employment and other activities one year after the completion of the study programmes. The data has been derived from Education Statistics Finland (vipunen.fi, vocational education).

First, the data about the completion rates by various age groups (Figures 2–3) pictures, how the completion of further and specialist vocational qualifications is quite rare compared to initial vocational qualifications in both targeted programme’s fields. Second, the comparison of the age groups which complete further and specialist qualifications in the field of Technology and Business, shows that Further and Specialist vocational qualifications in the field of Business are taken relatively more often by older age groups than in the field of Technology. This relates to the role of these adult qualifications in the labour market, where the Further and Specialist Qualifications in Business and leadership have a more generic character.

Figure 2. **Completion of initial, further and specialist vocational qualifications by various age groups in the field of mechanical, process, energy and electrical engineering 2010, 2015, 2018, 2020**

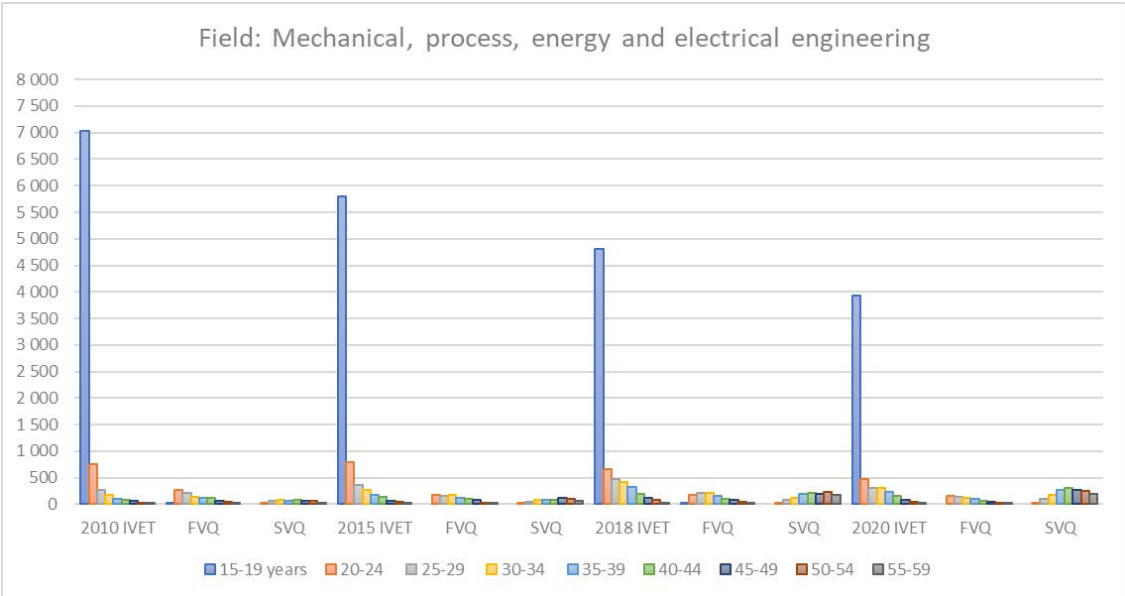
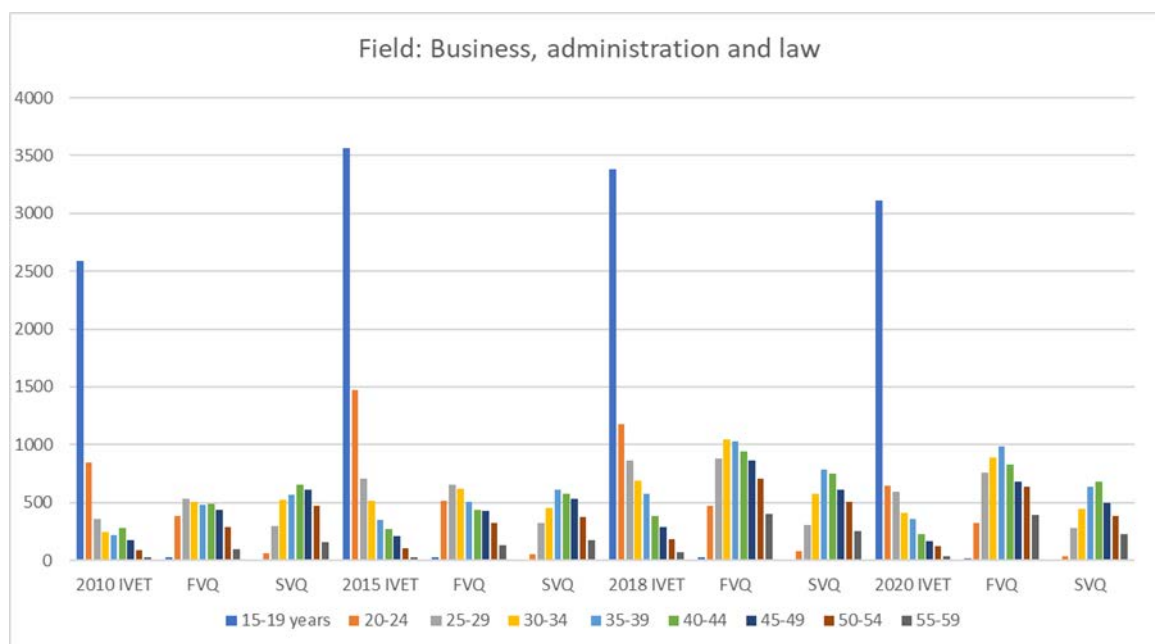


Figure 3. **Completion of studies initial, further and specialist vocational qualifications by various age groups in the field of business 2010, 2015, 2018, 2020**



Figures 4 and 5 show the data about students' transitions one year after they have completed their qualifications pictures, where they are placed one year after they have received their certificates. First, the data and figures show how the labour market position of those who complete further and specialist vocational qualifications is typically more often employed than for those who study initial VET qualification. This is an outcome of the entrance pattern to further vocational qualifications and specialist vocational qualifications through apprenticeship mainly. It is thus strongly related to former employment. Second, the data shows how adults are more often employed than young, whether it be initial or further or specialist qualification in the field of Business but not in the field of Technology in 2015. Finally, when the educational fields are compared, the field of Business has been slightly better for the employment of those with IVET or specialist vocational qualifications than the field of Technology but not for further vocational qualifications. Unfortunately, it was not possible to collect data limited to specific study programmes (or competency areas) within the fields. Therefore the Figures 4–5 show the study programmes' fields from a broader perspective ⁽³⁾.

⁽³⁾ Note: The Education Statistics Finland webpages provide data in Finnish and English, but the data in English is more limited and also it seems to follow the ISCED categorisation whereas the Finnish data follows national categorisation most times.)

Figure 4. Main activities one year after the completion of studies: the field of technology

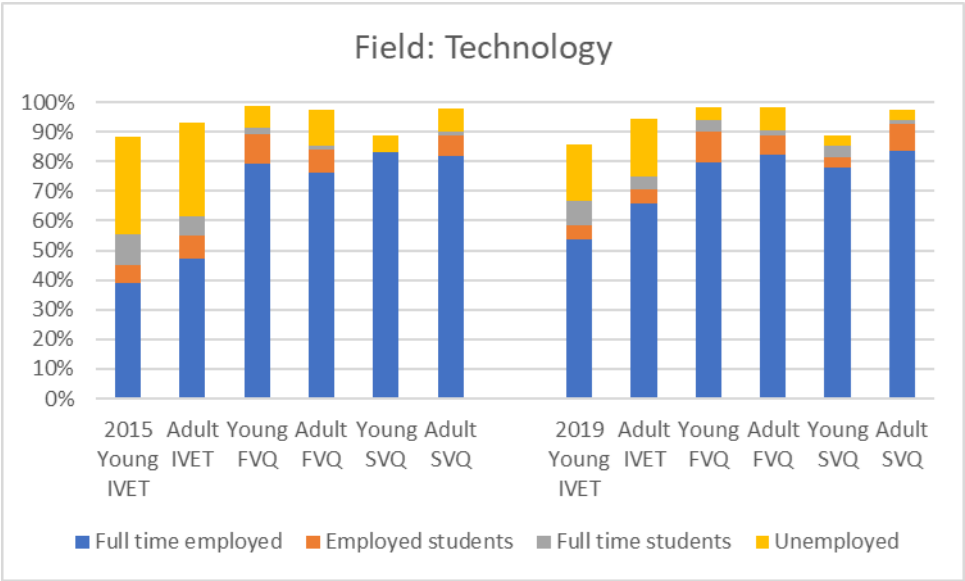
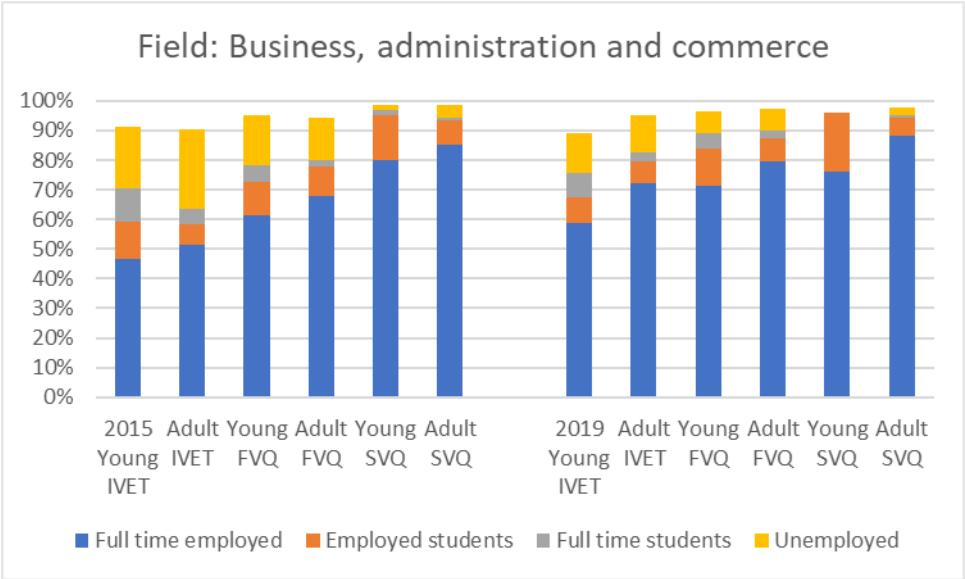


Figure 5. Main activities one year after the completion of studies: the field of business, administration and commerce



Part 4. Changed epistemological and pedagogical perspective

The aim of this section is to look at the epistemological and pedagogical perspective of the adult learning in the targeted qualifications. The central question set for the case studies is the following: ***“How did the changes in the role IVET providers play in providing learning to adults, as influenced by the policy developments, affect the content of learning and the way adults are trained?”***

Change in the pedagogical approach since the 1990s

The change toward competence based approach in adult VET education took place already in the 1990s when the competence based system was established in 1994. At present the same national qualification requirements are valid for both young and adults in initial VET since the reform 2015-18. This has meant adopting more competence-based approach in the national requirements for young. At the same time it has meant the need to study the common, more generic studies for the adults. Adults may have prior studies recognised and accredited when individual study plans are made in the beginning of the studies.

The national qualification requirements for further and specialist vocational qualifications (mainly targeted to adults) adopted competence based approach already in the 1990s. The change in the national qualification requirements is quite articulate and extensive. For example, in the national qualification requirements for the Chief Automation Assembler (National Agency of Education, 1995) the requirement text first aligns the qualification with the overall qualification structure, and its overall goals. Thereafter the document describes the field and its importance to society, responsibilities and generic skills needed in the occupation (collaboration, communication, language skills, client orientation, entrepreneurship, design and organisation and initiative for development in the field). Next, the study units comprising the qualification are listed. Finally, the competencies demanded are described. They make a difference between general competencies (related to safety, supervision, documentation, language skills, cost-effectiveness and client orientation) and specific competency areas (related to engineering). The assessment criteria are described on broad terms only, suggesting that attention should be given to quality, order, speed, economic utilization of the materials, and tools, practical and collaborative skills, not unit by unit. Specific criteria are not given in contrast to present requirements. At the time, the assessment criteria and tasks for demonstration were to be further defined by the qualification committees and institutions applying licences for provision of the qualifications.

The present national qualification requirements for Specialist Vocational Qualification in Electrical Engineering and Automation Technology give more emphasis to specific assessment criteria. The requirements on the whole are structured so that they give first the information about the tasks where the qualification is applicable (see <https://eperusteet.opintopolku.fi/#/fi/esitys/4556444/reformi/rakenne>). The major part of the requirements is the presentation of the optional competence areas (30 competence points each), and presentation of the varied specialization areas (60 competence points each). In addition, there is the obligatory competence area about managing, organization and design for

electrical and automation engineering. Each of these competence areas is structured for assessment (mainly) and provides an extensive list of the criteria for approved completion of skills demonstration for the competence area in question. Students will show their skills in practice at workplace. In the case that it is not possible to assess the needed skills in authentic workplace tasks, the demonstration will be supplemented in individual ways.

In contrast to the previous qualification, the national qualification requirements for the Specialist Vocational Qualification in Leadership and Business Management describe the skills demanded by leaders quite at length and suggest criteria for approved and failed demonstration already in 1998 (National Board of Education, 1998). The qualification requirements comprised three competence areas and their assessment criteria: (i) the activities of organisation and its development, (ii) leadership and (iii) methods of leadership. Assessment was to be completed in authentic work tasks at students own work organisations mostly, but it is recommended that students would write a final thesis and learn through their own project work, analysis, work plans and reports. These forms of work could be further supplemented with oral and literary assignments, queries about the subject and interviews.

The present national qualification requirements for the Specialist Vocational Qualification in Leadership and Business Management give more specified competence criteria for the assessment of each national qualification requirement competence area by competence area (see <https://eperusteet.opintopolku.fi/#/fi/esitys/2541612/reformi/tutkinnonosat/3059856>) in a similar way like the Specialist vocational qualification in Electrical Engineering and Automation Technology.

The differences in the roles of these qualifications in the labour market date back to the 1990s. The qualifications in the field of Business are more directed to be combined with various occupational backgrounds and fields of industry. An interviewed expert commented on their character stating that there is “Business taking place in every field of occupation” pointing out to the role of the Further and Specialist Qualifications in Business as overall education for those in leader and managerial, supervisory positions regardless of the field of occupation. The Specialist Vocational Qualification in Leadership and Business Management is appreciated and has a rather generic role for career oriented professionals who want to progress in managerial position. At the same time the qualifications related to automation and engineering targeted in this sub-study are rather field specific. As they are oriented to specific technological areas, they are labour market dependent in a different way; education for them demands more specific technological orientation also from the teachers to be labour market relevant. Their provision demands active role from the employers from the relevant industry.

The working life committees relevant for these qualifications have reviewed data about the development of these qualifications and made some short notes about the changes which have taken place between 2018–19 after the reform of 2015–18. In the field of electronics, automation and energy the completion of partial FVQs SVQs, i.e. specific competence areas instead of whole qualifications had increased while the number of completed whole qualifications had decreased for FVQs and increased slightly for SVQs (Kone- ja tuotantotekniikan työelämätoimikunta, n.d.). The members of the committee interpreted the increase in the completion rate as an outcome of the increased worklife relevance of the qualification requirements. The committee was concerned about the limited number of education providers oriented toward provision of qualifications in the field.

The working life committee occupied with qualifications in the field of Machinery and automation technology found comparison of the years 2018/2019 more difficult due to changes that had taken place in the requirements (Sähkö-, automaatio- ja energia-alan työelämätoimikunta n.d). The completion of these FVQs and SVQs had decreased. The committee was concerned about the quality of education and also about the relatively small number of skills demonstrations, which were completed at authentic work environments.

The working life committee responsible for the vocational qualifications in the Business field found the education providers to be going through a period of transition toward new requirements. The completion of partial qualifications and competency areas had become quite common in IVET (Liiketoiminnan pt työelämätoimikunta n.d.). During the years 2018-2019 the completion of partial qualifications and individual competency areas had not increased in FVQs and SVQs, even though it had increased in the IVET (Liiketoiminnan at työelämätoimikunta n.d.; Liiketoiminnan eat työelämätoimikunta n.d).

In sum, after the 2015–18 reform the pedagogic approach shifted toward more competence based approach and more individualised, flexible completion of qualifications was enabled, also enabling expansion of existing competencies through the completion of individual competence areas on the side of whole qualifications. At present, the national qualification requirements give more specific assessment criteria than in the past; the criteria are listed for each competency area separately, but the practitioners at some occupational fields do not find the criteria particularly helpful and easy to interpret (e.g. Kone- ja tuotantotekniikan työelämätoimikunta n.d.).

Learning provision

The provision of further and specialist vocational qualifications has traditionally been based on combining work-based learning and school based learning through apprenticeship since the 1990s. The national qualification requirements for these qualifications stated already in the mid-1990s that the skills and competences are demonstrated through vocational skills demonstrations. The skills demonstrations referred to the arrangements that were made to enable demonstration of the skills that were demanded for the completion of the part of the qualification in question. The skills demonstrations organised at the time were combinations of demonstration of practical skills and theoretical background which could be observed via paper and pen examinations. In the field of electrical engineering the theoretical part had to be completed first, before students could enter the practical demonstration (National Board of Education, 1996). The demonstrations were to be organised in authentic environments, whenever possible. In the field of Business education the main two dimensions of competence were seen to comprise personal competences and the skills and practical competences (National Board of Education, 1998). The skills demonstrations were mostly given in the students' workplace work organisations.

At present, the further and specialist qualifications are still taken mostly through apprenticeship (Sairanen, 2019). The reform 2015-2018 has meant that completion of partial qualifications has become more prominent. The terminological shift from skills demonstrations' toward more flexible and individually organised 'demonstrations' has taken place also with regard to further

and specialist qualifications. The national qualification requirements have changed from holistic presentation toward competence area specific definition of assessment criteria. The criteria are however pass-fail, like they used to be already in the 1990s.

In the following the differences between the engineering programmes and business programmes are further characterised shortly.

The study programme directed to the specialist vocational qualification of the Machine Mechanics and Maintenance have more work-based pedagogic approach than the Business programme. In contrast, the study programme of Electrical Engineering and Automation Technology is bound to have theoretical studies involved.

Most of the study programmes provided for adults (further and specialist vocational qualification) are oriented to situated learning (Lave & Wenger, 1991): the contents are learnt in a work-related and work-based way, in the environment and in relation to environment where it is utilized at work. The interviewed expert reflected on the approach: "We teach all the time theory in relation to practice and demonstrate in the practice, what it means." Some occupations are however more theory oriented, like the Specialist Vocational Qualification in Leadership and Business Management. In this qualification the expertise is seen to grow through students' finding and developing their own theory of practice, as reflected by the interviewed expert.

The compared study programmes have a different profile with respect to the labour market. Specialist vocational qualification in Electrical Engineering and Automation Technology is a popular qualification. It is found difficult but appreciated: it enables a licenced and appreciated position in the labour market and you get the right to complete specified installations with the licence. In contrast, the image of the qualifications for Machine Mechanics and Maintenance are lower. There is skills' demand in the labour market, and shortage of entrants to studies. The demand for competent workforce in automation, with a special understanding of information communication technology and coding, has increased lately, according to interviewed expert.

The interviewed experts reflected on the role of the teacher in these programmes as follows: *"The role of the teacher is rather facilitator-like. Of course, there are fields where there is a need to deliver knowledge and information like legislation. The teaching takes place in connection to the work tasks in the role of a guide or facilitator. Teachers guide students and learning is problem-based learning. Teachers do not give ready-made answers. Teacher and student think about the problem together and try and find a solution. It is individual. Some theory is taught in larger groups. The common studies are provided digitally mostly. Students have to complete some learning tasks on their own. There is quite a lot of self-directed learning. It is an outcome of the Covid-19 pandemic that digital learning has increased and enhanced. If there was something good about the pandemic, it is that it forced to do things [digitally] that were a little difficult in the beginning but became everyday practice."*

Regarding the Specialist Vocational Qualification in Electrical Engineering and Automation Technology, the pedagogic approach was characterised as follows: *"Our teachers teach the theory at the class. Further some practical assignments are completed at the facilities of the institute, at class, related to electrical engineering. In addition, we have projects, like we build a house, where all occupations related to building have an opportunity to train and have a role of their own. Further we have clients whom we deliver electric installation. We either*

deliver to a contractor or have our own projects. Naturally this takes place when the level of competencies is satisfactory after some training in the class. The teacher follows the completion of the tasks and is responsible for the quality of installations.”

Content of learning and how it is structured

In adult education the theoretical knowledge is typically taught in relation to its context of application. This means that theoretical knowledge is applied. The national qualification requirements describe how the study units are oriented to the tasks of the occupation. The common study units (generic studies) for adults are taught through a combined approach as reflected by the interviewed expert:

“We have provided the common studies, in a combined manner to answer the diverse needs of student population and their varied learning readiness. We provide one day face to face teaching, either at class or through virtual access. Thereafter students have learning assignments, they may gather in a peer group or not. After completion of the learning assignments the study unit is completed. In addition, there are workshops for those with learning difficulties, and also immigrants may accompany. They have teacher to supervise and guide the common studies. In principle, we have two paths: self-directed learning mainly digitally or workshop studies. However, there is a minimum of one day teaching by teacher in either case.”

It is possible to provide language studies for immigrants also by designing an education provider specific unit of qualification for that purpose (Finnish language).

One of the fundamental changes that took place after the reform 2015-18 was that also adults who completed initial vocational qualifications following the national qualification requirements had to complete the common studies. In practice it meant around half a year of studies (35 competence points). For those adults with low basic skills this has been problematic. Typically, they are young men according to interviewee. In the past, prior to reform of 2015–18, they were able to complete the studies without the common studies units following the legislation specified for adults. As reflected by an expert interviewee: *“Here they [policy-makers] should have created options [for the qualification requirements] that are not so categorical. There should have been options and free-choice.”* *“The problem concerns also some of those who come to fulfil their compulsory education. They have never continued their education because they have learning difficulties. They have need of special aid, which has increased tremendously. It has been a barrier to continuing education. Due to prolonged compulsory education, they have to study in one way or another. It should have been thought how we will ensure the throughput of this group, and their participation in the society. To make sure that they do not cancel studies based on the learning difficulties in subjects which are not central in the occupation.”* *“If they do not finish the qualification, they have difficulties in participating in society.”* *“The learning difficulties should be given more attention in the basic education. And there is a need to build the qualification system so that completion of qualifications is possible [for all including those with learning difficulties].”*

In terms of curriculum change, the reform 2015–2018 meant a shift toward a more simplified qualification structure. After reform the number of provided qualification titles decreased. At the same time, the number of competence areas did not necessarily decrease.

One interviewed expert reflected on the change commenting that the pace of reforming curricula has differed from field to field and in some fields of education the qualification structure had been reformed prior to reform. Curricula vice the reform 2015–2018 meant enhancement of competence based approach. The completion of competency units, parts of qualification relevant for each learner became easier for students and profitable for education providers, as they get funding also for partial completion of qualifications (competency units).

Length of studies and duration of programmes

At present, the goal is that initial VET qualifications may be studied at individual pace, depending on the personal study programme, and recognition and accreditation of prior learning. However, the studies have been planned to last about three years, in the past. As it was not necessary for the adults to complete the common study units, generic studies, their study programmes were somewhat shorter, when they followed the competence based qualification system. At present the common studies (around 35 competence units) are obligatory for adults. In contrast, the studies for Further and Specialist vocational qualifications take around from one to two years to complete.

Interviewed experts reflected on the personalised study programmes and related recognition and accreditation of prior learning as follows: For the young there is not that much demand and opportunity for the recognition and accreditation of prior learning, because they do not have that much work experience.

“The personalised study programmes were introduced to adult education centres, when the system of competence based qualifications was introduced [in the late 1990s]. Not to similar extent as today, but in the very beginning there was a lot of discussion if it is possible to allow a candidate to enter competence demonstration for a particular study unit immediately in the beginning of the studies if it is seen that the student already has the competence”. “In the future, when the funding system is renewed and we have less basic funding, we need more indication of the performance and students’ employment. The personalisation is essential for us to increase efficiency.”

Part 5. Conclusions and reflections on future development

In Finland, the reform 2015–18 changed the role of IVET providers when many of them opened their educational provision toward adults. In particular, the change in the educational institutions' funding was fundamental. However, there are large differences in how adult education centres and IVET providers adapted to the changed operational environment, depending on the region where they operate and its population structure. The traditional youth education providers combined groups with young and adults when it was possible. Typically, this was possible to traditional youth education providers situated in the larger cities or close to them. The adult education providers choose this strategy less often due to less young entrants, their traditions and pedagogic approach which was more suitable to teach adults. The education providers of metropolitan area were in more favourable situation in terms of the large student population.

The interviewed experts were expecting a change in the funding system of Adult education as well as change in the qualifications system through establishment of the new working group (so called TUTKE 4). These reforms are expected to find solutions for the education of adults who have difficulties in completing the common studies, and also for the young who have learning difficulties. In their view and based on the information they had received from Ministry of Education and Culture, the funding system of young and adults' vocational education will be differentiated in the future (again). The interviewed experts expected that the funding for the studies through compulsory education system (IVET for those under 18 years and those who have not completed compulsory education) will have a different funding formula. In their view the qualification requirements should be given more variance and more free-choice based on the student groups and fields of occupation when educational institutions are licenced by the National Agency for Education. Also, the length of studies, which in IVET is typically three years (despite individual study pace allowed by the legislation), should be taken into open discussion: is it good length for all the occupational fields. Further, interviewed experts saw a need to develop the contents of the specialist vocational qualifications further. The demonstration of existing skills as such was not seen as satisfactory and ambitious starting point. The students should have an opportunity to expand their skills, competencies and understanding of their field and occupation, as stated by the interviewed expert. The teachers' communities of practices should be utilised for developing education and qualification requirements in each field more actively.

Pedagogically, the national qualification requirements for IVET, further VET qualifications and specialist VET qualifications have shifted toward more competence-based approach since the 1990s. The requirements give emphasis to specific assessment criteria, which are defined for each competency area, instead of a more holistic approach. At the same time, the present opportunities to credit and certify students' completion of individual competency areas, which expand their competence and employability enables the flexible enhancement and certification of individual competencies compared to the past. Students' experiences about their benefits for employment, and life-long, life-wide learning has not been investigated thoroughly though.

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Annex to case study report

List of sources

List of interviewees/ informants

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ANNEX 1: Clarification of key terms

IVET and CVET: main differences

This work assignment focuses on the relationship between IVET and CVET and how IVET and CVET sub-systems interact to facilitate lifelong and life-wide learning. In order to understand the interplay between IVET and CVET first, the two key concepts need clarification.

The Cedefop glossary does not provide a definition of initial VET, but refers to **Initial Education and Training**, being: ‘general or vocational education and training carried out in the initial education system, usually before entering working life. Some training undertaken after entry into working life may be considered as initial training (such as retraining). Initial education and training can be carried out at any level in general or vocational education (full-time school-based or alternance training) or apprenticeship pathways.’ (Cedefop & Tissot, P., 2014, p. 51). Both IVET and CVET are offered by education and training providers and the same providers can offer both IVET and CVET, but this is not necessarily the case. In many countries, the demarcation between IVET and CVET is not always so clear cut (for example in Ireland, France, Finland, and the UK). In these countries, IVET and CVET tend to offer the same qualifications (for EQF levels 3 to 8). National systems of validation of prior learning, together with qualifications frameworks, have helped to bring together the two sub-systems. Elsewhere, the distinction between IVET and CVET may be based on different demarcation lines. For example:

- (a) system and funding-based distinction: e.g. IVET being state-funded, CVET not;
- (b) age-based distinction: e.g. IVET for learners up to 25 years old;
- (c) qualification-based distinction: e.g. IVET offers full qualifications, CVET only certificates;
- (d) provider-based distinction: e.g. IVET offered by public schools, CVET by companies or private providers.

In order to facilitate transitions into further learning, an effective offer of CVET needs to be in place. But what is understood by ‘CVET’? The previous project revealed that there are many dominant conceptions of CVET in European countries and the use of the term CVET is not consistent, sometimes not even within countries (Cedefop, 2019a p. 80). Internationally, CVET is explained as ‘education or training after initial education or entry into working life, aimed at helping individuals to improve or update their knowledge and/or skills; acquire new skills for a career move or retraining; continue their personal or professional development’ (Cedefop & Tissot, P., 2014, p. 51). In that sense, CVET is basically a part of adult learning oriented towards professional development. CVET generally aims to update competences needed in the labour market or society. Given this broad aim, CVET can be understood as (Cedefop, 2019b, p. 80):

- (a) job-related/occupation-specific formal education and training for adults;
- (b) job-related/occupation-specific formal and non-formal education and training for adults;
- (c) as (part) of further education and training or lifelong learning for adults.

In most EU Member States CVET is interpreted as vocational education for adults: CVET often refers to education and training that is carried out after initial regular formal education.

The target group of CVET comprises persons in the labour market, often defined by age: for example, in Bulgaria, persons over 16 years old, no longer in formal education.

The Changing Nature and Role of VET study also mentions that CVET is increasingly understood as being integrated into the lifelong learning perspective (Cedefop, 2019b, p.85). In addition to this, with diversification of the levels at which VET can be situated, CVET – as an orientation rather than a system – can be found in higher education (HE) as well. The Cedefop study on VET at higher levels concludes that there has been expansion and diversification of vocationally oriented education and training offered at higher levels in European countries over the last two decades (Cedefop, 2019a, p. 10). Furthermore, it mentions that there is no clear separation between continuing VET and higher VET. In the Netherlands, for example, the current debates relate to making higher education more flexible and accessible for non-traditional students and increasing the role of HE institutions (mainly Universities of Applied Science) in lifelong learning. This includes experimentation with the part-time higher education pathway, flexibilisation in paying college fees, experimentation in demand-side funding, and applying a more modular approach to higher education programmes. Experiments are currently being conducted on all those topics which should inform future policy development (Cedefop, 2019b, p. 109).

CVET contains a wide diversity of learning activities. CVET can include short term activities of one or two hours as well as much longer ones running over months or even longer. In addition, it presents an almost limitless diversity of content, starting with training in health-and-safety, updates on new products, tutorials for using new machines up to the presentation of cutting-edge research. Also, the settings of provision differ, be it in the workplace as for on-the-job training, or the classroom or a hotel resort hosting an international conference. Finally, uptake of forms of CVET are determined by completely different social or institutional processes.

CVET needs to be approached both as a specific part of the education system or – to use a term with a more encompassing meaning – skill formation systems (Thelen, 2008) as well as the employment system (Fligstein, 2001; Marsden, 1999). And even more, CVET should be seen as an orientation within other (educational) sectors compared to a specific system or sub-sector. This approach of referring to CVET as an orientation rather than a sector is further informed by the following considerations: Firstly, it is difficult to strictly distinguish between academic/general skills provision, vocational skills provision and/or transversal competence provision; and secondly, it is assumed that all skills and competences learned later in life will have some value in relation to the objective of CVET ('aimed at helping individuals to improve or update their knowledge and/or skills; acquire new 'skills for a career move or retraining; continue their personal or professional development').

IVET providers

Besides clarifying how this Work Assignment understands the difference between IVET and CVET and how it operationalises CVET (as different orientations in the learning of adults, rather than a separate system), the study also relies heavily on the conceptualisation of IVET providers. In many countries, outside of apprenticeship systems, IVET is provided by State-funded organisations such as VET colleges and technical colleges. Besides the State-funded institutions, there are also private providers being active in IVET, usually operating with State

funding as well. Apprenticeship systems are provided through on the job training of companies and off-the job training provided by VET providers or training institutions. The latter could be operated by sectoral organisations or other labour market institutions (Cedefop, 2008). While this will be further refined on the basis of work assignment 2, as a starting point, this work assignment will look at the national context to determine what is considered an IVET provider. This is in most cases a public IVET provider, but can also be the employer (in apprenticeship systems).

CVET conceptualisation

In line with definitions of initial and continuing education and training, this work assignment sees the distinction between IVET and CVET in that IVET is aimed at younger learners and offers them vocationally oriented education and training before they enter working life. CVET on the other hand is aimed at older learners and offers them education and training after they entered working life. In this explanation of CVET, a wider perspective is taken towards 'education and training', not being confined solely to 'vocationally oriented education and training'. This because the learning needs of adult learners already in the labour market, in line with the definition of 'adult education', vary widely, while still being relevant for their labour market position ⁽⁴⁾. They might lack specific basic skills, or a formal (secondary education qualification) which they need to progress in their work; also, they might lack occupation specific skills and competences, or an occupation specific qualification. We therefore propose in this work assignment to not make a distinction on the basis of existing education sub-systems and sectors, but to apply a broad concept of CVET operationalised as the learning of adults after leaving initial education. In this, the focus is on job/occupation (or labour market) relevant learning, but it is not neglecting the acquisition of key competences, or socially relevant adult learning (e.g. basic skills training). Furthermore, the focus is on learning that is in some way organised, irrespective of whether it leads to a formal qualification (formal education) or not (non-formal education). This conceptualisation entails that CVET provision crosses different 'traditional' education sectors, including adult learning sub-systems, higher education, general education, and IVET if they provide learning for adults after leaving initial education that is somehow related to job/occupation (or labour market) relevant learning.

Hence, CVET needs to be regarded both as an umbrella term for rather different forms of educational provision as well as a key part of skill formation and employment systems,

⁽⁴⁾ It is fully acknowledged that the societal understanding of what being an adult signifies has certainly changed since the 1970s, when today's still used definitions of adult education had been coined Mortimer, J.T. and Moen, P. (2016). The changing social construction of age and the life course: Precarious identity and enactment of 'early' and 'encore' Stages of Adulthood. In: Springer, Vol. pp. 111-129. The phase of youth and young adulthood has been expanded, with some markers of adulthood (e.g. leaving the parents' home, marriage, having a first child) significantly delayed compared to the 1970s, although there are important cross-country differences. Settersten JR, R.A., et al. (2015). Becoming adult: Meanings of markers to adulthood. *Emerging trends in the social and behavioral sciences: An interdisciplinary, searchable, and linkable resource*, pp. 1-16. Today, young adults up to 24 are expected to either pursue education, or combine phases of education (including higher education) and gainful work or seen as entitled to return to education in case they have left initial education prematurely (e.g. prior to completing upper secondary education as in the Early School Leaver (ESL) framework). In many countries, a dedicated system of educational provision targeting young adults (up to 25) has emerged, which offer programmes different from initial education but still more attuned to the needs of socialisation than programmes targeting fully grown up people.

provided mainly by employers and linked to established forms of breaking down work processes in particular jobs, comprising particular tasks and with particular skill profiles. Jobs can be organised mainly according to organisational needs or to established, standardised occupations. CVET is intimately linked to existing workplaces and occupational structures; it allows both for the necessary updating of an individual's skill profile to changing socio-technological requirements and for the preparation of individuals to master the demands of new jobs and attaining more demanding, advanced positions in particular.

This CVET orientation can be found in different sub-systems and sectors. A key question is therefore how CVET, or the learning of adults, is supported within the different sub-systems and sectors, whether these be IVET, general education, higher education, employment/PES policies or (liberal) adult education (⁵).

For the purpose of this work assignment and its wider approach to CVET (as the learning of adults after leaving initial education), we apply the following four clusters of orientations in CVET and what IVET providers could be involved in when facilitating the learning of adults:

1. **VET leading to acquisition of specific vocational/ occupation-specific skills and not leading to a formal qualification:** this relates to vocational courses and programmes not leading to a formally recognised qualification. This can include specific courses, training workshops etc. They aim at the acquisition of specific skills and possibly of a credential that has a value in the professional field. These VET courses can be linked to formal VET qualifications in the form of for instance specific modules or certificates. It can also include ALMP and more liberal adult education provision.
2. **VET leading to a formal qualification:** this relates to VET programmes at ISCED level 2, 3, and 4 (EQF 2-4). The aim is to obtain a formal education qualification, allowing further learning as well as preparing for labour market re-entry or increasing opportunities for higher level jobs or shifting jobs between sectors. This can also include higher level VET: ISCED 5 (EQF 5) or higher having the aim to obtain a higher (vocational) education formal qualification, opening up further formal learning pathways. This can be organised in an integrated way with IVET or organised separately for adults, having a distinct qualification structure, and distinct structure of delivery.
3. **Basic skills training:** this relates to basic skills courses aimed at solving a skills deficiency in specific basic skills such as literacy, numeracy and digital skills. This can include training courses being part of active labour market policies offered by VET providers and personal or social learning courses offered by VET providers.
4. **General education tracks (academic tracks and second chance):** this relates to formal qualifications for adult learners that are either regarded as second chance programmes or programmes that are aimed at obtaining access to higher education.

⁽⁵⁾ The 2019 synthesis report on Adult Learning in the EU 28 Member States mapped the following relevant legal frameworks covering adult learning as well as CVET in European countries: Adult education Acts; General education Acts; VET Acts; Higher education Acts; Labour Acts / PES; Other (e.g. on NQF, specific targeted Acts on migrant integration). See: (Ecorys, 2019 p. 45).

Given these four broad orientations, it needs to be stressed that an IVET institution can offer CVET forms within different orientations: They may offer vocationally-oriented CVET (leading to a qualification or not) and also general subjects and basic skills training.

The figure provides a more detailed overview.

Figure 6. **CVET conceptualisation and clustering (including forms and other names as mentioned in previously discussed categorisations)**

		Has an explicit vocational/ occupation-specific focus			
Does not result in formal qualification	<p>Orientation 1. VET leading to acquisition of specific vocational/ occupation-specific skills and not leading to a formal qualification</p> <p>Forms / other names:</p> <ul style="list-style-type: none"> • Post-secondary VET (not leading to a qualification) • Training that forms part of Active Labour Market Policies (occupation oriented) • Workplace or job-related learning • Continuing Professional Education Governed by Professional Bodies (not leading to a qualification) 	<p>Orientation 2. VET leading to a formal qualification</p> <p>Forms / other names:</p> <ul style="list-style-type: none"> • Post-secondary VET (leading to a qualification) • Apprenticeships • (Occupational) (Re)Training Programmes • Customised Vocational and Professional Programmes for Organisations • (Post-Tertiary) Continuing Higher Education (oriented to occupational knowledge) • Continuing Professional Education Governed by Professional Bodies (leading to a qualification) 	Results in formal qualification		
	<p>Orientation 3. Basic skills training</p> <p>Forms / other names:</p> <ul style="list-style-type: none"> • Basic skills and basic education • Training that forms part of Active Labour Market Policies (basic skills oriented) • Personal or social learning 	<p>Orientation 4. General education tracks (academic tracks and second chance)</p> <p>Forms / other names:</p> <ul style="list-style-type: none"> • Second chance education at upper secondary levels / Basic Skills and Remedy Programmes • Higher Education Programmes Accessible to Non-Traditional (Adult) Students • (Post-Tertiary) Continuing Higher Education (oriented to more general knowledge) 			
		Does not have an explicit vocational/ occupation-specific focus			

Source: Authors.

ANNEX 2. Examples about the change of qualification structure

Table 1. **Competence based qualifications for adults (CVET) in Electrical Engineering in 2004**

The sector of the Technology and transport	Competence qualifications in the subsector Electrical Engineering within the broader sector of Technology and Transport
	Vocational Qualification in Electrical Engineering Further Qualification for Automation Assemblers Further Qualification for Electronics Assemblers Further Qualification in the Electronics and Power Industry Further Qualification for Rail Traffic Safety Device Fitters Further Qualification for Household Appliance Fitters Further Qualification for Electricians Further Qualification for Power Plant Mechanics Further Qualification for Computer Mechanics Further Qualification for Telecommunications Fitters Further Qualification for Power Plant Operators Specialist Qualification for Automation Assemblers Specialist Qualification for Electronics Assemblers Specialist Qualification for Power Plant Mechanics Specialist Qualification for Electricians Specialist Qualification for Computer Mechanics Specialist Qualification for Telecommunications Fitters

Source: National Board of Education (2004). These qualifications were regulated by the Act (631/1998) and Decree (812/1998) on Vocational Adult Education.

Table 2. Competence based qualifications for adults in Business and Administration in 2004

The sector of the Business and Administration	Qualifications in the sector of Business and Administration
	<p>Vocational qualification in Business and Administration (Merkonomi)</p> <p>Vocational qualification in Business Information Technology (Datanomi)</p> <p>Further Qualification in Records and Archives Management</p> <p>Further Qualification in Information and Library Services</p> <p>Further Qualification in Property Management</p> <p>Further Qualification in Estate Agency Services</p> <p>Further Qualification in Marketing Communications</p> <p>Further Qualification in Sales</p> <p>Further Qualification in Financing and Insurance</p> <p>Further Qualification in Secretarial Studies</p> <p>Further Qualification in Business Administrations, Financing and Accounting</p> <p>Further Qualification in Information Technology</p> <p>Further Qualification in Foreign Trade</p> <p>Further Qualification in Messaging and Logistics Services</p> <p>Further Qualification for Porters</p> <p>Specialist Qualification in Management</p> <p>Specialist Qualification for Shop Managers</p> <p>Specialist Qualification for Shipbrokers</p> <p>Specialist Qualification in Marketing Communications</p> <p>Specialist Qualification for Food Managers</p> <p>Specialist Qualification in Business Administration, Financing and Accounting</p> <p>Specialist Qualification in Information Technology</p> <p>Specialist Qualification in Foreign Trade</p>

Source: National Board of Education (2004). Source: National Board of Education (2004). These qualifications were regulated by the Act (631/1998) and Decree (812/1998) on Vocational Adult Education

ANNEX 3. The number of completed VET qualifications by age group (source: Education Statistics Finland)

Age group	2014	2015	2016	2017	2018	2019	2020
15–19-years old	27 951	27 954	26 955	25 869	24 204	23 127	21 300
20–24-years old	11 145	12 156	12 345	11 706	10 683	8 832	7 125
25–29-years old	6 255	7 158	7 356	8 184	8 835	7 557	6 606
30–34-years old	5 352	5 778	6 297	7 152	8 163	7 122	6 219
35–39-years old	4 335	4 914	5 334	6 183	7 419	6 615	6 036
40–44-years old	3 828	3 948	4 245	5 094	6 138	5 646	5 142
45–49-years old	3 639	3 753	3 915	4 287	5 214	4 332	3 912
50–54-years old	2 553	2 574	2 946	3 504	4 302	3 534	3 177
55–59-years old	1 032	1 095	1 323	1 569	2 214	2 010	1 815
60-years old or older	177	180	222	282	345	381	333
Unknown	1-4	1-4	69	6		1-4	495
Total	66 267	69 513	71 007	73 836	77 517	69 156	62 60

ANNEX 4. Completion of qualifications by age group

Table 3. **Completion of initial, further and specialist vocational qualifications by various age groups in the field of mechanical, process, energy and electrical engineering 2010, 2015, 2018, 2020 (adopted from Education Statistics Finland, vipunen.fi)**

	2010 IVET	FVQ	SVQ	2015 IVET	FVQ	SVQ	2018 IVET	FVQ	SVQ	2020 IVET	FVQ	SVQ
15-19 years	7 035	18	<4	5793	<4	0	4803	12	<4	3939	<4	0
20-24	747	261	12	795	168	9	669	183	12	468	156	12
25-29	273	219	69	354	159	51	468	207	84	309	147	99
30-34	168	144	78	273	177	81	426	213	123	300	126	168
35-39	96	117	60	183	126	84	318	153	201	234	108	270
40-44	84	114	81	135	102	87	195	99	207	156	72	309
45-49	66	72	69	69	90	117	120	90	192	75	45	273
50-54	33	48	63	51	33	102	81	51	231	51	30	243
55-59	18	18	21	15	24	60	15	21	177	21	15	186
60-	<4	9	6	<4	<4	15	<4	<4	45	<4	<4	42

Note: initial vocational qualification (IVET), further vocational qualification (FVQ), specialist vocational qualification (SVQ)

Table 4. **Completion of studies initial, further and specialist vocational qualifications by various age groups in the field of business 2010, 2015, 2018, 2020 (adopted from Education Statistics Finland, vipunen.fi)**

	2010 IVET	FVQ	SVQ	2015 IVET	FVQ	SVQ	2018 IVET	FVQ	SVQ	2020 IVET	FVQ	SVQ
15-19 years	2586	30	0	3 561	27	..	3 384	24	..	3 108	15	1-4
20-24	849	387	60	1 470	519	54	1 176	468	81	645	324	33
25-29	357	534	297	708	654	321	864	879	303	594	759	276
30-34	249	507	528	513	618	453	687	1 044	576	414	888	444
35-39	219	483	564	351	510	609	579	1 029	786	360	987	639
40-44	276	492	657	270	438	573	387	939	753	231	828	678
45-49	174	435	612	207	429	531	285	861	609	168	678	498
50-54	84	285	468	105	324	375	183	705	507	126	633	381
55-59	24	96	159	24	132	171	69	399	252	36	396	225
60-	<4	21	27	0	18	21	12	54	45	1-4	72	48

Note: initial vocational qualification (IVET), further vocational qualification (FVQ), specialist vocational qualification (SVQ)