



TRACK-VET: Developing, assessing and validating transversal key competences in the formal initial and continuing VET

COUNTRY REPORT NORWAY – final version, 2019

Kaja Reegård & Jon Rogstad

ERASMUS+ project

Key Action 2 – Strategic Partnership in VET/HE

2017-1-PL01-KA202-038732

September 2017 – April 2020

www.track-vet.eu

Abbreviations and acronyms	4
Preparation of the report.....	5
Chapter 1. Overview of the formal initial and continuous VET system	6
1.1 The formal initial VET system.....	6
1.2 The formal continuous VET system	11
1.2.1 Apprenticeship as adults.....	12
1.2.2 Master craftsman education.....	12
1.2.3 The Experience-based route	13
1.2.4 Vocational colleges	14
1.3 The VET programmes selected	15
1.4 Formal responsibilities and general social and political context	15
1.5 How qualifications are being awarded	18
1.6 The relation between general core curriculum and VET curriculum.....	19
Chapter 2. Overview of the transversal key competences in formal VET	22
2.1 Curriculum renewal.....	22
2.2 Four areas of competence	22
Chapter 3. Formulation of TKC and their location in curricula	24
3.1 TKC in curricula	24
3.2 One example: The Office and Administrative worker	27
3.3 Responsibility for the formulation of TKC in the national and school curricula.....	29
3.4 Other transversal competences formulated in the national curricula	30
Chapter 4. Assessment and validation of TKC	33
4.1 How is the process of assessment organized in the national system?.....	33
4.2 Periodic assessment.....	33
4.3 Half-year assessment	34
4.4 Self-assessment.....	34
4.5 Final assessment	34
4.6 Which TKC competences are being assessed?.....	35
Chapter 5. Opinions of key stakeholders and teachers	38
5.1 What are the most important TKCs in IVET and CVET?	38
5.2 Are there twenty-first century competencies that are missing in TKC?.....	41

5.3 Are the TKCs sufficiently developed in the official national VET system?	43
5.4 Assessment of TKC	45
Chapter 6. Recommendations	48
6.1 Level of implementation	48
6.2 TKC must be prioritized.....	48
6.3 Strengthen the co-operation between schools and enterprises.....	49
References	50
Appendix 1	53

Abbreviations and acronyms

AfL - Assessment for Learning

ATA – Apprenticeship Training Agency

CVET – Continuous Vocational Education and Training

EBTC - Experience-based trade certificate

EQF – European Qualification Framework

ISCED – International Standard Classification of Education

IVET – Initial Vocational Education and Training

KPR06 – Knowledge Promotion Reform of 2006

LLL – Lifelong Learning

MCC - Master Craftsman Certificate

MCCC - Master Craftsman Certificate Committee

NGO – Non-governmental organisation

NOKUT - Norwegian Agency for Quality Assurance in Education

NQF – National Qualification Framework

R94 – Reform of 1994

SME – Small and medium-sized enterprises

TKC – Transversal Key Competences

TCS - Training Candidature Scheme

VET – Vocational Education and Training

VPL – Validated Prior Learning

Preparation of the report

This country report was prepared by Kaja Reegård (project manager) and Research Director Jon Rogstad at Fafo. Anna Hagen Tønder functioned as in-house quality assurer. The overview and collection of relevant literature was initiated in January 2018, and continued throughout March, while the literature analysis was largely spanning from April-June 2018. The first individual in-depth interviews were conducted in March and April 2018, while most of the data collection took place in August 2018. The writing of the report was largely conducted throughout September and October 2018.

The first individual in-depth interviews were with key interviewees, providing useful background information of the ways TKC are formulated in the initial and continuous VET system in Norway. We approached the data collection partly as snowball-driven sampling, which means that interviewees helped identify other relevant persons to be included in the data material.

In total, a broad spectrum of actors was interviewed, representing the educational authorities, labour unions, and organisations. The report is based on interviews with seven stakeholders and four teachers. The stakeholders have backgrounds from different institutions, such as NGOs (employer and employee organizations), and people responsible for the formulation of education policy. We have also talked to people with political backgrounds. We interviewed several teachers involved in various vocational programmes within IVET. We also made use of available data and interviewed employers about their opinions of skills and acquisition of skills in working life. The data are not intended to be representative, but rather portray our interviewees' basic perceptions, experiences and opinions. The interviewees were positive to contribute with their knowledge, experience and opinions.

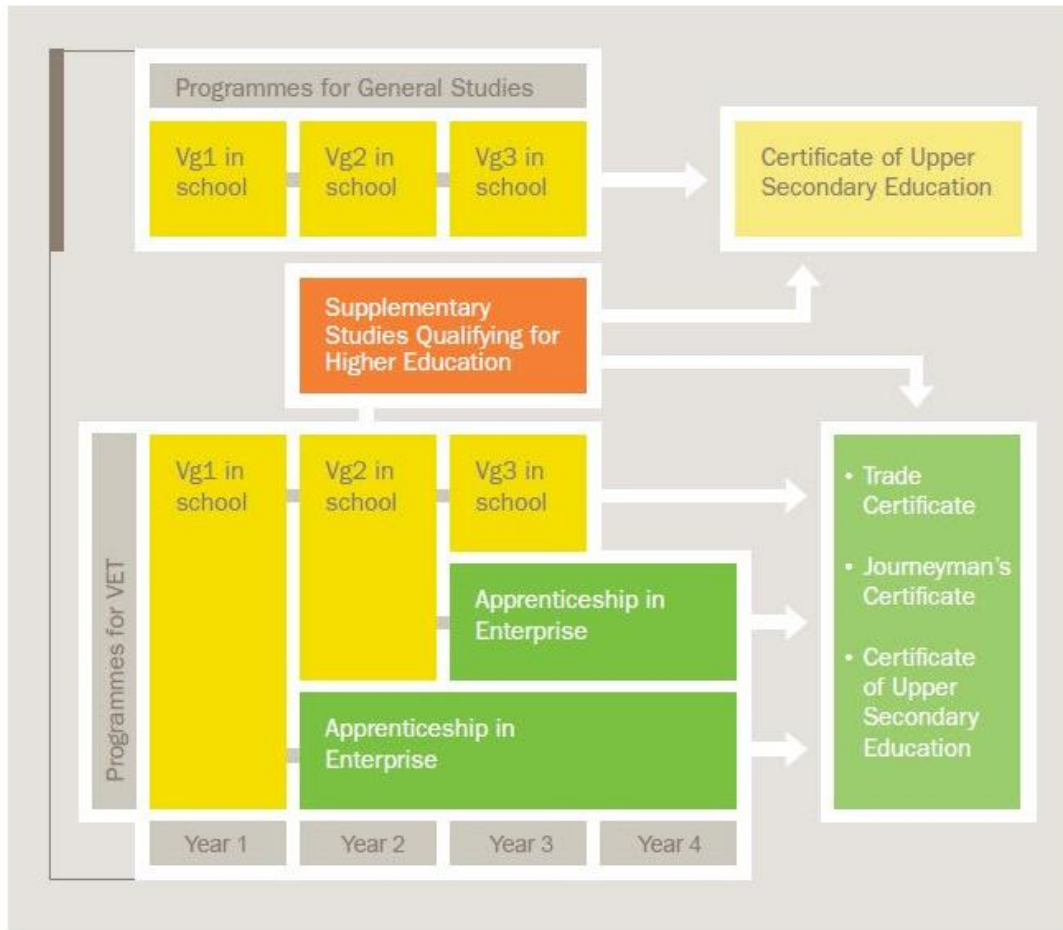
Chapter 1. Overview of the formal initial and continuous VET system

This chapter addresses the structural architecture of the Norwegian formal initial and continuous VET system, and how this is defined and delineated in the country report. The chapter starts with an overview of the social and political context of Norway which is relevant to understand the workings of the education system. Then, the initial VET system, and subsequently the more fragmented continuous VET system is presented.

1.1 The formal initial VET system

VET in Norway is part of the upper secondary education system. Thus, when referring to the formal initial VET system in Norway, one means the youth education. Most pupils in upper secondary education are aged 16 to 21. Everyone who completes compulsory lower secondary education have a statutory right to upper secondary education (from 1994), called the ‘youth’s right’ (e.g., Sterri et al. 2015). Close to the whole youth cohort enters – yet only 74.5 per cent completes the upper secondary education within five years (Statistics Norway 2018). Figure 1 shows an overview of the upper secondary education system, comprised of the two main tracks; vocational programmes and programmes for general studies. Approximately half of the youth cohort entering upper secondary education in 2017 chose a vocational programme (Skoleporten,2018).

Figure 1. Overview of the upper secondary education system.



Source: The Norwegian Directorate for Education and Training (2018)

The upper secondary structure is divided into eight vocational programmes, (and five programmes for general studies, qualifying for higher education: Programme for Specialization in General Studies, Programme for Sports and Physical Education, Programme for Music, Dance and Drama, and Programme for Media and Communication) (see Table 1).

Table 1. Overview of the upper secondary VET Programmes

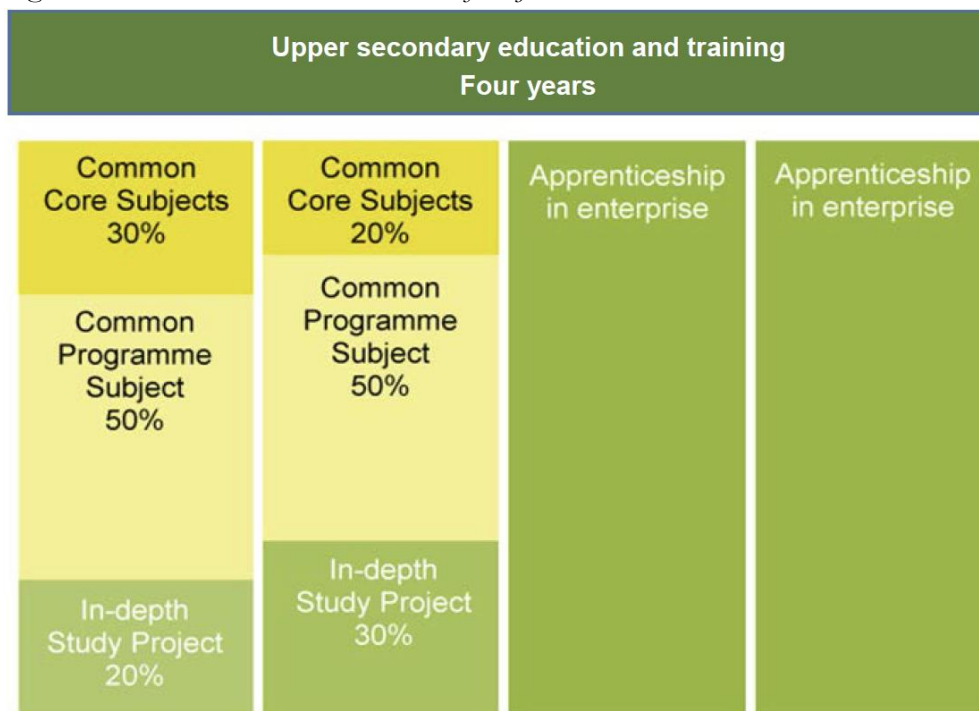
Building and construction
Design, Arts and Crafts
Electrical Trades
Health and Social Care
Agriculture, Fishing and Forestry
Restaurant and Food Processing Trades
Service and Transport
Technical and Industrial Production

Education during the 3 years of upper secondary school takes place at three levels: Vg1, Vg2 and Vg3. General Studies take three years and lead to general university admissions certification. It is possible for pupils who have finished their vocational education at Vg1 and Vg2 to take Vg3 supplementary programme for general university admissions certification. At the end of the 3 years of upper secondary education within general/ academic programmes pupils are awarded the Upper Secondary School Certificate). Students who obtain this certificate automatically fulfil the general criteria for admission to Norwegian higher education.

Most of the VET programmes consist of two years of school-based education and training, followed by two years of apprenticeship in a training company. The vocational variant, consisting of 2 years of upper secondary school followed by 1 to 2 years of practical training in business or industry (often in combination with instruction at school), leads to the Trade certificate or the Journeyman's certificate), depending on the specialisation. The first year provides general education and introductory knowledge of the vocational area. During the second year, VET students choose specialisations, and the courses are more trade-specific.

The curricula and the number of teaching hours per subject at each level are laid down in regulations. The subjects covered during the first two years of school-based IVET are divided into three main categories: 1) *Common core subjects* (Norwegian, English, mathematics, physical education, natural sciences and social sciences) are the same for all VET programmes. 2. *Common programme subjects* cover trade specific theory and practice. During the first year (upper secondary level 1) these subjects offer a general introduction to the vocational field. During the second year (upper secondary level 2) these subjects become more specified as the pupils decide which trade they want to pursue. 3. *The vocational specialisation* allow pupils to alternate between school and enterprise and gain an early introduction to working life and gain a realistic working-life experience at an early stage of their education. Companies are invited to define the content of the training, based on local and regional needs. The subject vocational specialisation provides pupils the option to try out one or more trades (SIU 2016).

Figure 2. The 2+2 model with structure of subjects



Source: Norwegian Directorate for Education and Training (in Refernet KC 2016).

After the two initial school-based years, the students become apprentices, and are generally trained full time in the companies. They do not return to school-based learning post apprenticeship initiation. This means that it is a *combination* of school-based and work-based learning which characterises the Norwegian VET system. The apprenticeship period provides the apprentice with an opportunity to gain in-depth knowledge in a vocational field and prepare for the trade- or journeyman's exams. The apprenticeship period consists of one year of training and one year of productive work for the training enterprise. How this is organised varies, in general apprentices will receive more training in the beginning of the apprenticeship (The Norwegian Directorate for Education and Training 2018). After two years in school, the apprentice signs a legally binding apprenticeship contract with the training enterprise and a representative from the county authorities. By law, apprentices are employees of the company, with the rights and obligations that follow. They are entitled to a salary that increases with the apprentice's productivity during the two-year apprenticeship period. Wages normally starts at 30 per cent and increases to 80 per cent of a skilled worker's wages.

A training company with an apprentice must appoint a qualified training supervisor and an additional trainer. How training is conducted varies between companies, but other employees in the companies are often involved in the training. The training company must be able to document how the training is planned, organised and assessed to ensure that apprentices can develop the necessary skills and competences. Pupils in vocational education have no statutory

right to an apprenticeship placement in a training company. However, because pupils have a right to upper secondary education, county authorities are required to provide one year of practical school-based training, equivalent to the apprenticeship training (Vg3 in school).

County authorities must approve enterprises seeking to provide apprenticeship training. Approval is granted if the enterprise meets training requirements for the trade curriculum. County authorities also have the right to revoke approval if training is not conducted according to the contractual agreement and national curriculum. In 2002, the full responsibility of VET financing was given to the county authorities. The county authorities pay a subsidy – twice a year – to businesses/ enterprises with apprenticeships. The rate of the subsidy is decided by the Ministry of Education and Research. In 2017, training companies received a state grant of € 16467 per apprentice for a two-year training period (The Norwegian Directorate for Education and Training 2017). The grant is distributed evenly throughout the apprenticeship period in the company and is supposed to cover costs related to training the apprentice. Additional grants are given to enterprises either for offering apprenticeships in rare and protected crafts or for accepting apprentices or training candidates with special education needs (SIU 2016). The employers receive relatively substantial subsidies for apprenticeship training, compared to other European countries (Kuczera et al., 2008).

Training companies often establish umbrella organisations called Apprenticeship Training Agencies (ATAs) to secure training according to curricula and regulations, and to reduce administrative burdens. About 70 to 80 per cent of training enterprises are associated with such agencies. The ATAs formally enter into contractual agreements with county authorities and assume responsibility for training apprentices. Nonetheless, county authorities must approve each individual training enterprise. ATAs often take responsibility for recruiting new training enterprises and for training staff involved in the tutoring of apprentices. Høst, Skålholt and Nyen (2014) found that the ATAs often carried out the county authorities' tasks and worked actively on assuring the quality of apprenticeship training. Although ATAs have formal status as training enterprises, they operate somewhere between the county authorities and the individual training enterprises, making their legal status unclear. Nonetheless, research shows that the institutional support given by the ATAs is important for the apprenticeship scheme to work (Høst, Skålholt & Nyen 2012; Høst 2015).

Most of the upper secondary VET programmes lead to a (range of different) trade or journeyman's certificate at National Qualification Framework (NQF) level 4A (European Qualification Framework (EQF) 4). There are currently 194 certificates available at this level of education (SIU 2016), however 30-35 account for the majority. The trade certificate is a qualification whose labour market value differs between labour market sectors, but generally provides access to relevant work. Vocational programmes do not provide general entry qualifications to higher education. All upper secondary vocational qualifications are at EQF 4/ISCED 3-levels. Since the major educational reform of 1994, the system includes the opportunity to take a supplementary year of academic subject to access higher education, typically

undertaken after the two school-based years, or by taking an extra year after graduating with a trade certificate. This year leads to a qualification at NQF level 4B and EQF level 4. This pathway replaces the two-year apprenticeship period, and the pupils will thus not receive a trade or journeyman's certificate. In 2015, 8 688 pupils (26.6 per cent) selected this option after their second year in a VET programme (The Norwegian Directorate for Education and Training 2017). Today, this option is particularly popular within the programmes for the public sector, service sector and health and child care (Olsen et al. 2015).

The Training Candidature Scheme (TCS) targets pupils who for various reasons struggle to achieve the requirements for the trade or journeyman's certificate. The TCS was initiated in 2000 and provides pupils the possibility to obtain a specially adapted qualification at a lower level than a trade or journeyman's certificate. The training candidate establishes a training contract with a training company, which is followed by a skills test. While pupils in the regular apprenticeship scheme must fulfil all the learning objectives set in the curriculum, a training candidate receives adapted training in a limited number of curricular goals. A training candidate therefore has a less comprehensive exam that leads to a vocational training certificate at EQF level 3. The scope of the TCS has increased by 33 per cent from 2011 to 2015 (SIU 2016).

1.2 The formal continuous VET system

In order to understand lifelong learning policy in Norway, it is important to look into the historical aspect of its establishment. Already in 1950, when the Apprenticeship Act was adopted, the right to take the Craft- and Journeyman's Examinations was reserved not only for apprentices but also for workers without formal training. The condition stated in §20 was that the worker had to have been practicing his or her trade 25 per cent longer than the set time for apprenticeship. In 1976, the creation of the Adult Education Act secured adults attendance to education and training at upper secondary level, both in general studies and VET. Working life in Norway has a long-standing tradition and good experiences with compensating skills needs by formalising competences connected to the practice. This has made the Norwegian education and training and VET system available to older youth and adults, with formal and non-formal education and training (Høst 2008; The Norwegian Directorate for Education and Training 2008).

There are many adults who obtain vocational qualifications, i.e., trade certificates in Norway. Approximately half of all trade exams are completed by adults (8-10 000 yearly). The average age for persons completing a vocational programme in Norway is 28, which is among the highest in the OECD (ref). Two out three adults over the age of 25 obtain the trade certificate as adults (Bratsberg, Nyen and Raaum 2017; Bratsberg, Nyen and Raaum forthcoming). Dropping out of upper secondary education and training in Norway does not necessarily lead to a dead end. Combined with work experience, a well-developed adult education system and opportunities for validation of prior learning (VPL) facilitates reintegration into education and training. The number

of adults attending upper secondary VET education is increasing: e.g., from 2013/14 to 2014/15 it increased by 4.8 per cent (Directorate for Education and Training, in SIU 2016).

In Norway, one has a statutory right to upper secondary education as adult from the year turning 25 years of age, called the ‘adult’s right’ (Sterri et al. 2015). The adults’ right applies if one has completed primary and lower secondary school or the equivalent in Norway or another country, but has not completed upper secondary education or training. The adults’ right also applies if one has completed upper secondary education in another country but this education has not been approved in Norway. The conditions for the right to upper secondary education are that one holds legal residence in Norway (and that your application for a residence permit has been granted). The adults’ right gives the right to three years of upper secondary education, or more for vocational training if the required training period is longer. As an adult, one has the right to assessment of formal, non-formal and informal qualification (vilbli.no).

In contrast to the relative stringent formal initial VET system, the formal continuous VET system is far more fragmented. In the following, we will describe four central continuous VET institutions in Norway.

1.2.1 Apprenticeship as adults

Adult apprenticeship resembles ordinary apprenticeship for youth, however, with the option of having more or all training in the company.

1.2.2 Master craftsman education

The Master craftsman education (leading to the Master Craftsman Certificate (MCC)) is VET for adults who hold a trade or journeyman’s certificate, who have several years of relevant work experience and wish to start up their own business or hold a managerial position in a craft enterprise. This is a public education and certification scheme, organised under the Norwegian Ministry of Trade, Industry and Fisheries.

The scheme is administered by the publicly appointed Master Craftsman Certificate Committee (MCCC), which determines training standards, practice requirements and awards the MCC. The MCCC defines the curricula based on input from professional master craftsmen and social partners. The curriculum has recently been revised due to increased competence requirements for leaders of small and medium-sized enterprises (SME). Different public and private institutions, such as Folkeuniversitetet¹ and tertiary vocational education schools, provide master craftsperson education.

The Master craftsman education and training combines general business management, marketing, and vocational theory. The training covers general administrative subjects, e.g. organisation and management, marketing and financial control, as well as craft theory. Common

¹ <https://www.folkeuniversitetet.no/eng>

subjects are delivered part-time over two years. The training is typically combined with full-time work as an employee or owner of a SME. ICT is integrated into the whole course. Both common subjects and craft theory are offered as evening and part-time courses. Distance education courses are also available.

Courses in common subjects conclude with a written examination. In craft theory, a written examination is held for each master craftsman subject. Pupils may also take the examination as private candidates. In recent years, MCC has further extended the education system for master craftsman. As a result, learning output-based degrees from other providers can also be recognised.

Successful candidates obtain the title 'Master Craftsman'. The MCC is awarded in 73 different crafts covering all traditional trades in which journeyman's examinations are held and journeyman's certificates issued, as well as some (newer) trades with craft examinations and certificates.

1.2.3 The Experience-based route

The Experience-based route allows people who can document long, varied and relevant work experience to register for the vocational trade examination, usually after taking a shorter theoretical course. Thus, the scheme constitutes a formalisation of skills and competence acquired through practice. This practice-based route is a commonly used qualification route in the Norwegian labour market, and accounts for about a third of all new trade certificates each year. It enables segments of the population with an otherwise low likelihood for completing upper secondary education to acquire formal qualifications at this level. Apprenticeships and Experience-based trade certification provide adults with a second chance to acquire upper secondary vocational qualifications (Bratsberg et al. 2017).

The Experience-based Trade Certification was established in 1950 (as described above), and was connected to the Adult Education Act, established in 1976. The scheme was further formalized in 1980, when the Apprenticeship Act from 1950 was altered to The Vocational Education and Training Act (Høst 2008). Within Experience-based Trade Certification, practical training in VET can take place outside the apprenticeship system and it makes it possible to pass the Craft- or Journeyman's Certificate without an apprentice contract. The labour market in Norway has an ongoing tradition for, and good experiences with compensating skills needs by giving employees the future possibility of gaining formal competences connected to the practice. The craft and industry sectors have recruited many skilled workers through the Experience-based Trade Certification scheme. The metal-industry, for example, saw this as an alternative to recruit skilled workers when the trade outlook fell in the 1960's and 70's, making it difficult to employ apprentices and already skilled workers (Høst 2008). The scheme is also important for the recruitment of tutors, skilled instructors and members of the Examination Boards (The Norwegian Directorate for Education and Training, 2008).

Since 1950, the Experience-based Trade Certification has grown to be an important pathway for both adults and young adults who have difficulties passing basic skills and the education system in schools. This scheme is also used by adults who have not completed upper secondary education. The Experience-based Trade Certification is meant to meet the needs of mobility between jobs, changes of skills need of the labour market in general and the overarching need of competences in an increasingly complex future society.

Studies have concluded that since 1950, the Experience-based Trade Certification has been as important as the apprenticeship system examining the amount of passed Craft- or Journeyman's Certificates (Michelsen and Høst 2001). From 2002-2007, the scheme contributed with one third of all Craft- or Journeyman's examinations, covering a stable 6000 of all Craft- or Journeyman's examinations. It is still an important possibility for adult workers to gain formal skills and represents an important contribution to the changes in skills needs of the labour market (Bratsberg, Nyen and Raaum 2017; Høst 2008).

1.2.4 Vocational colleges

Adult holders of a trade or journeyman's certificate may pursue further studies at vocational education college. This is considered a tertiary level in the national context. This level of education and training is not part of the higher education system, rather representing an alternative to universities and university colleges. The vocational colleges (EQF 5) are important for developing competence and specialisation in VET. The Norwegian vocational colleges are highly diverse regarding provision, size and quality. Altogether, there are currently 94 vocational colleges, providing education for a broad range of educations and labour market sectors, such as technical and maritime education, health and social work education, finance and administrative education, and creative educations.

Providers at this level offer courses and programmes of 6 months to 2 years duration. Providers design their own courses and curricula, with learning outcomes as an integral part of all programme designs. Programmes must be approved by the Norwegian Agency for Quality Assurance in Education (NOKUT), the agency responsible for accreditation and quality control.

In numbers, the vocational colleges make out a relatively small proportion of the overall Norwegian education system; there were approximately 15 000 students at this level in total in 2016 – compared to approximately 230 000 pupils/apprentices in upper secondary education, and 250 000 students at universities and university colleges (Ministry of Education and Research, 2017). Almost half of the vocational colleges (47 per cent) are private (NOU 2018:15). The public colleges at this level are administered by the county authorities (except for 16 funded directly by the Ministry of Education and Research).

Access to vocational colleges is based on an upper secondary qualification or validated prior learning. No practical work experience is required. However, many programmes, particularly those aimed at the health and social service sector, are designed as part-time courses, where

students are required to work part-time and undertake project assignments at a workplace, often their own. No age restrictions apply. Candidates who have completed a two-year tertiary vocational education and training programme qualify for some engineer educations and some technical educations at higher level.

1.3 The VET programmes selected

In this country report, we include all formal VET programmes. The national curricula cover both formal initial and formal continuous VET. However, we study one VET programme in-depth, i.e., the Office and Administrative worker within the VET programme of Service and Transport.² This is chosen because with the Reform of 1994, Norway expanded its well-functioning system for VET to also cover office work, which has no tradition of apprenticeship training. Thus, this trade represents a crucial test whether the Norwegian VET system can adapt and evolving according to changes. The Office and Administration trade lacks skilled role models and transparent, fixed occupational end points reserved for the skilled service worker. VET for these parts of the labour market is thus at odds with the prime intention and function of apprenticeship, which is to induct newcomers into the skills, knowledge and dispositional approaches of a trade, and to structure access to certain segments of the labour market.

1.4 Formal responsibilities and general social and political context

Norway has a strong economy and welfare system and is among the highest-spending countries in the world where education is concerned (The Norwegian Directorate for Education and Training 2011). Norway has an inclusive education system. Education is free throughout primary and secondary education. Primary and lower secondary school is mandatory for all children aged 6–16, whereas upper secondary school is a statutory right. Primary and lower secondary education is founded on the principle of a unified school that provides equal and adapted education for all students. There are few special schools, and relatively few private schools in Norway. Almost all private schools are approved by the government and are grant-aided.

The unemployment rate is low, and the labour force participation is one of the highest within the European OECD-countries. However, the entry into the workforce is late due to the high level of participation rates in higher education. The country has experienced similar labour market trends to those seen in other developed countries with a shift from industry and construction to services. Since the 1970's, the primary sector has experienced a drop in employment by nearly two thirds and the manufacturing industry by approximately one third. On the other hand, employment in education has doubled, and employment in health and social

² Please see appendix 1 for curriculum

services has quadrupled. The Norwegian industry is dominated by mainly small enterprises: Only 18 per cent employed more than five people (Statistics Norway, 2019).

The nature of the industry combined with the low population density has made it particularly important to maintain the decentralised school structure and an integrated General studies and VET model to provide a broad offer for as many pupils as possible in their local environment. There is a high degree of centralisation both on the labour and employer side, which enables the centralised system of collective bargaining with the government, often drawing the social partners directly into the formulation process of government directives. Employment protection legislation is very strict in a European context and union density is high (The Norwegian Directorate for Education and Training 2008).

The social partners participate actively in the development of VET policies at all administrative levels. The National Council for Vocational Education and Training advises the Ministry of Education on the general framework of the national vocational education and training system. The Advisory Councils for Vocational Education and Training are linked to the nine vocational education programmes provided in upper secondary education; they advise national authorities on the content of VET programmes and future skill needs. The local county vocational training committees advise on quality, provision, career guidance and regional development in VET.³

Currently, Norway witnesses a strong policy interest in the vocational education and training (VET) system to reach several policy objectives related to economic development, productivity, and labour market integration. First, the VET system is intended to provide the labour market with needed skills, and thus contribute to economic development. The projections of supply and demand for labour, conducted by Statistics Norway, show that the trends of increasing demand for workers with a tertiary education and upper secondary vocational education will continue towards 2030. The projections show a high growth in demand for skills within construction (Statistics Norway 2014). Second, the VET system is to provide youth with transparent occupational paths, and access to certain segments of the labour market. Third, another aim is to promote social inclusion. In Norway, unemployment and income inequality remain at comparatively low levels (OECD, 2012), while educational policy emphasises universal access and manifestly aims to counteract inequalities associated with social background (Hegna et al. 2012). Nonetheless, Norwegian researchers have demonstrated a firm impact of class background on life chances, for instance, regarding educational attainment (e.g., Hansen 2010). Generally, education and training are a public responsibility, where equal access to quality education is a fundamental political principle. No school fees apply at any level in the public education system, including higher education. Only a small (though rising) proportion of pupils and students receive private education.

³ <https://www.oecd.org/norway/41506628.pdf>

Apprenticeship as a training model receives widespread political support in Norway; however, it is challenged by external pressures, such as low-cost labour immigration, and ‘academisation’ tendencies in society following great expansion of tertiary education, as well as internal tensions (Nyen & Tønder, 2014). These external pressures affect the VET system in different ways. First, since the EU-enlargement in 2004 and 2007, Norway has experienced great increase in labour immigration, particularly from Poland and Baltic countries, leading to changes in the conditions for VET within the sector of building and construction. Increasingly international labour markets are believed to affect employers’ willingness to invest in apprenticeship training, due to easy access to low-cost foreign labour, which presumably affect the degree to which young people perceive the vocational education system as attractive and suitable as a platform for career progression. Second, the trend that higher education credentials are ascribed higher value in society, implies a potential weakening of the attractiveness of the VET system (Bråthen & Fløtten, 2017; Nyen & Tønder, 2014).

Norway has a long and successful tradition of tripartite cooperation between the authorities, the unions and the employer organisations. Negotiations are carried out through a centralized system of collective bargaining, typical of the Nordic context (The Norwegian Directorate for Education and Training, 2008). There is an overarching advisory tripartite body for VET. For each VET programme, there are also advisory tripartite bodies charged with the task of developing the quality of VET programmes within their field, including proposing changes in national curricula and structure, particularly the curricula for the specific trades (the apprenticeship level). On the level of tertiary vocational education, the social partners are consulted through the National Council for Tertiary Vocational Education established by the Ministry of Education and Research in 2010. This council has less of a formal function than the vocational training councils have at upper secondary level, as the education and training providers at this level design their own programmes. Skills Norway⁴ hosts the secretariat. In addition, two advisory bodies with social partner representatives consult tertiary vocational education, one for technical and maritime education and one for health and social education. The council acts as a coordinating body for the sector and as an advisory body to the Ministry of Education and Research. The council comprises representatives from the education sector, employee and employer organisations and students (SIU, 2016). Lifelong learning is an important principle of Norwegian education policy. Basic skills training and validation of prior learning play a significant part in our adult education policies

Norway has three administrative levels: state level, county level (18) and municipal level (422). It is The Ministry of Education and Research, which has the overall responsibility for national policy development and administration of all levels of education and training, while the counties and municipalities are responsible for developing comprehensive plans and for organising and financing within their jurisdiction (cf. the Education Act of 17 July 1998 no. 61

⁴ <http://www.kompetansenorge.no/English/>

most recently amended on 19 June 2015). The Norwegian education system is governed by national legislation. The Ministry of Education and Research is responsible for all levels of education, including pre-school (for children up to age five). The national government is responsible for formulating education policy and determines the broad contours of the educational frameworks. The Norwegian Directorate for Education and Training is the Ministry of Education and Research's executive agency, and has overall responsibility for supervising education, governing the education sector and implementing Acts of Parliament, regulations and other national policies. Local autonomy is a strong political principle. The municipalities are responsible for primary and lower secondary education, while county authorities are responsible for public upper secondary education and training (SIU, 2016; Tveit, 2014). There is a common national curriculum for primary and secondary education, but within this framework the municipal and county authorities, schools and teachers can influence the implementation of education and training.⁵

Regarding the provision of formal IVET, the upper secondary schools are responsible for the first two years of education and training, while the training companies are responsible for the final two years. However, the county authorities have an overarching responsibility for all aspects of public upper secondary education and training, including apprenticeship training. Despite national regulations, there are great variations related to the kind of VET programmes offered at each school. This is partly due to the pupil foundation (varying with population density throughout Norway), partly due to school traditions, and partly due local labour market conditions.

Regarding the formal CVET, the responsibility for setting up educational programmes within higher education is delegated to the tertiary vocational education institutions themselves. The responsibility for quality assurance of these tertiary vocational schools lies with the Norwegian Agency for Quality Assurance in Education (NOKUT).

Decentralisation of responsibilities and a focus on outcomes are the major elements of the Knowledge Promotion Reform launched in 2006. The curricula, which include guidelines for assessment, leave much room for discretion (Kuczera et al., 2008). How to organise the teaching is considered part of teachers' professional judgement (Karseth & Sivesind, 2010 (in Tveit 2014)).

1.5 How qualifications are being awarded

Pupils' competencies are assessed continuously throughout the four years of education and training, in school by the teacher and in apprenticeship by the training supervisor (formative assessment). In addition, pupils must take formal exams in individual subjects developed at local and county level. Pupils may also be randomly selected to take nationally organised examinations in common core subjects (summative assessment). Thus, the Norwegian system is based on a combination of summative and formative assessment forms.

⁵ https://eacea.ec.europa.eu/national-policies/eurydice/content/norway_en

Most pupils have passed exams in vocational subjects after two and four years of training. After two years in school, pupils take an interdisciplinary local practical exam which covers all the vocational subjects. The pupils are tested on their knowledge throughout the year, and final exams are taken at the end of each year. The examinations can be oral, written or practical in nature.

After two years of apprenticeship training, pupils in upper secondary VET take a practical-theoretical trade- or journeyman's examination. In the exam, candidates demonstrate their vocational skills, and explain and justify the methods chosen to solve the test assignments. Successful candidates are awarded a trade certificate for industrial and service trades, or a journeyman's certificate for traditional crafts. The grading scale on the trade examination ranges from passed with distinction, passed and failed. The two certificates, the trade certificate and the journeyman's certificate have equal status based on similar sets of theoretical knowledge and practical skills.

A county-appointed, trade-specific examination board prepares and assesses the examination based on national curriculum guidelines. The examination boards in each of the 18 counties currently develop examinations separately for craftsman/journeymen certificates (Kuczera et al., 2008). The minimum requirement for being a board member is a formal vocational education. However, it is not necessary to hold the trade certificate within the same trade which the candidate is tested. It is the county authorities that award the certificate. In 2015, 80 per cent of candidates who entered a VET programme in 2011 passed the exam, 6.7 per cent completed their apprenticeship but failed the exam, 12 per cent failed to complete their apprenticeship (skoleporten.udir.no), and 1.3 per cent were still undertaking their apprenticeship.⁶ General upper secondary education uses a grade system from 1 to 6, with 6 meaning 'excellent' and 1 meaning 'unsatisfactory'.

1.6 The relation between general core curriculum and VET curriculum

In Norway, the curriculum is defined as regulations to the education act. The national curriculum⁷ includes subject curricula for the primary and lower secondary stages, curricula for core subjects (subjects studied at the primary, lower and upper secondary stages), as well as programme subject curricula for both general and vocational study programmes at the upper secondary stage. The Ministry of Education and Research sets, and occasionally revises, the curricula for the primary and lower secondary stages and for core subjects. The Directorate for Education and Training is delegated the task of setting, and occasionally revising, the curricula for programme subjects at the upper secondary stage by the Ministry.

⁶ www.skoleporten.no

⁷ <https://www.udir.no/in-english/a-guide-to-curriculum-development/>

Norway has a common core curriculum covering primary, secondary (general studies and VET) and adult education. The national primary and secondary curriculum comprises the following elements: The Core Curriculum, The Quality Framework, Distribution of teaching hours per subject in primary and secondary education, and Subject curricula.

The *Core Curriculum* is a national governing document describing the fundamental values, cultural elements and learning objectives of primary and secondary education. The Core Curriculum is of relevance to anyone responsible for planning and providing education as well as to parents/guardians and wider society. Individual subject curricula are developed in line with the Core Curriculum in such a way that the classroom tuition reflects its core values.

Subject curricula are enshrined as statutory regulations, and they contain mandatory attainment targets describing what is expected of pupils across the country in each subject. Subject curricula contain descriptions of objectives and main subject areas, definitions of core skills, attainment targets and regulations on final assessments. To emphasise the desired continuity, coherence and progression of primary and secondary education, subject curricula have been consolidated for the primary, lower and upper secondary stages wherever possible.

The subject curricula comprise the following elements: Objectives, Main subject areas, Teaching hours, Core skills, Attainment targets, and Assessment.

The objectives describe how tuition in the subject contributes to the broader learning outcomes described in the Education Act, in the Core Curriculum and in the Quality Framework, including the Learning Poster, stating basic principles for the teaching and learning. The objectives provide instruction and direction for tuition in the subject and describe how the subject contributes to the pupils' general development, how it is a stepping stone to further learning, and how it qualifies the pupils for participation in working life and society.

The main subject areas give structure to the subject and the curriculum and guidance on how the tuition could be organised. Most curricula are divided into main subject areas for each year of study.

Each subject curriculum contains a summary of how working on the five *core skills* described in the Knowledge Promotion curriculum, i.e., oral skills, reading, writing, digital skills, and numeracy, should help develop the pupils' overall attainment in the subject and how they form part of this attainment.

The subject curricula describe the level of attainment that the pupils should reach in the subject. *The attainment targets* define what the pupils should master after completing a given year of study. The targets are usually set for the end of Years 2, 4, 7 and 10 of the primary and lower secondary stages. This means that Year 1 and 2 pupils are working towards the attainment targets at the end of Year 2. Attainment targets are set for each year of the upper secondary stage: Years 11, 12 and 13 (Vg1, Vg2 and Vg3). Attainment targets for core skills are integrated into the overall attainment targets specifically for each subject. This means that the skills should be expressed as a natural part of the pupils' attainment in the subject. For this reason, the core skills are described differently and to varying degrees in each subject curriculum depending on how they are integrated

into the subject and on the part that the skills play in the pupils' overall attainment in the subject. Attainment targets are expressed differently for different subjects. Some targets describe how to apply subject knowledge and are expressed using verbs such as create, use and explain. Other attainment targets concern how to develop an insight into the concepts and principles of a subject and are expressed using verbs such as reflect on and understand. The attainment targets give schools the freedom to choose the content of the tuition, organise the tuition and choose their own working methods. The targets do not impose instructions regarding methodology, except in curricula where methodology forms part of the attainment targets for the subject. The basis for assessment in a subject is the combined attainment targets in the subject curriculum.

The subject curricula contain regulations on final assessments in the subject. This includes the scheduling of coursework assessments and exams. The objective of the final assessment is to obtain information about the pupils' attainment after completing their studies in the subject. The basis for the final assessment in a subject is the combined attainment targets in the subject curriculum. The assessment should reflect the degree to which the attainment targets have been met.

Chapter 2. Overview of the transversal key competences in formal VET

In this chapter, we outline the transversal key competences in the formal IVET and CVET system. Currently, there is a comprehensive, on-going state-led process of renewal of the national curriculum and covering the primary and secondary education (general study programmes and vocational programmes).

2.1 Curriculum renewal

The new curricula are to be implemented step wise towards autumn 2020. There is a separate process for the vocational trades, starting autumn 2018. The outcome of this renewal process regarding the status, development, assessment and validation of transversal key competences is now uncertain. One aim of the renewal process is to make the content of the subjects more relevant with more clear priorities, and the coherence between the different subjects is to be improved (The Norwegian Directorate for Education and Training, 2018). Moreover, the renewal process aims at strengthening the development of the pupils' in-depth learning and understanding, with the core value-foundation to be promoted in the subject-specific curricula. Critical thinking and reflection will become an important part of what the pupils are to learn at school. Also, there will be a strengthening of the practical and aesthetic subjects. The pupils should, amongst other, work interdisciplinary with three specific topics; democracy and citizenship, sustainable development and public health issues, and life coping skills.

The comprehensive renewal process was Government-initiated, and the process is divided into three stages: Development of core elements (the most important the pupils are to learn in each subject) (2017-2018), the development of new curriculum (2018-2019), and planning, implementing, and preparation of the schools/teachers for making use of the new curriculum (autumn 2020). The renewal process will keep the today's structure of the subjects. New structure for the vocational educational tracks is to be implemented from 2020/21.

The motivation behind the renewal of the curriculum is partly to make the curricula more relevant to the future needs of the labour market. More specifically, the need for changes is related to on-going and rapid changes in society including changing communication and media technologies, challenges related to sustainable development, demographic changes, both locally and globally, with ethnic, cultural and religious diversity, urbanisation, growth in consumption and a knowledge-based and internationalised working life (Norwegian Official Report 2015:8).

2.2 Four areas of competence

The Government-appointed committee recommended four areas of competence as the basis for renewing the content of school:

- subject-specific competence

- competence in learning
- competence in communicating, interacting and participating
- competence in exploring and creating

This Official Norwegian Report in 2015, was accompanied by an emphasis on metacognition (being able to learn/learning to learn), and being able to problem-solve, explore and create through in-depth learning and progression. These cross-curricular competences should be integrated in the school subjects, and that pupils' learning occurs through working with the subjects (NOU 2015:8, 12).

Taken together, the Official Norwegian Report of 2015 introducing cross-curricular competences such as competences in learning, communicating, interacting and participating, and competences in exploring and creating, and the new principles for the on-going subject renewal process, competences resembling TKC are coming to the fore on the educational agenda in Norway. This is confirmed by policy-makers interviewed in this project. However, the official report and the first part of the renewal process focuses on general education, i.e. not a specific focus on VET. However, currently, one can say that the focus on developing TKC in the formal VET system in Norway is rather poor. At this point, basic skills and the cross-curricular competences mentioned above seem to receive more attention. Moreover, national authorities do not promote, recognise and reward schools which are introducing innovation with regards to teaching methods including teaching TKC.

Chapter 3. Formulation of TKC and their location in curricula

The topic of this chapter is the formulation and placement of TKC in curricula. We start by presenting the historic emphasis on the term 'basic skills', leading up to the use of transversal competences, before outlining how the different TKCs are formulated in curricula.

3.1 TKC in curricula

The key competences; learning to learn, social and civic competences, initiative-taking and entrepreneurship, and cultural awareness and expression, are only indirectly referenced to the NQF descriptors in Norway; the term 'basic skills' is more commonly used instead. The school reform of 2006 covering compulsory and secondary education: The Knowledge Promotion Reform makes out the current curriculum. The curriculum defines five basic skills, i.e., two aspects of literacy (reading and writing), numeracy, digital competence and oral communication. A key part of the Knowledge Promotion Reform is that these basic skills are integrated in all subject specific curricula on all levels. In the case of formal initial and continuous VET each vocational curriculum for each level contains specific goal formulations for each of the five basic skills. These skills are coined 'basic' because they are considered fundamental to all kinds of learning, work, and social life (The Norwegian Directorate for Education and Training 2016). With this reform came a shift to outcome-based learning, new distribution of teaching and training hours per subject, new structure of available choices within education programmes and more freedom at the local level with respect to work methods, teaching materials and the organisation of classroom instruction (The Norwegian Directorate for Education and Training 2008). The key policy document behind the Knowledge Promotion Reform is the Government White Paper No.30 (2003-2004) Culture for Learning. Here, general goals (not specifically related to VET) regarding the five basic skills are listed.

Furthermore, the Knowledge Promotion reform represented a move from an input- to output-orientated policy with more emphasis on measurable outcomes (Skedsmo, 2011a in Tveit 2014). Herein, cross-disciplinary basic skills were among the most significant innovations in the curriculum. Rather than outlining the subject content and classroom activities that teachers were previously responsible for each year, the curriculum now focuses on competence aims that students are expected to achieve by the end of Year 2, 4 and 7 in primary school, by the end of lower secondary school (Year 10), and by the conclusion of subjects in upper secondary school.

The Core Curriculum⁸ covers primary, secondary (general studies and VET) and adult education. A new general curriculum will shortly replace the general part of the curriculum. This document describes the fundamental values, principles for teaching, and cultural elements of the education. Subject-specific curricula are developed in line with the Core Curriculum in such a way

⁸ https://www.udir.no/globalassets/filer/lareplan/generell-del/core_curriculum_english.pdf

that the classroom tuition reflects its core values. The Core Curriculum contains ‘traces’ of skills and competences in line with the transversal key competences as defined by the EU 2006 recommendations, such as formulations about how education is to stimulate and foster creativity, and participation in working life and society.

Additionally, the Core curriculum underscores the importance of key competences in its principal aims:

“The Act aims to develop competence, understanding and responsibility in relation to craft, profession and society; to provide a basis for further education and to assist apprentices in their personal development. Vocational training shall contribute to increased awareness and understanding of basic Christian and humanist values, our national cultural heritage, democratic ideals and scientific thought and method. Vocational training shall promote human equality and equal rights, intellectual freedom and tolerance, ecological understanding and international co-responsibility” (§ 1).

In the following, we outline to which extent, and how the four TKCs are formulated in national and school curricula and in official documents⁹:

Learning to learn: This key competence is embedded in the Core Curriculum; “Education shall not only transmit learning; it shall also provide learners with the ability to acquire and attain new knowledge” (Core Curriculum, p. 15). Moreover, this competence is embedded in the framework for basic skills.¹⁰ The subject ‘vocational specialisation’ which is a subject in the two school-based years of IVET (Vg1 and Vg2) with locally developed curricula, has also contributed to strengthening integration of key competences in the learning process, as the pupils are given the opportunity to define the content of their training. Learning to learn is also emphasised as an important skill in the guidance material to the curricula.

Social and civic competences: These competences are embedded in the Core Curriculum, where it is stated that: “Education should counteract prejudice and discrimination, and foster mutual respect and tolerance between groups with differing modes of life” (Core Curriculum, p. 10), and “Education must convey knowledge about, and foster equal worth and solidarity for those whose skills differ from those of the majority” (Core Curriculum, p. 11). Furthermore, these competences are embedded in the aims in the subject curricula for Social science. Social science is a common core subject in all upper secondary VET programmes. Here, the pupils are to acquire

⁹ The presentation is partly based on The Norwegian Directorate for Education and Training (2016).

¹⁰ https://www.udir.no/contentassets/fd2d6bfbf2364e1c98b73e030119bd38/framework_for_basic_skills.pdf

knowledge related to politics and democracy, society, culture, the working life, and international relations.¹¹

Sense of initiative and entrepreneurship: This TKC is embedded in the following official documents: From idea to value 2003-04, the Government's plan for a comprehensive innovation policy, the 'Strategy for entrepreneurship in the education', 2004-08, White paper No 44 (2008-09), and the 'Plan of action for entrepreneurship in the education – from primary school to higher education', 2009-14. These official documents promote entrepreneurship competence in Norwegian schools, including the upper secondary VET. The first document addresses the importance of developing education institutions that facilitate innovation. The second document stresses entrepreneurship as an important instrument to stimulate learning and increasing motivation, especially students at upper secondary VET. The purpose of the last document is to make entrepreneurship as an educational goal and training strategy clearer. The document discusses whether entrepreneurship can be organised as separate subject or integrated as a method to stimulate learning in different subjects and in basic skills. Furthermore, sense of initiative and entrepreneurship is embedded in the Core Curriculum:

“The foremost aim of education is evolution. Education shall meet children, adolescents and adults on their own terms and so lead them to the borderland where they can encounter the new by opening their minds and testing their skills (Core Curriculum, p. 11).

In addition, creativity, innovation and entrepreneurship are expressed as aims in many subject curricula. 'Vocational specialisation', which is a subject in VET with locally developed curricula, also encourages entrepreneurship through establishing student enterprises.

Cultural awareness and expression: The cultural expression is emphasised in the Core Curriculum and inherent in the competence aims in subject curricula defined in the education act. In the Core Curriculum under the heading Culture heritage and identity, it is stated:

The development of individual identity occurs through becoming familiar with inherited forms of conduct, norms of behavior and modes of expression. Hence education should elaborate and deepen the learners' familiarity with national and local traditions - the domestic history and distinctive features that are our contribution to cultural diversity in the world (Core Curriculum, p. 12).

Education must convey knowledge about other cultures and take advantage of the potential for enrichment that minority groups and Norwegians with another cultural heritage represent. Education should counteract prejudice and discrimination and foster mutual respect and tolerance between groups with differing modes of life (Core Curriculum, p.12).

¹¹ <https://www.udir.no/kl06/SAF1-03/Hele/Kompetansemaal/kompetansemal-etter-vg1-vg2>

3.2 One example: The Office and Administrative worker

To exemplify how the TKCs are embedded in subject-specific curricula, we use the curricula of the in-service training at a training company (Upper secondary level 3 (Vg3)).¹² The Office and Administrative worker is embedded within the VET programme of Service and Transport. The Service and Transport VET programme is one of eight broadly composed vocational programmes. In the first upper secondary year (Vg1), Sales and Office and Administration are grouped together with a range of other service-related trades. The second year (Vg2) comes with further specialisation, with the programme called Sales, Service and Security, qualifying for apprenticeship in three trades, i.e. Sales, Office and Administration, and Security Services. The learning content of Vg1 and Vg2 is divided into three categories. First, there are common core subjects, such as Norwegian language, mathematics and social studies. Second, there are programme-specific subjects divided into three clusters: Planning, Maintenance, and Communication & Service in the first year, and Economy & Administration, Marketing & Sales and Security in the second year. Third, during both these years, there are shorter placement periods in companies ('vocational specialisation'). The two-year apprenticeship period takes place in companies approved by the county and comprises an equal mix of training and productive work. The apprentices are to attain certain learning goals set by the national educational authorities. At the end of their training they complete the apprenticeship by passing the trade certificate examination. All apprentices shall sit for a Trade Examination, which is normally carried out over a period of four working days. The examination committee is trade-specific and tripartite.

Office and administrative workers are employed in the public sector, in libraries and service and information centres, and in private enterprises. There are three main subject areas: office services, IT services, and economy. The key areas of work are¹³:

- service, customer handling and guidance
- written and oral information
- organization and flow of knowledge in document and information management
- purchases, budgets, accounts and payrolls
- office support systems, and systems for administration and case work
- use and maintenance of technological office equipment

The curricula for the craft certificate of the Office and Administrative worker is, in the same way as all other curricula at this level, divided into five sections: Purpose, Structure, Basic skills, Competence aims, and Assessment.

¹² <https://www.udir.no/kl06/KAD3-01?lplang=http://data.udir.no/kl06/eng>. This trade will however be shut down and replaced by a new trade in the new structure of vocational educational tracks from 2020/21.

¹³ <https://www.vilbli.no/en/sq/no/office-and-administrative-worker/y/vgo/v.ss/v.ss3002>

The subject's Purpose section describes the central content or functional area along which lines the subject is structured, and which are the basis of the formulation of the competence aims. These are the cornerstones of the curricula and contain the aims for the student/apprentice. They are formulated to describe what the student/apprentice must master with regard to the knowledge and skills they have developed through work with the subject/profession.

Purpose:

“Office and administrative skills shall lay the foundation for practicing an occupation in dealing with clients, services, and administrative office tasks in the public and private sectors. The subject shall contribute to developing competence in electronic services, rules regarding the protection of personal information and requirements regarding access to information. Furthermore, the subject shall promote competence in how to use technological tools for office work and information processing that can contribute to a purposeful and effective organisation of work.

Learning in the subject shall help the apprentice develop competence in customer service and office administrative tasks. Furthermore, learning in the subject shall help the apprentice develop knowledge of the company's organisation and strategy for communications solutions both internal and external. Learning in the subject shall promote competence in the use of economy systems and understanding of current regulations regarding environment, health and safety.

Learning in the subject shall help the apprentice develop competence in handling change. Learning in the subject shall emphasise the use of the company or agency's digital tools for organising knowledge and sharing information. It shall organise things, so the apprentice can develop practical professional office skills related to one's own place of employment and function at the company or agency”.

As we can see, the purpose of the in-service training is to acquire largely task-specific skills, like handling the economy systems and technological tools. However, in the last paragraph, it is stated that learning shall help the apprentice develop competence in handling change. This is the closest we get to a TKC, comprising elements of the competence of learning to learn. Then the basic skills, which have gained a prominent position in the Norwegian curricula, are integrated into the competence aims for the course in areas where they are to contribute to the development of and are a part of the basic subject competence. Regarding the in-service training for the Office and Administrative worker, one of the five basic skills are for example articulated like this: “*Being able to express oneself orally* in Office and administrative skills involves communicating with clients and users as a part of all services provided” (Subject-specific curriculum for the Office and administrative worker, Vg3).

The competence aims the pupils are supposed to have learned within Office services at the end of the third upper secondary year:

The aims of the training are to enable the apprentice to:

- plan, execute, document and assess administrative and technical office tasks in line with instructions, routines, procedures and existing regulations
- give an account of the company's organisation, strategy and main objectives
- perform customer service by adapting the provided services to clients and users
- use the company's client follow-up system for customer service and service work
- use and evaluate information from manuals and digital information sources for providing services and administrative office work
- profile the company for meetings with clients and users
- work in line with current company rules and ethical norms, and regulations for environment, health and safety
- describe the company's routines for personnel management, and perform basic tasks related to personnel administration
- plan, perform and do quality assurance work in the company's knowledge organisation system and information flow methods
- describe the company's knowledge organisation system
- prepare and organise documents and information in accordance with company guidelines for layouts and use of language
- evaluate changes at work and recommend solutions for improvements
- perform work according to rules and agreements that regulate employment in office and administrative work, and give an account of employer and employee rights and obligations
- perform office and administrative work in an ergonomically correct fashion

The competence aims are detailed, and, task-specific (as contrary to transversal and cross-curricular). As this presentation of the curriculum for the Office and administrative worker, in-service training, upper secondary level 3 has shown is that there are very few traces of TKC. Rather, the competence aims are very task-specific. The five basic skills, namely orals skills, reading, writing, digital skills and numeracy, have gained a far more prominent position in Norway compared to the four TKC as defined by the EU 2006 recommendations.

3.3 Responsibility for the formulation of TKC in the national and school curricula

It is the Directorate for Education and Training which has the responsibility for continuous curricular development in Norway. For this purpose, it makes extensive use of expert groups comprised of both teachers and companies providing upper secondary education. When the need for a new qualification is identified, a tripartite group is set up to design vocational profiles. These form the basis for developing the subject curricula. The Directorate appoints teams for curricular development consisting of professionals (typically proposed by the employer and employee

organisations), and VET teachers. Within three months, the team submits a preliminary version of the curricula to the Directorate. With support from representatives from the sector, the quality of the curricula is assured by the Directorate. Depending on the subject, the curricula are finally set by the Ministry of Education and Research or the Directorate. Before the process of developing new curricula in 2011, the Directorate issued a Guide to Curriculum Development.¹⁴ This document provides a set of general guidelines and should be used as a tool and point of reference when developing subject curricula, including regulations on final assessments.

Additionally, the Directorate has developed a follow-up system for curricula. The purpose is to obtain a more systematic overview of the situation for the curricula, and that the system should contribute to making administration of the curricula more systematic, knowledge-based and predictable. This system entails reviewing, compiling and analysing different sources that provides central educational authorities of how the curricula are functioning. The sources of such information include studies, enquiries, evaluation reports and statistics. The knowledge gained is intended to provide the Directorate with a basis for initiating the necessary and adequate measures for strengthening implementation of the curricula. These measures can support and inform VET providers when adjusting the curricula.

3.4 Other transversal competences formulated in the national curricula

As we have seen, Norway addresses the four TKC as defined by the EU Recommendations indirectly and vaguely, most pronounced in the general Core Curriculum, which has no direct connection to any form of actual assessment in the formal initial and continuous VET system. Rather, Norway emphasises basic skills, i.e., oral skills, reading, writing, digital skills and numeracy. Moreover, in the on-going subject renewal process, three broadly defined cross-curricular topics/competences have been put forward, i.e., i) democracy and citizenship, ii) sustainable development and public health issues, and iii) life coping skills.

Relation to the NQF

Norway has established a national qualifications framework for lifelong learning, which gives an overview of the Norwegian educational system and its levels of qualifications. Efforts to link the Norwegian education system to the European Qualifications Framework (EQF) will be completed in the coming years, enabling a comparison of Norwegian qualifications to those of other European countries. The Norwegian qualifications framework has 7 levels. All levels are defined in terms of learning outcomes in the categories of knowledge, skills and general competences. The qualifications vary from those obtained at the end of primary and lower secondary education (level 2) to the doctorate (level 8). The three highest levels correspond to higher education levels as defined within the European Higher Education Area. Norway has no qualifications at level 1.¹⁵

¹⁴ <https://www.udir.no/in-english/a-guide-to-curriculum-development/>

¹⁵ https://www.nokut.no/siteassets/nkr/20140606_norwegian_qualifications_framework.pdf

Only formally approved study programmes were included in the Norwegian qualification framework at the time of adoption. Therefore, the right to have the EQF level included on diplomas only applies to these programmes. Competence achieved in non-formal and informal learning arenas, such as competence achieved through courses provided by an adult learning association, distance learning, in-house training and other competence achieved through employment, is not directly placed in the framework. This type of competence must be assessed in relation to formal subject curricula, programme descriptions etc. to achieve qualifications included in the framework. The current qualifications framework is neither detailed enough nor subject-specific enough to relate competence acquired through work or in the third sector directly to the framework. Therefore, it is not possible to establish a direct link between individuals' prior learning and a general qualifications framework. On the other hand, competence acquired by the individual can be linked to the framework through recognition of prior learning. However, key competences as defined by the EU 2018 recommendations are only indirectly referenced to the NQF descriptors in Norway; the term 'basic skills' is more commonly used instead.

A tabular presentation of the Norwegian Qualifications Framework (NQF), *Completed upper secondary vocational education – Subject-related skills and vocational competence* is presented below.

Table. 2 Presentation of the Norwegian Qualifications Framework (NQF).¹⁶

Level/typical education	KNOWLEDGE: An understanding of theories, facts, principles, procedures in subject areas and/or occupations	SKILLS: The ability to utilise knowledge to solve problems or tasks (cognitive, practical, creative and communication skills)	GENERAL COMPETENCE: The ability to utilise knowledge and skills in an independent manner in different situations
Level 4A: Completed upper secondary vocational education – Subject-related skills and vocational competence	<p>The candidate...</p> <ul style="list-style-type: none"> • has knowledge of relevant concepts, models and principles in the subject area • has knowledge of, and has an overview of materials, equipment and work methods, and can give reasons for his/her choices • has the experience-based knowledge required to practise in the vocational field • has insight into the importance and historical development 	<p>The candidate...</p> <ul style="list-style-type: none"> • can systematise, present and report on planned and completed work • can carry out calculations and assess consequences • can solve vocational challenges in a critical and creative manner, alone or in cooperation with others • can use relevant concepts, principles, materials and equipment in his/her work • can communicate in at least one foreign 	<p>The candidate....</p> <ul style="list-style-type: none"> • can use his/her own vocational competence in new and complex contexts • can work independently and take responsibility for ensuring that work is carried out with the required craftsmanship and in accordance with legislation, regulations and established ethical standards in the trade/field in question • can cooperate and communicate with colleagues, customers

¹⁶ https://www.nokut.no/siteassets/nkr/20140606_norwegian_qualifications_framework.pdf, p. 21-22

	<p>of the trade/occupation in a societal perspective</p> <ul style="list-style-type: none"> • has knowledge of relevant regulations, standards, agreements and quality requirements • has knowledge of different learning strategies and can utilise them in his/her own learning • has an understanding of his/her own educational and work opportunities 	<p>language</p> <ul style="list-style-type: none"> • can assess and choose work methods for solving subject-specific tasks • can be creative when planning and performing work • can carry out work in accordance with the applicable regulations, standards, agreements and quality requirements • can analyse and assess different types of sources of relevance to his/her work 	<p>and/or users when carrying out his/her work</p> <ul style="list-style-type: none"> • can guide others in their work • can document and assess others' work and own work in connection with planning, organising, work performance and results • can reflect on his/her own vocational competence as the basis for future choices • can initiate tasks and activities that promote his/her own learning and development
--	---	--	---

Chapter 4. Assessment and validation of TKC

4.1 How is the process of assessment organized in the national system?

The basis for assessment in subjects consists of all the competence aims in the subject curricula. The pupils must attend and participate actively in the lessons provided so that the teacher has a basis on which to assess one's competence in the subject. The pupils will not be given a half-year assessment or a final assessment if they have absence of more than 10 per cent of the hours the subject has been taught. However, pupils may all the same have an assessment with grades if they are able to document that the limit for absence has been exceeded due to health and welfare reasons etc (Andresen et al. 2017).¹⁷

When assessing subjects, a grade scale of 1–6 is used. To pass a subject, one normally needs to achieve the grade of 2 or better. The grades express the following:

- 1 – very poor competence in the subject
- 2 – poor competence in the subject
- 3 – quite good competence in the subject
- 4 – good competence in the subject
- 5 – very good competence in the subject
- 6 – excellent competence in the subject

4.2 Periodic assessment

Periodic assessment is intended to promote learning and provide the pupils with the opportunity to improve their competence throughout the whole of the course of teaching in the subject. Periodic assessment shall:

- be used as a tool in the learning process
- provide a foundation for adapted education
- help the pupils develop their competence in subjects

Periodic assessment is to be provided continuously and systematically by the responsible teacher and may be given both in writing and orally. The periodic assessment is to provide explained information about ones' competence and guidance as to how the pupils can improve their competence in the subject.

¹⁷ <https://www.vilbli.no/en/en/no/vurdering-i-fag/a/025427>

4.3 Half-year assessment

Half-year assessment with and without grades is part of the periodic assessment and is to show the pupils' competence relative to the competence aims in the subject curriculum for this subject and give guidance as to how one can increase ones' competence. There shall be written and/or oral half-year assessment without grades throughout the entire education.

Half-year assessment with grades shall be provided in the middle of the course at every level. In common core subjects, half-year assessment with grades is also provided at the end of the teaching year if the subject is not completed. Half-year assessment with grades is to be given in writing and expresses the competence the pupil has achieved in relation to what is expected at the time of the assessment.

4.4 Self-assessment

The pupils must take active part in assessing their own effort in the subjects, ones' own competence and academic development. The objective is that one is to reflect over and become aware of ones' own learning. Such self-assessment is part of the periodic assessment.

4.5 Final assessment

Final assessment, which consists of overall achievement grades and examination grades, provides information about the pupil's goal achievements at the end of the education and training. Overall achievement grades and examination grades are to be entered in the certificate. The competence demonstrated throughout the education and training is part of the basis for assessment when deciding the overall achievement grade in the subjects. The overall achievement grade is to be based on a broad basis for assessment which in total is intended to express the competence in the subject. One has the opportunity to improve the competence until the overall achievement grade has been decided. One also has the right to be informed about which factors have been emphasised when deciding the grades.

Regulations concerning the Education Act provide special regulations for examinations. To complete a VET qualification, one must pass a practical and theoretical trade- or journeyman's exam.

Before 2000, Norwegian schools were characterized by a variety of approaches to assessment and evaluation. The municipalities were responsible for developing quality assurance for their schools, but since only half of the counties managed to do this, a stronger national approach was implemented to ensure all children in Norway a proper education (The Ministry of Education and Research 2002). Before 2000, mapping tests had been used for diagnostic purposes in reading, but national tests in Norway were not introduced until 2004, when Reading (Norwegian) and Mathematics in Years 4 and 10, and English reading in Year 10 were introduced. In 2005, national tests were introduced for Year 7 and the first year of Upper Secondary School

and included writing tests in Norwegian and English. At the end of Year 10, pupils are marked in 13 subjects by the respective subject teachers, a system based on a numerical scale with marks from 1 (very low competence in the subject) to 6 (excellent competence in the subject). Based upon these grades, each student receives an overall score representing their results (Hopfenbeck et al., 2013).

After the release of the PISA 2001 results, the Ministry of Education launched a report called *The School Knows Best*. In the introduction, the Minister of Education stated: “If we are supposed to improve our achievements, we need to change the way we are steering our schools” (The Ministry of Education and Research 2002). The development of a national quality assurance system first took off after the release of the PISA results in 2001.

Norway has initiated a national assessment programme; the programme *Assessment for Learning (AfL)* was implemented during the period 2010-2014 and continued into 2017. The overriding aim of this programme was to help school owners (local and county authorities), schools and apprenticeship companies to develop an assessment culture and assessment practice where learning is the focus. This is done by raising teachers and trainers’ competence on assessing learning and improving their understanding of assessment as a learning tool. In 2013 the programme was evaluated. The study showed among other things that the head of schools have a vital role in the efforts of creating a culture of assessment that underpins good assessment practice (The Norwegian Directorate for Education and Training, 2016b).

4.6 Which TKC competences are being assessed?

Currently, the TKCs are not integrated as competence aims in the subject-specific curriculum. This means that they are not being formally assessed. However, pupils are given grades for orderliness and behaviour/ order and conduct - given as follows: Good, Fair and Poor.

There are laws and regulations regarding validation of non-formal and informal learning for each level of education and training in Norway. Career guidance centres in the counties, provide career guidance to adults, and support the provision of validation. The Norwegian arrangements are based on shared principles across all sectors. One of these principles is that the validation process should be voluntary and of benefit to the individual. Nevertheless, while participation in validation is voluntary, the legal framework guarantees the rights of individuals to undertake a validation process. However, this does not necessarily work ‘in real life’.

Validation of prior learning is clearly defined in the education sector, where it is used as a specific term in laws, regulations and guidelines. In the validation system of the education sector in Norway, prior learning includes formal, non-formal and informal learning, even though formal learning is not a subject of assessment in the actual assessment phase. In Norway, formal learning is viewed as a part of a person’s total competences and therefore included in the term prior learning. Validation is developed from a national perspective as it is regulated by national laws in the education sectors. National regulations and guidelines set up general frames for local provision

of validation in the counties or in the higher education institutions. The responsibility for the local provision in primary, lower and upper secondary education is decentralised to county education administrations. Other national regulations and guidelines apply to post-secondary VET colleges and institutions in higher education where each learning institution has more autonomy in defining validation procedures.

The Norwegian validation system is established in the formal education sector. As validation is regulated by law, it is a visible part of national strategies and arrangements. The institution, Competence Norway has the overall national responsibility for following up cross-sectoral challenges linked to validation of prior learning (Alfsen 2016).

Different methods and tools for mapping, assessing and documenting competences and skills have been developed in the educational sector, the working life sector and the third sector (study associations, distant learning institutions, NGOs, folk high schools and voluntary work). Efforts have been made to build bridges between the different learning arenas, and to promote a better understanding of the concept of “equivalent competence” (equal in value). Despite this effort, a challenge to find documentation methods that has credibility and legitimacy both in the workplace and the education system persists (The Norwegian Directorate for Education and Training 2008).

The aforementioned Experience-based route allows adults who can document long, varied and relevant work experience to register for the vocational trade examination. They typically have to take a shorter theoretical course in advance. The system of validation of non-formal and informal learning in Norway does thus not allow for people to obtain formal VET qualifications by validation of non-formal and informal learning procedures alone. One area which has been pointed out for further work in Norway is to find ways of validating the ‘soft’ skills and competences acquired through non-formal adult learning in the third sector, to recognise learners’ achievements in this sphere in a similar way to the validation offered in relation to formal curricula (Alfsen, 2016).

At upper secondary level the following methods have been developed for validation of non-formal and informal learning in respect to the requirements stipulated in the national curricula:

- (i) *Dialogue-based method:* The dialogue-based method is based on discussions between assessor/specialist and the adult. The specialist focuses on the knowledge and experience of each individual and attends to specific problems and queries in the curriculum. The assessor/specialist can use a computerised or manual tool based on the curriculum in question. This method requires individual preparation and a one-to-one meeting. The dialogue-based method can be combined with portfolio assessment, self-assessment and testing. This has been tested out on a large number of candidates.

- (ii) *Assessment of portfolio*: Assessment based on a portfolio is a method based on written documentation, photos, etc. The candidate sends a “charting” form to a “service centre” together with certificates and reports. Modules and subjects are approved on the basis of the documentation submitted, and additional education is offered so that individuals can acquire the desired certificates. This method demands good written documentation of individuals’ own skills and does not require one-to-one meetings. Undocumented and tacit knowledge is difficult to reveal. After admission to upper secondary education, a discussion takes place to arrange the course according to actual knowledge and skills.
- (iii) *Vocational “testing”*: Vocational testing starts off with an interview, where the background, training, work experience, language skills and objective of the adult are charted. After the first general interview a professional specialist interviews the individual in the particular subject, after which the individual shows the abilities in practice, so that both the theoretical and the practical side of the trade is assessed. Working on the basis of this practice, the adult may be offered either additional education to bring him or her up to a Craft or Journeyman’s certificate level or public certificate useful for job seeking. This method complements other methods in that the assessment of non-formal learning is also possible, and where required, parts or all the practical side of the vocational subjects can be approved (The Norwegian Directorate for Education and Training 2008).

Chapter 5. Opinions of key stakeholders and teachers

What are the opinions of key stakeholders in Norway regarding development, assessment and validation of TKC? In the previous sections we gave an account of the configuration of the education system in Norway, describing the changes that are taking place while we are writing this report. These changes concern primarily the educational institutions, where TKC is now on the agenda and being discussed in connection with the overhaul of subjects and thereby talks about new curricula. But significant changes are under way in the workplace as well. In 2016, the Confederation of Norwegian Enterprise (Næringslivets hovedorganisasjon – NHO) put “learning-life” on the agenda, and there has been constant awareness of CVET, something that in particular has directed attention towards “learning to learn”. The fact that working life plays a major role can be expressed in numbers, insofar as the average age of a recipient of a trade certificate was 28 in 2012 (Bratsberg, Nyen & Raalum, 2017). However, it is not age but experience gained through work that is crucial for the opportunity to get a trade certificate.

That changes are ongoing is crucial to how the issues are perceived and discussed in Norway. It means that key stakeholders are challenged to form an opinion about a “moving target”. The downside is that they may to some extent show an interest in different issues. At the same time, it is an advantage that the issue is experienced to be of relevance. But as we will see, the most tangible response is that many are uncertain and prefer to await progress before they make up their minds. The issue is not new, however. The so-called Quality Committee (Kvalitetsutvalget – NOU 2003:16) called for a strengthening of basic skills, deemed essential to participation in the knowledge society. This was later discussed and substantiated in White Paper no. 30 (2003-2004), where the importance of education was stressed: “completely necessary conditions for learning and growth at school, in the workplace and in social life. They are independent of subjects, but the subjects are suited to the development of such skills to varying degrees”, the White Paper advised. This brings us to the issue we will be discussing in this chapter.

Before we reveal the interviewees’ evaluation of TKC, we’ll add more about the data and method before reviewing IVET and CVET and noting employers’ opinions of the competencies or skills they consider important.

5.1 What are the most important TKCs in IVET and CVET?

What do key stakeholders think are the central TKCs in IVET and CVET respectively? The most important institution is the Norwegian Directorate for Education and Training (Utdanningsdirektoratet). While designing the new curricula, certain key parts are already set down. Competence in the curriculum is defined:

Competence is to acquire and apply knowledge and skills to overcome challenges and solve problems in familiar and unfamiliar circumstances and situations. Competence implies understanding and an ability to reflect and think critically.

A crucial formulation is “solve problems in familiar and unfamiliar circumstances and situations”. It is here the justification of TKC lies. There are competencies that crisscross the subjects. The new curricula are intended to facilitate what is referred to as deep learning in Norway. This is not a new term, but it is about pupils and trainees having to understand the most basic aspects of the subjects. That is, they should be able to see connections between subjects, subject areas and accepted principles and values: attitudes, judgement, reflective ability, critical thinking, ethical assessment.

At the same time there are traces of priorities that can be linked to the issue dealt with in this chapter. “Learning to learn”, as already mentioned, is highlighted as crucial knowledge. It covers both the development of learning strategies and the ability to reflect over one’s own learning. A teacher was clear on this point. Learning was a central part of his approach to teaching:

I focus a lot on what it means to learn. It’s about how to acquire knowledge and skills and reflect over them.

Several of the teachers we interviewed expressed similar thoughts. But the teachers were uncertain at the same time, not least about how they best could and should teach.

To learn is a core competence, in all subjects. To me, learning is mega important. It’s a lot about getting to know the students and how they learn. Everyone needs to learn in their own way – and we have to make them aware of their strategies.

Consequently, there is little doubt that learning to learn is considered the most important goal. In this way, it makes sense to conclude that teachers are acting very largely in accordance with The Norwegian Directorate for Education and Training’s politics, as we have already mentioned, i.e. Norwegian Directorate for Education and Training’s emphasis of the importance of learning to learn and, not least, reflecting on one’s own learning.

One possible interpretation is that teachers agree with Norwegian Directorate for Education and Training’s evaluation. But it is also possible that teachers have been influenced by Norwegian Directorate for Education and Training. A more reasonable interpretation is that Norwegian Directorate for Education and Training’s line in this area reflects the importance of learning. If we see this in light of extrapolations about the future labour market, where a range of jobs are likely to disappear as new technology takes over, this is a reasonable interpretation. Put differently, we do not know what people are going to work on, so it’s hard to set precise competence objectives. But undertaking source criticism, learning to learn, and processing information are things it is reasonable to suppose people will have a need for.

In relation to the other competence objectives, the teachers we interviewed were far more uncertain. To some extent, the varying answers reflected differences between subjects and the challenges they face. A healthcare and childhood teacher, for example, was very concerned about

social skills and cultural awareness. In practice, it was about working with people. Future healthcare workers must at least be able to deal with people from different cultures and backgrounds. A crucial question is how they will be able to provide equal health care. It's not about universal schemes, but that the schemes are communicated in ways that ensure that patients and users can obtain customized and thereby equal healthcare. This requires a lot of people's ability to communicate and empathize.

When we asked teachers of electronics about the same thing, they were, unsurprisingly, much less willing to attest to the usefulness of social and communication skills. At the same time, there are developments in several areas. One example is in automotive mechanics, where they used to stay inside the workshop most of the time, but in response to new technology are expected to have face-to-face contact with customers (Andersen & Aspøy, 2015).

We also asked the teachers how they teach TKCs. Our overall impression is that the teachers were not particularly aware of their own learning in this area. If there were no clear competence objectives, it was not easy to helm a teaching programme, it was said.

I look at it a bit here and there. Feels like these are topics we work on, but I can't say I think much about it on an everyday basis.

Another interviewee put it like this:

I don't know. It sort of evaporates in the face of other issues. There's always something that's more important, even though I agree that it's crucial to the school's social responsibility.

By making explicit reference to the school's social responsibility, this interviewee showed himself to be in remarkable agreement with established politicians. In concrete terms, we refer to a seminar at Fafo, where we invited three former ministers responsible for education. Despite representing different political parties and advocating different policy mechanisms, they all agreed that the school's purpose is to create good citizens, i.e., "useful people". In practice, this means that the purpose of education is largely to train skills located at the fringes for what it is possible to formulate, assessment and use for comparing and grading the students.

It is also in line with the employers' assessments of jobseekers. They often distinguish between person-job-fit and person-organizational-fit, where one is about performing a task based on given professional standards, while organizational-fit refers to a future employee's ability to get along with their fellow workers. The interesting thing is that while the former is at the individual level, the latter is largely at the group level. Important properties of a team are communication and complementary competencies, which are relative quantities. In addition, it is important here to distinguish between formal and social skills. When writing about CVET, it is crucial to emphasize the workplace as an important learning arena. Not only the informal type of learning, but also formal learning. This takes place through close ties between businesses and educational

institutions. At the same time, learning in the workplace also consists of more informal elements, typically social skills. With reference to Norwegian Directorate for Education and Training's definition of competence, both forms are thus important.

In terms of informal or social skills, it is much harder to assess achievements. In our interviews, stakeholders and teachers told us how difficult it is to assess these skills and wondered if it made sense at all to assess social skills with the precision necessary to allow comparison between pupils. In this assessment, stakeholders and teachers are largely in line with a type of knowledge that is well established and uncontroversial among employers. "Personal suitability is something you know whether a candidate has, but it's difficult to put into words."

Having said that, adult learning and the formal and informal skills one can and must acquire in the workplace are of great value. And to some extent, it is just this type of TKC. But when we ask an employer about what he thinks about training programmes to learn TKC, he responds quickly:

This is one type of knowledge you learn in the school of life – and it must be both general and specific. That's why it's best if it happens in the firms.

The fact that TKC has both general and very specific aspects is very interesting. It's transverse, but maybe more, it's also general. The distance from being in all subjects to being in practice in no subjects may be short. But given that it is so relational, perhaps the most obvious thing is to see TKC in connection with the workplace as a learning arena.

At the same time, it makes sense here to emphasize the significant changes that are ongoing in the workplace, something some of the interviewees were concerned about. Firstly, because it can be understood as an argument in favour of the usefulness of learning more generally (as we touched upon previously). The second argument highlighted by the interviewees is that if there's something we do know, it's the usefulness of digital skills. A form of knowledge it is believed will be crucial in many professions looking ahead.

Regarding digitalization, it is often called a quiet revolution. It is partly about opportunities in the classroom. A particularly important issue is how the use of VET simulators opens for completely new opportunities for creating realistic teaching situations. In this way, schools can come a lot closer to mirroring what the students are doing in the classroom and later as practitioners. At the same time, the digital revolution obliges both pupils and teachers to take advantage of the possibilities.

5.2 Are there twenty-first century competencies that are missing in TKC?

The follow-up question is whether any types of TKC are missing in Norway – a subject stakeholders and teachers think deserves greater attention. As the interviews revealed, teachers

operated largely in view of the competence objectives and challenges associated with planning and teaching and then to assess and rate the students' performances.

Regarding what teachers and stakeholders identify as competencies missing, it is relevant to point the attention to a national campaign which was launched during the winter of 2018. This petition was a counter-argument against the Ministry of Education and Research, which had removed sustainable development from the TKC. The petition states that "the interdisciplinary themes reflect the great societal challenges of our time". More interesting is that the Ministry of Education and Research who originally had advised that TKC should be included as a part of all subjects, has made a clarification telling that TKC should not be integrated into all subjects, but only when they are relevant. The final statement of the petition goes like this:

"Give us the interdisciplinary topics back in all subjects, in accordance with the Parliamentary Report 28 (2015-2016) and in line with societal challenges the young people need expertise to meet" (UN association at Mette Bjerkaas, who is the contact person for the campaign)

However, when we interviewed key stakeholders, it became clear that issues other than those being discussed at the moment merited attention. Of equal interest are probably the reasons offered. One of the interviewees pointed to two main elements:

All subjects need grammar. This is a type of competence we think is limited to language, but in practice it's completely essential to practice in all subjects.

Another theme was taken from mathematics:

Pythagoras's doctrine is crucial. In practice, this simple doctrine says something about finding an unknown quantity and the relationship between different quantities.

When we replied that the use of the doctrine was largely limited to the construction industry, this interviewee quickly switched to what we refer to as Type 1 and Type 2 errors.

All subjects have basic assumptions about the possibility of rejecting a correct hypothesis (Type 1 error) or accepting an incorrect hypothesis (Type 2 Error). This is fundamental in all science, and in all thinking, but it has slightly different names.

The interesting thing is that while stakeholders can accentuate the virtue of certain types of transverse knowledge students should learn, i.e., that this is the way things are, based on what the last interviewee said, it is also probably worth making out patterns or logics found in all subjects, but which are given different labels.

One factor worth mentioning here is that this interviewee pointed to very specific circumstances. More than remaining on a general level, such as learning to learn, social skills, democratic skills, etc. – the competencies mentioned in the interview are very concrete. The

problem is not that students don't know about Pythagoras, but that they are not taught that this type of knowledge is transverse. Put bluntly, a critical shortcoming, one can say, is not linked to the topics the students learn, but that they do not learn that the topics are transverse. In this sense, students believe topics are isolated, while they are basically transverse.

That said, certain issues were shown to have become much more important today than they were before. One such subject is associated with social competence. One of the interviewees believed one should go further

Many of today's young people want jobs where they can meet and interface with customers or users. They need to practice their social skills, but even more they need to learn how to communicate verbally. How to explain something complicated in a simple way. That's something I think they should learn more about.

This is type of input is very down to earth. It is consistent with the example of the car repair shop we mentioned above. Car mechanics today often deal with customers directly. They therefore need to communicate and instil in customers trust and confidence in the workshop.

In the interviews with the teachers, there were few clear ideas, as already mentioned, of what was lacking.

Well, I think the competencies are quite good. If there were something, it would have to be more humanity or empathy.

The teachers were possibly more interested in how the interdisciplinary approach could be incorporated in their teaching. Something several highlighted was the importance of visiting outside institutions and businesses. It would illustrate more of the complexity and how different elements interconnect and join subjects together.

Trying to draw on some of the interdisciplinary aspects externally. Visiting the world outside. Seeing it from beyond the classroom. Or let people come to us. For example, we took up organ donation.

In the ensuing conversation with this teacher, the most crucial factor, it emerged, is to learn more about how theoretical learning can be translated into practical knowledge and vice versa – that practical experience can be of more general interest.

5.3 Are the TKCs sufficiently developed in the official national VET system?

One issue causing uncertainty among the interviewees was the question of the developmental stage of TKCs within today's VET. An uncertainty that is not that surprising given that TKC is largely an aspect of the general curriculum, which is currently being transformed into a new general curriculum, scheduled to come into force in 2020-2022. And not only is there a general curriculum

in the pipeline. The Lied Committee, an appointed committee of experts which started working on September 1, 2017, is due to submit a white paper in December 2018 (NOU 2018:15) describing the strengths and weaknesses of today's upper secondary education, while making proposals the following year on changes regarding structure and organization, along with the balance of subjects in tomorrow's upper secondary education.

A key element of the ongoing work is therefore the drafting of new curricula. When we asked about existing curricula, the interviewees were strikingly consistent:

Formulations concerning key competencies in the curricula – for both young and adult students – are few and far between, and they are not particularly strong.

In the discussion about TKC in the curricula, one can discern a distinction between the need to *specialize* competencies, which points to professional standards, on the one hand, and *breadth*, and the need to sponsor conversion skills, on the other. In discussions about breadth vs. specialisation, TKC, one may assume, is primarily related to breadth, and thus conversion skills. This distinction is relevant in discussions of VET. As one of the interviewees pointed out:

Conversion skills are far more important in professional and vocational education than in many other vocational skills.

It was also pointed out that TKC could give a boost to VET's reputation.

Focus on transverse competencies can improve the reputation of vocational education, because vocational education appears to be broader, see the European Alliance for Better Apprenticeship.

At the same time, many subjects are undergoing change. A discussion is focused on how TKC should be anchored in the educational system and/or the workplace, respectively.

There are two views: one should either be humble in how one teaches and, in any case, assesses social and emotional skills. A good teacher will teach this [to their students] in good ways anyway. Based on this perspective, one has a negative attitude to measuring, weighing and grading everything. Or you should develop competencies that are needed in the workplace.

The fact that the actors and interviewees hold different positions on these views is probably not surprising given that Norway is currently amid discussing future curricular. Some of the concern is, even though everyone agrees that TKC is important, that it is difficult to prioritize these competencies in the final curricula. What will end up at the back of the queue, the interviewees often asked. The question is not whether TKC is important in VET, but whether it is correct that it is so important that it takes up space from something else. An interviewee put it like this:

I do believe transverse skills will get a lot of space, but I'm worried about how to develop/measure, especially social and emotional competencies.

In extension of this discussion we were presented with what may seem to be a dilemma: in order for TKC to be acknowledged as important in practice, it must be measurable, but if TKC is laid down in curricula in ways that make it measurable, it loses its importance as TKC. This means that it requires a reduction of TKC – a type of operationalization – which appears to stand in contrast to the idea of TKC.

Reasons attached to this perception were tied to established experiences:

Norway is good at several of the transverse skills already. For example, we do very well on democracy competence scores in PISA. The remaining question is how we can and should make it more widely known.

Based on what our interviewees said, it makes sense to draw the following conclusion. TKC is not sufficiently developed in the formal VET system. There are some important clarifications that need to be done before this can happen, and some of these clarifications are being addressed as work progresses. An important question in this work is how to determine the balance between curricula for the individual subject and the wider curriculum. The advantage of the general curriculum is that it is by definition transversal at the same time as its value can be limited because it is difficult to assess TKC and it is seen as if it is at the expense of the more specialist vocational skills.

5.4 Assessment of TKC

One last issue is therefore whether and how TKC can be assessed. In general, it is natural to conclude that evaluation – validation and assessment – is important in itself. But that it is also decisive because assessments help increases the importance of topics and subjects.

One interviewee put it frankly:

An issue or topic in which pupils are never tested or assessed will in practice not be included among the relevant competence objectives.

This distinction between relevant and non-relevant competence objectives is important. It may seem that relevance is tied to whether performance can be assessed.

However, in our conversations, concerns related to the ability to measure a topic were a recurring feature. Several asked – also rhetorically – whether measuring TKC is sensible anyway given what is billed as TKC, where it is difficult to grade and thereby compare achievements.

Legal practitioners have been drawn into the work. They have questioned the importance of highlighting the necessity of being able to assess and evaluate the curriculum's objectives. But does assessment make any sense in many of the key competencies?

Another interviewee referred to more normative assessments in this discussion, pointing out that it may not be desirable to develop a measuring device that's able to assess TKC in a good enough way.

The introduction of transverse skills can be OK if they're rather vague and something we can stretch after, but I'm worried about an instrumentalist approach by dividing and measuring.

To which was added:

We are pretty sceptical about the connection to the NQF (National Qualifications Framework)

The talks with key interviewees – whether they were policy makers or teachers – were striking because their assessments were so similar. There seems to be a fundamental choice between upholding TKC relative to its ideals, ideals which as they are now would be so vague as to be more normative than directly measurable. This would preserve the essential aspect of the theory but could easily disappear in practice. If you go the opposite way and reduce or simplify TKC in ways that make it measurable, TKC may end up relinquishing relevance – and measuring it won't be so important either. This is a classic dilemma where you're damned if you do and damned if you don't.

A teacher put it concisely:

I think that, for me, TKC is quite indirect. I try to take it in, when I think about it, but strictly speaking, I don't think much about it while teaching on a daily basis. It's something I may do when I'm planning lessons.

And that there is such a distinction between direct and indirect relevance is not entirely unlikely. And if it is correct that TKC for many is something they teach more indirectly, it is perhaps not surprising if it is difficult to assess.

Having said that, there may at the same time be significant differences between different subjects. Both in terms of TKC, considered as relevant, and how lessons can be organized. It is obvious that some subjects will benefit a great deal from digital skills, while social skills are crucial to others. In health subjects, there's an emphasis on the need for social competence, but also cultural competence. The latter is linked to the development of a more global world. One teacher put it like this:

Working as a health worker in tomorrow's world will require social and cultural skills. You will have to be able to communicate with different people and understand more than what they say. What they mean and how they perceive different situations.

At the end of the day, it is about ensuring high quality treatment of patients who have equal rights, and who shall receive equal healthcare services. This is an important principle in a democratic society. It is therefore very interesting when this teacher points to just this as an important condition for working as a healthcare worker.

The topic above is highly relevant to a discussion of how TKC can and should be assessed. Based on the views presented, it is important to point out that TKC cannot be assessed in the same way as in VET. Different competencies mean different things in the subjects. This was also articulated by a key stakeholder:

We must discuss and question each of the four areas separately. The issues related to assessment and content are completely different, for example, in connection with social competence and digital competence, and the distinction between internal and external factors. Internal factors are about delimitation and assessment, while external factors are about how society would appreciate a kind of competence. Including employers (employability) and whether it may affect reputations.

We have earlier mentioned in this chapter employers and the distinction they draw between person-organization-fit and person-job-fit. That is, fitting in vs. suitability to perform a job. While the former relies largely on social skills, the latter relies on formal qualifications. Because employers distinguish between what is commonly referred to as “personal fitness”, which is a type of competence that can neither be assessed nor used for direct comparison between applicants. Being suited to a job is the opposite in that it refers to formal competence. These are skills that can be assessed to a greater extent and therefore used to compare and rank jobseekers.

There are two reasons why it is interesting to connect this to a discussion of TKC. The first reason is that the skills the students acquire should be used to signal fitness to future employers. The second is related to how employers view and weigh skills, which are closely linked to TKC. They use their gut feeling, which is based on non-transparent criteria. These are assessment criteria whose use in schools can hardly be accepted.

Chapter 6. Recommendations

The main aim of this chapter is to provide recommendations based on the previous findings. We will highlight some aspects of the educational system, which seems important in order to facilitate change with regard to implement TKC.

The situation in Norway, where new curricula are to be applied, makes it timely, but difficult to make clear recommendations. On the one hand it is too early, on the other hand is too late. The implementation of the curricula remains. The question, then, are how TKC should be included as a part of the teaching. Based on the data collected to this report, several factors must be considered. In the following we have systematized three recommendations.

6.1 Level of implementation

The key elements of TKC are to be implemented in all subjects. Consequently, every teacher has a responsibility for updating the lectures given in accordance with the new standard. In principle, implementation of new content in the curricula should be possible within the Norwegian system of education, as it is largely state-oriented, embedded in different institutional arrangement such as legal regulations, cultural patterns and social relations. The central orientation is of importance with regard of national and universal standards of both teaching as well as assessment, founded in the heart of a universalistic school system.

Regarding TKC, however, the ideal of universalism is challenged due to problems of implementation. The teachers' ownership of their teaching is important. On the one hand, teachers must have a degree of freedom to design the teaching in harmony with their own belief. On the other hand, TKC must be included as part of the total competences in a way that ensures that the pupils are taught the same subject across schools and teachers.

- Teachers must have clear guidelines or recommendations regarding teach TKC in every subject
- There must be examples available showing how TKC can be incorporated into the teaching, i. e. a sort of 'best practice'.
- Teachers must be offered courses, and some of these courses should probably be compulsory. Based on the experiences in this report, there will be many teachers who agree that TKC is important, but still do not see how TKC should affect their teaching.

6.2 TKC must be prioritized

A respondent argued that if TKC are to be included in a given subject, somethings got to go. The question, then, is what TKC should replace.

Moreover, if TKC is not systematically assessed, it will in practice be recognized as a topic of little or none importance. Teachers as well as pupils will most likely not pay much attention to competences that are not assessed.

One solution is that schools are required to devote whole days to TKC. Then TKC will be prioritized, thus not as a part of the ordinary teaching. Such a change will make the management of the schools responsible, rather than the individual teacher. At the same time, the schools will need help on what kind of scheme they will follow on such days.

- TKC must be prioritized
- Periods of TKC projects, putting TKC on the top of the agenda for a whole day or more. During a TKC period, other subjects are to be included as a part of the teaching
- A detailed example of a TKC-project period must be available.

6.3 Strengthen the co-operation between schools and enterprises

TKC is highly a question of how enterprises and schools can improve their co-operation. While the educational institutions emphasize that it is difficult to teach and evaluate TKC, employers place great emphasis on the importance of TKC when hiring new employees. With regard to IVET and CVET, TKC could appear as particularly relevant if introduced as a subject focusing on the link between schooling and the working life.

- Plans must be made for how TKC are to be taught in the enterprises
- TKC must be included as an integrated part of becoming a professional worker. Then the problems of assessment in schools will be given less attention.

References

- Alfsen, C. (2016). 2016 update to the European inventory on valuation of non-formal and informal learning. Country report Norway, Cedefop, European Centre for the Development of Vocational Training. European Commission.
- Andersen, R. & Aspøy, T. M. (2015). Digital kompetanse i arbeidslivet [Digital competence in working life]. Fafo-report 2015:28. Oslo: Fafo.
- Andresen, S., Bjørnset, M., Reegård, K. and Rogstad, J. (2017). Fraværet er redusert, men... Tilpasninger og konsekvenser av fraværgrensen i videregående opplæring [The absence is reduced, however... Adjustments and consequences of the absence limit in upper secondary education]. Fafo-rapport 2017:33. Oslo: Fafo.
- Bratsberg, B., Nyen, T. and Raaum, O. (2017). Fagbrev i voksen alder [Vocational qualifications in adulthood]. *Søkelys på arbeidslivet* 01-02(34), 24-43.
- Bråthen, M., and Fløtten, T. (2017). The Norwegian social model - an inspiration for Greece? Fafo-report 2017:38. Oslo: Fafo.
- Hansen, M. N. (2010). Change in Intergenerational Economic Mobility in Norway: Conventional versus Joint Classifications of Economic Origin. *Journal of Economic Inequality* 8(2): 133–151. doi:10.1007/s10888-009-9109-4.
- Hegna, K., Dæhlen, M., Smette, I. and Wollscheid, S. (2012). "For mye teori" i fag- og yrkesopplæringen - Et spørsmål om målsettinger i konflikt? - Europeiske utdanningsregimer og den norske modellen.' [Too much theory' in vocational education and training - A question of conflicting objectives? European educational regimes and the Norwegian model]. *Tidsskrift for samfunnsforskning*, 53(2), 217–232.
- Hopfenbeck, T., Tole, A., Florez, T, and El Masri, Y. (2013). Balancing trust and accountability? The Assessment for Learning Programme in Norway. A Governing Complex Education Systems Case Study. OECD. file:///C:/Users/Kaja/Downloads/norwegian-gces-case-study-oecd%20(1).pdf
- Høst, H. (2008). Høst, Håkon (2008) *Fag- og yrkesopplæringen i Norge – noen sentrale utviklingstrekk*. kapittel 2 s.17-28 i *Læreplasser mellom politikk og konjunkturer*. (93). Rapport. NIFU.
- Høst, H., Skålholt, A., and Nyen, T. (2012). *Om potensialet for å få bedriftene til å ta inn flere lærlinger: En kartlegging av norske bedrifters vurdering av lærlingordningen*. (94). Rapport. Nordisk institutt for studier av innovasjon, forskning og utdanning.
- Kuczera, M., Brunello, G., Field, S., and Hoffman, N. (2008). Learning for Jobs. OECD Reviews of Vocational Education and Training. OECD.

- Ministry of Education and Research (2017). <https://www.regjeringen.no/contentassets/a77423656189422e885cb4d8140626d2/fagskoler-2017.pdf>
- Norwegian Centre for International Cooperation in Education (SIU) (2016). *Vocational education and training in Europe – Norway*. Cedefop ReferNet VET in Europe reports; 2016. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_NO.pdf
- NOU 2018:15 Official Norwegian Reports, Qualified, prepared and motivated – Knowledge background on structure and content in upper secondary education.
- NOU 2018:15 Official Norwegian Reports, The future of the school.
- Nyen, T. & Tønder, A. H. (2014). *Yrkesfagene under press* [The vocational trades under pressure]. Oslo: Universitetsforlaget.
- Statistics Norway (2019). 581 956 virksomheter i Norge. <https://www.ssb.no/virksomheter-foretak-og-regnskap/artikler-og-publikasjoner/581-956-virksomheter-i-norge>
- Statistics Norway (2018). Completion rates of pupils in upper secondary education. Retrieved June 21 2018. <https://www.ssb.no/en/utdanning/statistikker/vgogjen>
- Statistics Norway (2014). Population growth in foreseeable future. <https://www.ssb.no/en/befolkning/statistikker/folkfram/aar/2014-06-17>
- Sterri, E.B., Andresen, s., Reegård, K. and Rogstad, J. (2015). *Grenser for utdanning. Rett til videregående opplæring for voksne* [The right to upper secondary education for adults]. Fafo-rapport 2015:27. Oslo: Fafo.
- The Ministry of Education and Research (2002), *First Class from First Grade*, Official Norwegian Report, 2002:10, Oslo, Norway.
- The Norwegian Directorate for Education and Training (2018). <https://www.udir.no/in-english/norwegian-vocational-education-and-training/>
- The Norwegian Directorate for Education and Training (2017). <https://www.udir.no/om-udir/tilskudd-og-prosjektmidler/tilskuddssatser/satser-larlinger-og-larekandidater-2017/>
- The Norwegian Directorate for Education and Training (2016a). *Key competences in vocational education and training – Norway*. Cedefop ReferNet thematic perspectives series. http://libserver.cedefop.europa.eu/vetelib/2016/ReferNet_NO_KC.pdf
- The Norwegian Directorate for Education and Training (2016b). *Supporting teachers and trainers for successful reforms and quality of vocational education and training: mapping their professional development in the EU – Norway*. Cedefop ReferNet thematic perspectives series. http://libserver.cedefop.europa.eu/vetelib/2016/ReferNet_NO_TT.pdf

The Norwegian Directorate for Education and Training (2008). National ReferNet report on progress in the policy priority areas for Vocational Education and Training - NORWAY.

Tveit, S. (2014). Educational assessment in Norway. *Assessment in Education: Principles, Policy & Practice*, 21(2), 221-237, DOI: 10.1080/0969594X.2013.830079

Appendix 1

10/19/2019

Curriculum for Office and administrative skills Vg3 / in-service training at a training establishment (KAD3-01)



Curriculum for Office and administrative skills Vg3 / in-service training at a training establishment (KAD3-01)

Laid down as a regulation by the Norwegian Directorate for Education and Training on 14 February 2008 as delegated in a letter of 26 September 2005 from the Ministry of Education and Research pursuant to the Act of 17 July 1998 no. 61 relating to primary and secondary education (Education Act) Section 3-4 first paragraph.

Gjelder fra: 01.08.2008

Purpose

Office and administrative skills shall lay the foundation for practicing an occupation in dealing with clients, services, and administrative office tasks in the public and private sectors. The subject shall contribute to developing competence in electronic services, rules regarding the protection of personal information and requirements regarding access to information. Furthermore, the subject shall promote competence in how to use technological tools for office work and information processing that can contribute to a purposeful and effective organisation of work.

Learning in the subject shall help the apprentice develop competence in customer service and office administrative tasks. Furthermore, learning in the subject shall help the apprentice develop knowledge of the company's organisation and strategy for communications solutions both internal and external. Learning in the subject shall promote competence in the use of economy systems and understanding of current regulations regarding environment, health and safety.

Learning in the subject shall help the apprentice develop competence in handling change. Learning in the subject shall emphasise the use of the company or agency's digital tools for organising knowledge and sharing information. It shall organise things so the apprentice can develop practical professional office skills related to one's own place of employment and function at the company or agency.

Training completed and passed in the subject will lead to a Trade Certificate. The professional title is Office and Administrative Worker.

Structure

Office and administrative skills consists of three main subject areas. The main subject areas complement each other, and should be viewed in relation to one another.

Overview of the main subject areas:

Year level	Main subject areas		
Vg3 / In-service training at a training establishment	Office services	IT services	Economy

Main subject areas

Office services

The main subject area covers the company or agency's organisation and which services are offered; these include customer service, personnel management, office administrative tasks and basic administrative procedures. The main subject area also covers organisation of knowledge and information at the company or agency, and quality assurance of internal and external office services. Rules that regulate employment and environment, health and safety are a part of the main subject area, as is how to handle change and developments in an organisation.

IT services (information and communication technology services)

The main subject area covers the use of technological aids and tools used for administrative office tasks and for communicating with clients and users. In addition to this are included security routines to protect the company or agency's knowledge organisation and information systems. The main subject area covers guidance in how to use the company or agency's IT services, and current regulations related to this.

Economy

The main subject area covers the use of economy systems to gather, prepare and present information. Use of economy systems for purchasing, budgeting, basic bookkeeping, as well as wage and salary work related to personnel are all included in the main subject area.

Basic skills

Basic skills are integrated into the competence aims for this course in areas where they contribute to the development of and are a part of the basic subject competence. In Office and administrative skills, basic skills are understood as follows:

Being able to express oneself orally in Office and administrative skills involves communicating with clients and users as a part of all services provided.

Being able to express oneself in writing in Office and administrative skills involves preparing documents that are part of administrative office work and customer service.

Being able to read in Office and administrative skills involves acquiring, preparing and using information in daily administrative office work.

Numeracy in Office and administrative skills involves using the company or agency's economic systems to do calculations, estimations and when creating statistics when preparing presentations with figures.

Digital literacy in Office and administrative skills involves using office support systems and technological office tools and aids for customer service and administrative office tasks.

Competence aims

After Vg3

Office services

The aims of the training are to enable the apprentice to

- plan, execute, document and assess administrative and technical office tasks in line with instructions, routines, procedures and existing regulations
- give an account of the company's organisation, strategy and main objectives
- perform customer service by adapting the provided services to clients and users
- use the company's client follow-up system for customer service and service work
- use and evaluate information from manuals and digital information sources for providing services and administrative office work
- profile the company for meetings with clients and users
- work in line with current company rules and ethical norms, and regulations for environment, health and safety
- describe the company's routines for personnel management, and perform basic tasks related to personnel administration
- plan, perform and do quality assurance work in the company's knowledge organisation system and information flow methods
- describe the company's knowledge organisation system
- prepare and organise documents and information in accordance with company guidelines for layouts and use of language

- evaluate changes at work and recommend solutions for improvements
- perform work according to rules and agreements that regulate employment in office and administrative work, and give an account of employer and employee rights and obligations
 - perform office and administrative work in an ergonomically correct fashion

IT services (information and communication technology services)

The aims of the training are to enable the apprentice to

- use IT services to communicate with clients and users
- describe and use company routines for organising knowledge and information flow
- guide others in the use of the company's IT services
- use the company's office support and technical office tools to execute administrative office work

- use the company's IT services in accordance with current regulations for protecting personal information, and rules regarding the working environment
- use office support systems to gather, prepare, catalogue and store information

4 Economy

The aims of the training are to enable the apprentice to

- use the company's economy system to purchase, budget, keep accounts, pay salaries and wages and deal with personnel assignments
- use the company's economy systems to gather, prepare and present information related to administrative office tasks

Assessment

Vg3 Office and administrative skills

Provisions for final assessment:

Trade Examination

Main subject areas	Provision
Office services	All apprentices shall sit for a Trade Examination, which is normally carried out over a period of four working days.
IT services	
Economy	

The provisions for assessment are stipulated in the regulations of the Norwegian Education Act.