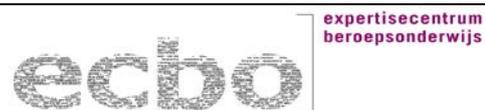

Netherlands

VET in Europe – Country report

2012

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This country report is part of a series of reports on vocational education and training produced for each EU Member State plus Norway and Iceland by members of ReferNet, a network established by Cedefop (European Centre for the Development of Vocational Training).

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1 External factors influencing vocational education and training

1.1 Political and administrative context

The Netherlands is a constitutional monarchy with a parliamentary system comprising two chambers. Central government is the highest tier of administration. However, a trend towards decentralisation began many years ago and is still underway. Tasks and responsibilities are progressively being transferred to lower levels of government and especially to municipalities, but also to social interest groups such as school associations and/or boards of governors. The Netherlands has 12 provinces, each with their own tasks and responsibilities – though these are very limited in terms of education policy. At present, the Netherlands consists of 415 municipalities. In contrast, municipalities have a greater involvement in education and training, being responsible, for instance, for (a) certain aspects of publicly financed schools at primary and secondary level, (b) the introduction of measures to reduce early school leaving and to counteract (potential) underachievement by children and youngsters from about the age of three, and (c) planning general adult education provision.

1.2 Population and demographics

The population of the Netherlands totals 16,656,000 persons (2011). The country occupies an area of 41,526 square kilometres, which comes to 402 inhabitants per square kilometre. In 2011, the demographic burden – the ‘green’ burden – constituted by the young (i.e. the under-twenties as a percentage of the number of 20 to 65-year-olds) was 39 percent. In 2011, the burden constituted by the elderly – the ‘grey’ burden – was 25 percent. Table 1 shows the population forecast.

Table 1: Population forecast by age and demographic burden / in percentages

	2011	2020	2040	2060
Population x 1,000	16,656	17,014	17,836	17,742
Younger than 20 yrs	23.5	22.1	21.5	21.2
20 to 65 yrs	60.9	58.2	52.5	53.9
65 yrs or older	15.6	19.7	26.0	24.9
‘Green burden’	38.6	37.9	40.8	39.4
‘Grey burden’	25.6	33.9	49.3	46.0

Source: CBS Statistical Yearbook 2012

This table shows that the composition of the population is set to change due to the demographic burden. While the 'green' burden will remain relatively stable, the 'grey' burden will increase during the next decades by about 80%. The composition of the population will change in other respects too, and in particular in terms of ethnic background. The number of people of foreign – non-western and western – origin will increase from 20% to 30% of the population.

1.3 Economy and labour market indicators

The service industry makes up about 80% of the Dutch economy and labour market (see table 2).

Table 2: Employment in % per sector

	2005	2010	2011
Agriculture and fishery	1.7	1.5	1.4
Manufacturing and construction	17.5	16.1	15.8
Commercial services	48.7	49.4	46.8
Non-commercial services	32.1	33.4	33.5

Source: CBS, Statistical Yearbook 2012.

In 2011, the employed labour force concerned 7.9 million people (net participation rate: see table 3). Since 2000, employment has risen in the elderly age segment(s) of the labour force because of the situation in the labour market and the (partial) elimination of arrangements for early retirement, and because more women were entering the labour market.

Table 3: Net labour participation, by gender, age and country of origin; 15-65 years in % (employed labour force as a percentage of the population).

	2005	2010	2011
Total	63.7	67.1	67.2
Gender			
Men	73.8	74.4	74.2
Women	53.5	59.7	60.2
Age			
15 to 25 yrs	38.6	37.7	38.0
25 to 35 yrs	80.5	83.5	82.4
35 to 45 yrs	77.9	82.6	82.0
45 to 55 yrs	73.8	78.7	79.0

55 years and over	39.4	48.7	51.0
Country of origin			
Native Dutch	65.8	69.4	69.6
Foreign western	62.6	64.7	64.9
Foreign non-western	49.3	52.8	53.5

Source: CBS, Statistical Yearbook 2012.

Table 4: Net labour participation, by educational attainment level in %.

ISCED level	2005	2010
ISCED 0-1	41	45
ISCED 2	57	61
ISCED 3 general	67	73
ISCED 3-4 vocational	74	77
ISCED 5 Bachelor	81	84
ISCED 5-6 Master/doctor	83	86

Source: OCW, Key Figures 2007-2011

As a result, 5.4% of the labour force was unemployed in 2011 (see table 5). Above this average of 5.4%: women (5.6%), the group aged 15-25 (9.8%), people with a foreign background, especially non-western (13.1%), and those with qualifications at ISCED level 2 or lower.

Table 5: Unemployment (as a percentage of the labour force) by country of origin and education level of 15-64 year-olds

	2005	2010 / 2011
Total	6.5	5.4 / 5.4
Country of origin		
Native Dutch	5.2	4.5 / 4.2
Foreign western	7.9	6.5 / 7.1
Foreign non-western	16.4	11.3 / 13.1
Education level		
Primary education	12.7	11.0 / 10.0
Secondary education – stage 1	9.0	8.0 / 7.2
Secondary education – stage 2	6.2	5.1 / 5.2

Bachelor	3.9	3.6 / 3.7
Master / doctor	5.0	3.8 / 4.0

Source: CBS, Statistical Yearbook 2012

In 2010, the government spending for publicly funded education was 5.9% of the Gross Domestic Product; the national expenditure for education was 6.8% (OCW, Key figures 2007-2011).

1.4 Educational attainment of the population

One reason for the changes in educational attainment of the population between 2000 and 2010 (see table 6) was that young people with qualifications at higher levels of formal education entered the labour force, while older generations with lower levels gradually left.

Table 6: Educational level of population aged 15-64 yrs in %

ISCED level	2000	2010
ISCED level 1	12	8
ISCED level 2	26	23
ISCED levels 3 and 4	40	40
Bachelor: level 5	14	18
Master / doctor: level 5/6	7	10

Source: CBS, Yearbook Education in figures - 2011.

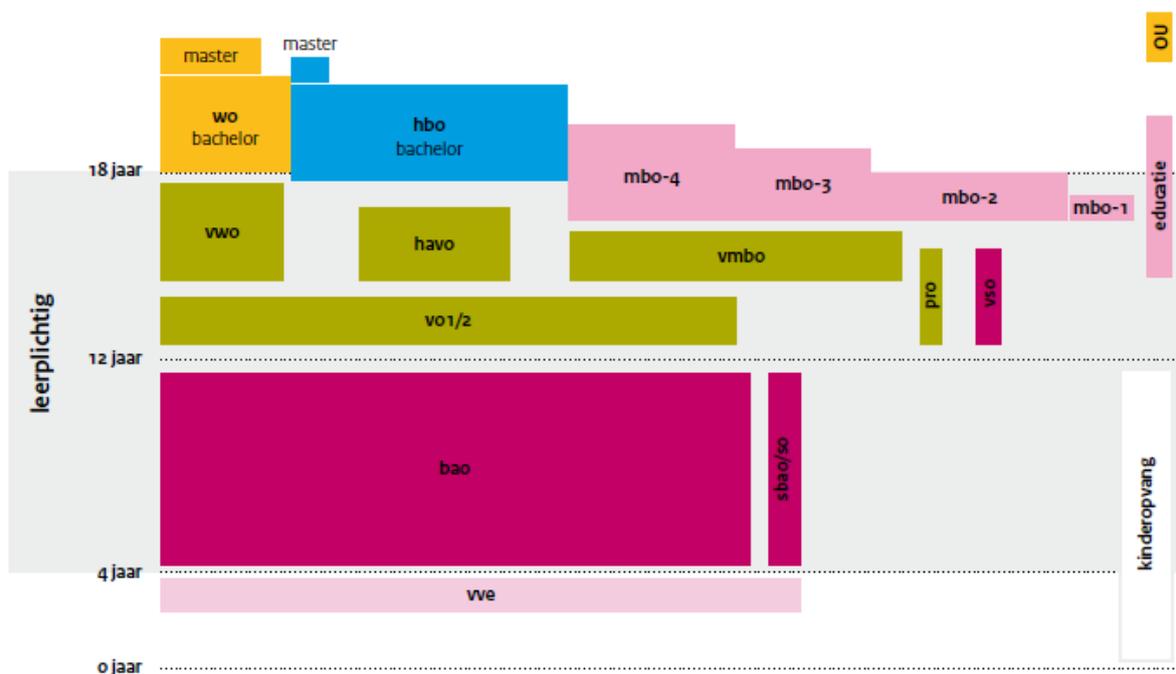
The increase in the educational level of the population is most prominent in the age bracket 25 to 34. In 2011, 41% of 30-34 year-olds had a higher education qualification (ISCED level 5 or 6).

2 Providing vocational education and training in a lifelong learning perspective

2.1 Overview of the Dutch education and training system

2.1.1 Diagram

Figure 1: Diagram of the Dutch education system (Source: Key figures 2007 – 2011, OCW).



Explanation of abbreviations/terms: *leerplichtig* = compulsory education; *vve* = *voorschoolse en vroegtijdige educatie* = pre-school education; *kinderopvang* = child relief besides/after school; *bao* = *basisonderwijs* = primary education; *sbao/so* = *speciaal basisonderwijs/speciaal onderwijs* = special (primary) education; *vso* = *voortgezet speciaal onderwijs* = special secondary education; *pro* = *praktijkonderwijs* = practical, labour oriented education; *vo* = *voortgezet onderwijs* = secondary education; *vmbo* = *voorbereidend middelbaar beroepsonderwijs* = pre-vocational education; *havo* = *hoger algemeen voortgezet onderwijs* = upper secondary general education; *vwo* = *voorbereidend wetenschappelijk onderwijs* = pre-scientific education; *educatie* = general adult education; *mbo* = *middelbaar beroepsonderwijs* = upper secondary vocational education (including a specialist programme after mbo-3 not visible in this diagram); *hbo* = *hogere beroepsonderwijs* = higher professional education (including a short cycle programme not visible in this diagram); *wo* = *wetenschappelijk onderwijs* = scientific education (including trajectories for future doctorates; not visible in this diagram); *OU* = *Open Universiteit* = Open University. Not visible in this diagram: continuing vocational training.

Transfer possibilities within the education system are shown in figure 2; see paragraph 2.1.3. The related ISCED-levels are specified in paragraph 2.1.2 and in the annex (including NLQF / EQF levels).

2.1.1 *Elucidating the diagram*

The Dutch education and training system comprises six elements: (a) primary education, (b) special education, (c) secondary education, (d) upper secondary vocational education and general education for adults, (e) vocational courses and training for adults (CVET), and (f) tertiary or higher education.

Education is compulsory for pupils from 5 to 16. And for those aged 16-17 on August 1 of any one year, if they have not yet attained a general or vocational qualification at upper secondary level (in the diagram: at least vwo, havo or mbo-2); the so called 'qualification duty'. This new arrangement was introduced in 2008 because of the need to reduce the number of early school leavers.

Primary education (ISCED level 1; (*PO – primair onderwijs*): for pupils aged 4-12; for eight consecutive years.

Special education at primary and secondary level (*SO/VSO – speciaal onderwijs/voortgezet speciaal onderwijs*): for pupils aged 3-20 with learning or behavioural difficulties and/or with mental, sensory or physical handicaps.

General secondary education (ISCED levels 2 and 3; *AVO – algemeen voortgezet onderwijs*) includes three types of education:

- Pre-university education (ISCED level 2 after three years and further at level 3; *VWO – voorbereidend wetenschappelijk onderwijs*). The duration is six years and prepares for further study in higher education: research universities and higher professional education/universities of applied sciences. Age: 12-18 years.
- Upper secondary general education (ISCED level 2 after three years and further at level 3; *HAVO – hoger algemeen voortgezet onderwijs*): the duration is five years and prepares for further study in higher professional education. Transfer to the fifth year of pre-scientific education is also possible. Age: 12-17 years.
- Lower secondary general and pre-vocational education (ISCED level 2; (*VMBO – voorbereidend middelbaar beroepsonderwijs*): the duration is four years and prepares for further study in upper secondary vocational education (and partly in upper secondary general education). Age: 12-16 years. This type of education is discussed below as part of VET.

Connected with the latter is a separate practical, labour-oriented programme for pupils who are not able to attain a lower secondary/pre-vocational education (*PRO = praktijkonderwijs*). Age: 12-18/19 years.

Upper secondary vocational education (ISCED levels 2, 3 and 4) and general adult education (ISCED levels 1 to 3). *BVE – beroepsonderwijs en volwasseneneducatie*.

- The first is upper secondary vocational education with several programmes in four sectors of the labour market; at four levels (MBO levels 1, 2, 3 and 4) with different duration. As part of the Dutch VET system, this type of education is discussed below. *MBO – middelbaar beroepsonderwijs*. Age: from 16.

- The second is general adult education: basic education (ISCED level 1; *basiseducatie*) and general secondary education for adults (ISCED levels 2 and 3; *VAVO – voortgezet algemeen volwassenenonderwijs*). Age: from 18 (but 16/17- year-olds can also attend this type of education under certain conditions).

CVET comprises a range – or maybe better termed a ‘jungle’ – of vocational or more general courses for jobseekers, the unemployed, employees, self-employed people, and employers. IVET programmes can also function as CVET.

The terms ‘higher education’ and ‘tertiary education’ have the same meaning. As a binary system, higher education (ISCED level 5) has two components:

- higher professional education: the duration is four years (mainly Bachelor’s degree, also associate degree and Master’s degree). Provider: ‘universities of applied sciences’. As part of the VET system, this type of education is discussed below. *HBO – hoger beroepsonderwijs*. Age: from 17/18.
- scientific/university education (ISCED level 5; and 6 for doctorates): the duration is four years and for technology studies five years (Bachelor’s/Master’s degree). *WO – wetenschappelijk onderwijs*. Age: from 18.

As part of (academic) adult education, and providing a modular programme structure, the Open University has open access.

2.1.2 Transfer possibilities in the system

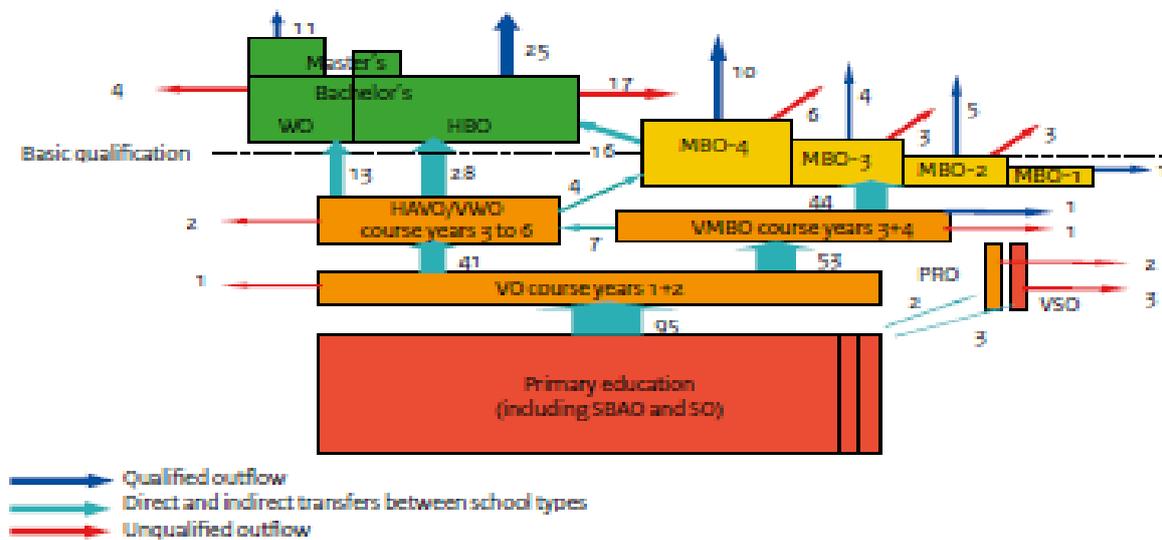
The system can be divided into two ‘columns’ or tracks (see also figure 1):

- the general education track starts in general secondary education with direct transfer possibilities to higher education; and
- the vocational education track starts in lower secondary pre-vocational education (study year 3) with transfer possibilities to upper secondary vocational education; MBO level 4 graduates can continue their studies in higher professional education. Upper secondary vocational education is the pivot in this column. For some students, it is the end of initial vocational education, and is completed with an initial qualification. For others, it is an alternative route to higher professional education; nowadays, about 50% of the level 4 graduates continue without breaks their studies in higher professional education.

Most pupils aged 14 follow the vocational track, although general education is viewed as a superior path towards higher education. Improving parity of esteem between the two tracks is a policy priority.

Figure 2 shows the estimated number of pupils transferring within the system; this relates to pupils leaving primary education in 2010. These estimates approximate present transfer percentages in one age cohort.

Figure 2: Diagram of the Dutch education system, including transfers within the system in % of a cohort of pupils



Source: Key Figures 2007-2011 (Ministry of OCW).

Basic qualification = at least a VWO, HAVO or MBO-2 diploma. Explanation of abbreviations: WO = *wetenschappelijk onderwijs* – scientific education; HBO = *hoger beroepsonderwijs* – higher professional education; MBO (4 levels) = *middelbaar beroepsonderwijs* – upper secondary vocational education; VWO = *voorbereidend wetenschappelijk onderwijs* – pre-scientific education; HAVO = *hoger algemeen voortgezet onderwijs* – upper secondary general education; VMBO = *voorbereidend middelbaar beroepsonderwijs* – lower secondary general and pre-vocational education; VO = *voortgezet onderwijs* – (general) secondary education; PRO = *praktijkonderwijs* – labour-oriented education; VSO = *voortgezet speciaal onderwijs* – secondary special education; SBAO = *speciaal basisonderwijs* – special primary education; SO = *speciaal onderwijs* – special education.

2.2 Government-regulated VET provision

2.2.1 Historical background

The development of vocational education can be characterised by a division into different periods of time. The first period, from the second half of the nineteenth century until 1919, when the first law concerning vocational education, the Industrial, Technical and Domestic Education Act (*Nijverheidsonderwijswet*), came into force, is characterised by the founding of technical schools and vocational schools, most of which were privately funded. The 1919 Act also provided for an apprenticeship system that was regarded as an alternative to vocational education in a day school context. This Act came into force in 1921.

Vocational education experienced an explosive growth during the second period, which lasted from 1921 to 1968; real growth from 1945. This was true for lower vocational education which followed on from primary education for children up to the age of 12, and for the apprenticeship system. This growth in secondary school attendance, which was primarily publicly funded, underscored the need for more cohesion between the various forms of secondary education. This resulted in the Secondary Education Act (*Wet op het voortgezet*

onderwijs) commonly known as the *Mammoetwet*, or Mammoth Act, which came into force in 1968. General secondary education, together with vocational education at lower, intermediate and higher levels, was an integral part of this Act. This joint legislation positioned general education and vocational education as equal alternatives alongside one another with the possibility of reciprocal transfers. The apprenticeship system was given its own independent legal basis in the Apprenticeship Act of 1969.

Educational expansion continued in the third period, a period concerned mainly with upper secondary vocational education and higher professional education. In the case of the latter, this period lasted until 1986, although it continued to grow after that as well. In 1986, higher professional education was provided for in a separate Act, the Higher Professional Education Act (*Wet op het hoger beroepsonderwijs*) and 'liberated' from the constraints of secondary education. Dating from the 1970s, the idea of creating greater cohesion between higher professional and academic education came to fruition in 1993 with the introduction of the Higher Education and Research Act (*Wet op het hoger onderwijs en wetenschappelijk onderzoek*). Vocational education at secondary level also underwent emancipation during this third period of time, culminating in the Adult and Vocational Education Act (*Wet Educatie en Beroepsonderwijs*) in 1996. As far as vocational education is concerned, this legislation provides for both the more academic learning strands and the apprenticeship system.

In terms of size, new legislation for higher professional education legislation, on the one hand, and for upper secondary vocational education, on the other, has created major education providers that have high levels of autonomy within a framework of general, statutory regulations – typical of the fourth period.

2.2.2 Legislative framework

Educational laws in the Netherlands provide a broad framework outlining key elements such as general aims and objectives of VET, access and accessibility, design procedures and procedures concerning the determination of qualifications, curricula and examinations, quality assurance procedures, regulations about the administration of publicly financed VET suppliers, procedures with regard to the recognition of private commercial VET suppliers, and financing.

The main legislation concerning (initial) vocational education and training is:

- for lower secondary general and pre-vocational education (*VMBO – voorbereidend middelbaar beroepsonderwijs*) as part of general secondary education (see paragraph 2.1.2): the Secondary Education Act (*WVO – Wet op het Voortgezet Onderwijs*; 1968 with later amendments).
- for upper secondary vocational education (*MBO – middelbaar beroepsonderwijs*; see paragraph 2.1.2): the General Adult Education and Vocational Education Act (*WEB – Wet Educatie en Beroepsonderwijs*; 1996 with later amendments).
- for higher professional education (*HBO – hoger beroepsonderwijs*; see paragraph 2.1.2): the Higher Education and Scientific Research Act (*WHW – Wet op het Hoger Onderwijs en Wetenschappelijk Onderzoek*; 1993 with later amendments).

The following laws are also important for (initial) vocational education:

- Regional Registration Act (early school leavers) and Coordination (*RMC: Regionale Meld- en Coördinatiewet*; 2001). Goal: reduction of early school leaving.
- Student Finance Act (*WSF – Wet op de Studiefinanciering*; for students over the age of 18 and in full-time education).
- The Reduction of Wage Tax Contributions Act (*WVA – Wet Vermindering Afdracht Loonbelasting*). Goal: financial support of enterprises that provide places for apprentices and interns.
- The Professions in Education Act (*Wet BIO – Wet op Beroepen in het Onderwijs*; 2006). Valid for primary, secondary and general adult education and for VET at lower/upper secondary level: regulates the minimum requirements for teachers.

2.2.3 Institutional framework

There are basically three organisational levels in the Dutch vocational/professional education system:

- national level,
- sectoral level (especially in upper secondary VET),
- regional/local or school level.

We identify several functions and roles in the regulated VET system: legislation and financing, development of qualifications, development of curricula, examinations, quality assurance – internal and external, and promotion of interests.

Table 7 combines the levels of organisation (including the relevant organisations or bodies) with these functions and roles.

Table 7: Organisational levels and functions/roles within initial vocational/professional education.

Function	VMBO (ISCED-2)	MBO (ISCED-3/4)	HBO (ISCED-5)
Legislation/financing	Ministry of Education, Culture and Science/ Ministry of Economy, Agriculture and Innovation	The same	The same
Development of qualifications	Design: national level Validity: national	Design: sectoral level by Knowledge Centres VET – Trade and Industry (social partners & VET). National coordination by Foundation SBB*. Validity: national	Design: school level Validity: national
Development of curricula	School level	School level	School level
Examination	Partly central/national; partly school exams	School exams; external contribution of trainers in enterprises	School exams

Quality assurance	Internal External: Inspectorate	Internal External: Inspectorate; special attention: exams	Internal: self-evaluation. External: accreditation of HBO-programmes by NVAO**. European level: use of Dublin level descriptors.
Promotion of interests by associations of schools***	VO Council	MBO Council	HBO Council

* S-BB: Foundation Cooperation VET – Trade and Industry

** NVAO = Dutch-Flemish Accreditation Organisation (*Nederlands-Vlaamse Accreditatie Organisatie*).

***NRTO (*Dutch Council for Training*) promotes the interests of private, non-subsidised VET providers that have been legally recognised by the Ministry of Education, Culture and Science to offer regulated VET courses at upper secondary and tertiary level.

2.2.4 VET at lower secondary level

VET at lower secondary level is part of secondary education.

The destination of 14-year-olds within the early tracking system of secondary education (study year 3 in secondary education) is shown in table 8. The table shows an increase in the number of pupils in the 'higher' segment of secondary education (HAVO/VWO) since 2000 and earlier. This is also the case for pupils who need extra support in the 'lower' segment (VSO/PRO). The 'middle' segment of secondary education (VMBO – excluding VMBO with extra support via LWOO) has decreased rapidly during the last two decades.

Table 8: Participation in different types of secondary education year 3 by gender; in %.

Type of education	2000	2010	2011
	boys/girls	boys/girls	boys/girls
VSO (15-year-olds)	2.2 / 1.0	4.3 / 1.8	4.6 / 1.7
PRO (15-year-olds)	2.4 / 1.4	3.1 / 2.2	3.2 / 2.1
VMBO - LWOO	11.8 / 7.5	12.8 / 11.5	12.6 / 11.7
VMBO (excl. LWOO)	51.7 / 47.7	41.3 / 37.1	41.9 / 38.1
HAVO	20.1 / 22.3	23.0 / 23.8	23.7 / 24.5
VWO	16.1 / 19.6	20.0 / 22.7	20.3 / 22.8

Source: Key Figures 2007-2011; OCW. See paragraph 2.1 for abbreviations. VSO and PRO: special types of secondary education – usually not leading to a diploma at ISCED level 2. VMBO: IVET and general education at lower secondary level leading to a diploma at ISCED level 2 (LWOO = *leerwagondersteunend onderwijs*: extra support for pupils within VMBO). HAVO and VWO: general secondary education/pre-scientific education as preparation for higher education.

Pre-vocational secondary education (*VMBO – voorbereidend middelbaar beroepsonderwijs*) lasts 4 years. The first two years consist of general subjects only and years 3 and 4 are characterised by three system elements:

1. pupils can receive extra support in the different programmes;

2. pupils choose a 'learning path' characterised by 'level differentiation', programmatic orientation and different transfer possibilities in the education system.

The four learning pathways are:

- a. The theoretical learning pathway (*VMBO-TL – theoretische leerweg*). Those graduating from the theoretical learning pathway can transfer to upper secondary vocational education (especially long courses at the highest levels of upper secondary VET – MBO levels 3 and 4) or continue their education in the fourth year of upper secondary general education. The content of the programme is general in character.
- b. The mixed/combined learning pathway (*VMBO-GL – gemengde leerweg*). This is similar to the theoretical learning pathway but with a more pre-vocational orientation for about ten to fifteen per cent of the study time. Progression routes towards upper secondary VET are the same as for the theoretical pathway.
- c. The pre-vocational learning pathway – higher level (*VMBO-KL – kaderberoepsgerichte leerweg*): preparation for long courses in VET at secondary level – MBO levels 3 and 4.
- d. The pre-vocational learning pathway – lower level (*VMBO-BL – basisberoepsgerichte leerweg*): preparation for short courses in upper secondary VET – MBO level 2. Within this pathway, some pupils can participate in a dual track that combines learning and working. Various experiments were started in 2008, including the full integration of these programmes and MBO level 2 programmes in collaborations between schools (making a 'smooth' progression route without a break halfway).

Table 9: Participation in VMBO learning pathways 2010; in %.

Learning pathway within VMBO (excl. green education)	2010	% LWOO-pupils in a learning path
VMBO - BL	21	58
VMBO - KL	26	26
VMBO - GL	11	6
VMBO - TL	41	4

Source: Key Figures 2006-2010; OCW. Compilation of data.

3. Pupils choose a sector in the pre-vocational oriented pathways (agriculture, technology, economy and business, health and welfare) and further specialities within a sector.

The examination subjects are two obligatory subjects for all pupils (Dutch and English), two sector-specific subjects (limited choice) and two other subjects (different options). The vocationally oriented subjects can be broader or more restricted in nature. The programmes lead to nationally recognised qualifications/diplomas. Some

examinations are organised centrally/nationally while others are the responsibility of the schools.

In addition, there is a specific practical pathway for low-achievers, which is geared towards preparing them for the labour market (PRO: *praktijkonderwijs*). Some of these pupils also transfer to upper secondary VET (MBO level 1; see paragraph 2.2.5). Pupils without qualifications can also enter upper secondary VET, i.e. programmes at MBO level 1 (these programmes can also be offered in VMBO schools in cooperation with MBO schools) and, under certain conditions, MBO level 2 programmes.

2.2.5 VET at upper secondary level (including post-secondary/non tertiary level)

In upper secondary education, 67% of the school population participates in a vocational programme and 33% in general education. The number of participants in VET is high; both youngsters and adults attend upper secondary VET, meaning that the numbers do not represent a division into age cohorts.

The age of the participants in upper secondary vocational education ranges from 16 to 35 and over. The average age of upper secondary VET participants is, in fact, slightly higher than in higher education. Accordingly, upper secondary VET fulfils an emancipatory function.

Subsidised programmes in VET at upper secondary level are offered by 43 regional, multisectoral training centres (*ROCs – regionale opleidingscentra*), 12 specialist trade colleges (*vakscholen*: specific for a branch of industry), 12 agricultural training centres (*AOCs – agrarische opleidingscentra*) and four other schools. The AOCs are separately financed by the Ministry of Economy, Agriculture and Innovation. In addition, private, non-subsidised providers can offer VET programmes on condition that their programmes are recognised by the Ministry. Consequently, upper secondary VET is an open system. Moreover, the subsidised educational institutions can also offer contract educational activities, paid for by employers/employees.

The system elements in upper secondary VET are:

- a. Two learning pathways: school-based full-time or part-time programmes with practical periods in enterprises (*BOL – beroepsopleidende leerweg*) and a dual pathway (apprenticeship training) in which learning and working are combined (*BBL – beroepsbegeleidende leerweg*). In the school-based pathway, the practical period in companies makes up at least 20% of the study time to a maximum of 59%; in the dual pathway, training takes place in a company during at least 60% of the study time. Both pathways function in the market as communicating vessels; the same qualifications/diplomas can be achieved via both pathways. Participants in the school-based pathway are mainly youngsters, while almost 50% of those following the dual pathway are aged 24 and over.

Table 10: Participation in MBO: learning pathways

	2000	2005	2010	2011
Total number	452,000	489,000	525,000	530,000

% BOL pathway	66	72	66	67
% BBL pathway	34	28	34	33

Sources: CBS: Yearbook education in figures – 2011; OCW: Key figures 2007-2011.

- b. Programmes at four levels with different access criteria and transfer possibilities for further learning.
- **MBO level 1** ‘assistant training’ (*assistentenopleiding*) lasts six months to a year. It prepares participants to carry out simple executive tasks (ISCED level 2 in Dutch/international statistical information). There are no restrictions on access. Progression to programmes at MBO level 2 is possible. There are a few sector-specific programmes, as well as a broader work-oriented programme for vulnerable groups (assistant with a job market qualification– *arbeidsmarktgekwalificeerde assistent*). The programmes at this level are intended for youngsters who are probably not in a position to attain a minimum starting qualification at MBO level 2; it is an entrance qualification for the labour market.
 - **MBO level 2** ‘basic vocational education’ (*basisberoepsopleiding*) lasts two or three years and prepares for executive tasks (ISCED level 3C short). This level is the ‘official’ minimum qualification level for the labour market, the term ‘official’ in this context meaning that it is related to the definition of early school leaving, which, politically speaking, is regarded as a desirable minimum for every citizen. Access requirements: at least a basic pre-vocational education diploma; completed assistant training (MBO level 1); till now under certain circumstances no access requirements apply, but this will change in the near future. Progression to MBO level 3 (and sometimes level 4) programmes is possible.
 - **MBO level 3** ‘professional education’ (*vakopleiding*) lasts three/four years (two years after completion of an MBO level 2 programme). It prepares people to carry out tasks independently (ISCED level 3C long). Access requirements: (1) a pre-vocational secondary education certificate/diploma (excluding basic pre-vocational education), or (2) proof that the first three years of upper secondary general education or pre-university education have been successfully completed. Progression to programmes at MBO level 4 are possible as are middle management training programmes and specialist training (see below).
 - **MBO level 4** ‘middle-management VET’ (*middenkaderopleiding*) lasts (three or) four years. It prepares people to carry out tasks independently and with more responsibility (ISCED level 3A). Access requirements: the same as for MBO level 3. Progression and transfer to higher professional education are possible.
 - **MBO level 4** ‘specialist training’ (*specialistenopleiding*) lasts one to two years (ISCED level 4; post-secondary non-tertiary level). Access requirements: completion of a programme at MBO level 3 (or 4). Progression/transfer to higher professional education, especially the dual or part-time pathways, is possible.

Access requirements for upper secondary vocational education are designed to ensure that everyone can gain a minimum qualification level regardless of their previous education and training.

Table 11: Participation in MBO–levels and learning pathways, 2011; in %.

	BOL	BBL
	(100)	(100)
Level 1	3.0	8.2
Level 2	18.6	36.7
Level 3	23.6	35.2
Level 4 – middle management	53.7	16.7
Level 4 – specialist	1.1	3.2

Source: CBS, Yearbook education in figures - 2011 (Compilation of data).

- c. A qualification structure is in place that relates to different industry/business sectors. Programmes are offered in four different sectors: green/agriculture, technology and engineering, economics/services, and health/welfare. Each sector includes various branches of industry/business.

Table 12: Participation in MBO – programme orientation, 2010-11; in %.

	(100)
Green/agriculture	4
Technology	26
Economics/services	34
Health/welfare	34
Combination of sectors	2

Source: Yearbook education in figures – 2011, CBS. Compilation of data.

The qualification structure comprises 237 competence-based qualifications with 612 exit differentiations/diplomas. Each qualification describes the desirable output of programmes based on these qualifications, which is output related to a specific vocation or group of occupations, to citizenship and further learning.

2.2.6 Professional education at tertiary level

There are two types of higher education: university education and higher professional education. Higher professional education offers professionally oriented programmes. It is outlined in more detail here. Publicly financed providers are the universities of applied sciences. Non-subsidised providers can also offer similar programmes if they have appropriate accreditation.

These educational institutions offer study programmes leading to Bachelor's degrees – this is their core business. In addition, pilot projects with short-cycle higher education ('Associate degree' or Ad, ISCED level 5B) were introduced in the Netherlands a few years ago, the aim being to implement the Ad in the regular education system. The Ad programme (120 ECTS; normative duration about two years) is an integral part of a Bachelor's programme (240

ECTS; normative duration four years), so that further progression in higher education for graduates with an associate degree is possible. This is of particular interest to those with a VET background at upper secondary level. These organisations also offer Master's programmes for Bachelor graduates, with more programmes expected in the next decade. These organisations can also organise market-driven contract activities paid by employers and/or individuals/employees, such as educational courses and applied research.

Degrees are awarded by the institutions themselves. Official recognition of the courses is granted on condition that they are accredited by the Dutch-Flemish Accreditation Organisation.

Higher professional education (ISCED level 5) is generally open to those who have obtained a diploma by way of pre-scientific education, upper secondary general education or the longer upper secondary vocational education course (MBO level 4). The number of entrants with an upper secondary VET background is increasing; a consequence of the implementation of the Lisbon strategy in the Netherlands.

Progression routes: after completing the first year of a Bachelor's programme, entrance to university programmes is possible; a Bachelor's degree gives access to Master's degree programmes in higher professional education, as well as to Master's degree programmes at university, which are often preceded by a bridging programme. The expected success rate for students in higher professional education is 73% (2009).

In 2011, there were 35 government-funded higher professional educational institutions in the Netherlands, with a total of 423,000 students. Higher professional education is provided at universities of applied sciences (*hogescholen*) for students aged 17 and over. They generally offer study programmes in one or more of the seven fields of training: 'green'/agriculture, technology, economics and services, health care, behaviour and society, culture and arts, and teacher training (see table 13).

Higher professional education provides education for professions that require both theoretical knowledge and specific skills. Courses are therefore almost always closely linked to a particular profession or group of professions and most programmes include a work experience placement. This type of education can also be attended part-time as part of professionally oriented adult education, and, for the last ten years, in dual learning pathways.

Curriculum development and assessment are the responsibility of the individual schools. A broad variety of curricula and learning environments exist even for programmes related to the same profession. The intention is to minimise the variety of curricula in different fields, e.g. in teacher training programmes.

Table 13: HBO students by learning pathway and programme orientation; in %.

	2005	2016	2011
Total number	357,000	357,000	423,000
Learning pathway:			
Full-time			83

Part-time	14
Dual	3
Sectors:	
Education	15
Technology	16
Economics	37
Health	9
Behaviour/society	16
Culture/arts	4
'Green' education	2

Source: Key figures 2007-2011, OCW.

2.3 Other forms of training provision

2.3.1 Provision

There is not an institutional framework for other forms of VET in the Netherlands; especially for continuing vocational training (CVT). Provision is market-driven with a great many suppliers. Social partners can stimulate CVT with the help of their branch-specific Training and Development Funds (*Opleidings- en ontwikkelingsfondsen*). Tax deduction measures for individuals to facilitate training and procedures for the accreditation of prior learning can promote further learning.

CVT can be divided into:

- legally regulated and publicly financed part-time/dual IVET that functions as CVET for individuals; see paragraph 2.2.5 and 2.2.6.;
- extensive provision of specific training for the unemployed and jobseekers;
- private, non-government-funded training for employees, self-employed people and employers.

There are various forms of training provision:

1. The part-time equivalents of regular full-time/school-based vocational/professional education and the dual pathways within upper secondary vocational education and higher professional education;
2. Private correspondence courses and e-learning activities, which are primarily vocational in nature;
3. Private oral education, which again comprises primarily vocational courses; training courses given outside the company;
4. In-company training, off-the-job and on-the-job.

A great many training providers are active in this non-formal continuing vocational training (off-the-job) market for employees. Most are private commercial training providers covering

84% of the training market and a smaller number are publicly funded VET providers that offer contract activities paid by the contractor (approx. 16% of the courses). There is very little, reliable statistical information available about informal on-the-job learning (workplace learning).

2.3.2 Sectoral and regional approaches

Employee training is partly influenced by Collective Labour Agreements, which are valid for a certain branch/sector of the labour market. Financial arrangements for CVET can be made through funds reserved for training and/or research and development (Training and Development Funds - *O&O fondsen: Opleidings- en Ontwikkelingsfondsen*). Employers pay an obligatory part of their personnel costs into these sectoral or branch funds and can benefit from refunds for training employees, (this applies in particular to training courses offered by private providers linked to a recognition/admission system for these funds). There are about 140 of these funds, covering 85% of employees.

Regional agreements on working-learning arrangements and the use of procedures for the accreditation of prior learning have increased over the past few years, stimulated by the former Interdepartmental Project Directorate for Learning & Working and others. The government has stimulated and facilitated employers, employees, citizens, trade and industry, employment services, educational providers, local governments and regions to take practical steps in the realisation of local one-stop-shops; since the economic crisis, 'mobility centres' have had the same task, namely to guide people from one job to another whether or not via additional training.

To stimulate civic integration, participation in education and the labour market, a 'participation budget' has been introduced at municipality level. This is a merger of three former budgets for social welfare and income support (Work and Income Support Act – *Wet Werk en Bijstand*), employability education and civic integration. The aim is to decrease bureaucracy. The Participation Budget Act has been operational since January 2009.

Unemployed people can search for jobs at their local/regional Centres for Work and Income (Employment Service). These centres have merged with agencies that pay social security and unemployment benefits to the unemployed and people with occupational disabilities. The municipalities are responsible for paying income support to people with no income from work or the social security/insurance system. These agencies cooperate in helping people to find work. Training can be part of the (re)integration into work. Depending on the circumstances, people themselves have a say in the choice of the most appropriate routes back to work, in the form of training components such as courses/programmes paid by these agencies.

2.3.3 Participation

The Labour Force Survey (LFS) and the Adult Education Survey (AES) asked respondents about their participation in formal and non-formal learning (age bracket 25-64, the active labour force). The results for 2011 were: 16.7% via LFS (reference period: four weeks) and (in 2008) 42.1% via AES (reference period: twelve months). Higher educated persons, younger age groups and persons with a flexible labour contract participate more than lower

educated persons, older age groups and persons who are self-employed or possess a solid labour contract

3 Shaping VET qualifications

3.1 Anticipation of skills needs

The Research Centre for Education and the Labour Market (*ROA*) is the institute in the Netherlands that specialises in labour market forecasting and skills anticipation. The forecasts aim to increase transparency of the match between education and the labour market. Two approaches can be distinguished: top-down and bottom-up. In the top-down approach, a general forecasting model for the whole labour market and data from national sources are combined to serve two main functions: policy and information. Every other year, the organisation publishes the report '*The labour market by education and occupation in 20xx*' which includes analyses of expected labour market developments in the light of particular policy issues. The information function is primarily intended to assist and support vocational and educational guidance processes.

In the bottom-up approach, partial models of labour market forecasting are used, for example for just a selection of sectors or occupational classes, with input from specific (ad hoc) data sources. This can be complementary to the top-down approach.

The Knowledge Centres for VET and Trade and Industry – active in upper secondary VET – works together with the ROA to make better use of the available data. These 17 branch-specific Knowledge Centres publish the results of 'education and labour market research' for their own sector, making use of ROA information and other resources. These documents contain information on the labour market by sector or branch, such as expected demand for qualified personnel and the expected availability of places in companies for practical training (as part of vocational education programmes), as well as qualitative developments related to changing and new employment. The educational institutions are subsequently responsible for attuning their provision of education at regional level. The regional training centres sometimes carry out their own market research to gain insight into expected needs for qualified employees at regional level.

Social partners and educational institutions can both take the initiative to introduce new occupations or qualifications or renew existing qualifications. Furthermore, social partners have an explicit task to take the initiative to incorporate new occupations or qualifications into the national qualification structure in upper secondary vocational education.

The centres for work and income (*Centrum voor Werk en Inkomen - CWI*), the social security agency (*UWV*) and the Council for Work and Income (*RWI*) are also involved in the cooperation between the ROA and Colo to match information on demand and supply in the labour market, at sectoral and regional level. The CWIs and the offices of UWV merged on 1 January 2009 and are now known as The Work Enterprise (*Het Werkbedrijf*).

Private commercial training providers have their own marketing strategies (including market research), so that they can offer courses that are relevant to potential target groups and the labour market.

3.2 Qualification design and curriculum development

The pattern for qualification design differs between the parts of the vocational/professional column:

- a. In lower secondary pre-vocational education: examination syllabi are laid down in a framework by the Ministry of Education, Culture and Science and developed by the Foundation for Curriculum Development in the Netherlands;
- b. In upper secondary vocational education: the national qualification structure defines the desired output of the qualifications. Three steps can be identified:
 - a. social partners develop and determine/validate vocational/occupational profiles;
 - b. representatives of social partners and education develop the qualification profiles (educational standards as output), which are adopted by the Ministry of Education, Culture and Science / Economy, Agriculture and Innovation. This development work is done by the 17 branch-specific Knowledge Centres for VET- Trade and Industry;
 - c. schools develop curricula – in cooperation with training firms – on the basis of the qualification profiles;
- c. In higher professional education: qualifications and programmes, developed by the schools, are accredited by the Dutch-Flemish Accreditation Organisation. A curriculum is part of the accreditation request.

Other forms of VET are mostly market-driven and therefore unregulated.

The term 'curriculum' has various meanings in the Netherlands. In relation to the term 'qualification', the best definition is: a document that relates to the desired implementation of an entire educational programme, leading to a diploma. The document always contains descriptions of the following: objectives – contents – educational structure – assessment/evaluation. The extent of detail can vary. The development of a curriculum is a matter for the individual schools within the legal frameworks as laid down in the constitution.

Schools are primarily responsible for the modernisation of their curricula. Authority with regard to learning arrangements is assigned to them; this is constitutionally regulated ('state education' has a negative ring to it in the Netherlands), which is to say that (most) 'how' questions are answered by schools (for vocational education) themselves; close collaboration exists with companies in the region. This does not mean, however, that the national government remains completely aloof. It can stimulate those developments and innovations that have consequences for the modernisation of curricula.

Spearheads in the modernisation of vocational education are: (1) a turn towards competence-based learning in multiple forms; (2) more active forms of work, which call for greater levels of independence and self-regulation amongst participants in vocational education programmes; (3) the introduction of a greater variety in practical learning with the emphasis on the practical applicability of knowledge: workplace learning; simulation companies; carrying out assignments for companies, etc.; (4) the development of longitudinal learning strands that transcend the different types of vocational education; (5) the introduction of different forms of supporting participants: coaching, mentoring (also peer mentoring), career guidance, etc.; and (6) the introduction of more varied means of assessment, including the simulation of an aptitude test.

Schools providing vocational education make their own choices when it comes to the finer points of modernisation.

3.3 Assessment

In the Netherlands, the mechanisms to recognise formal learning in government-regulated VET are as follows:

- In lower secondary vocational education, central, national examinations and school examinations are held, both of which are important for gaining a diploma. The Education Inspectorate supervises the quality of school exams;
- In vocational education at upper secondary level, the assessment of learning results is a matter for the school. The law stipulates that the learning company has to be involved in this testing process. The qualification standards serve as benchmarks for the assessments. The Education Inspectorate supervises the quality of the examinations (content, level and procedures at programme level). In the future: central examinations in Dutch as language and arithmetic;
- In higher professional education, schools are responsible for the examinations in accordance with the teaching and assessment regulations designed by the provider; these regulations are part of the accreditation request for a recognised HBO programme.

Most other forms of VET have their own or no regulations.

Accreditation of prior, non-formal and informal learning is an instrument that has been promoted in the Netherlands for the last ten years. Accreditation of prior learning takes place in accordance with the national qualifications/standards in VET at upper secondary vocational and higher professional level in particular. Accreditation is laid down in the form of a diploma or a course certificate; parts of regular VET programmes are exempt. Schools or other training providers play an important role in making use of these procedures – they apply them. Free access to examinations already existed in the Netherlands: various education acts refer specifically to the possibility of external candidates or outsiders sitting examinations.

3.4 Macro-effectiveness of VET provision

The Ministry of Education, Culture and Science determines the provision (learning departments for broad fields related to the labour market) in lower secondary pre-vocational education.

Schools in upper secondary vocational education decide which qualifications to provide. While efficiency and effectiveness exist at a regional level, no effectiveness tests are in place at national level.

In higher professional education, schools develop their programmes themselves (in cooperation with partners in the labour market). These programmes are accredited by a

competent authority. The Ministry of Education, Culture and Science decides whether an accredited programme is to be publicly funded or not (macro-effectiveness test).

4 Promoting participation in VET by funding mechanisms

4.1 Funding government-regulated VET

The Ministry of Education, Culture and Science administers almost all central government expenditure on education; an agency of the Ministry has been charged with this task (DUO). The Service Institute Education (*Dienst Uitvoering Onderwijs - DUO*) within the Ministry of Education, Culture and Science plays a key role in the administration and financing of state-regulated VET. There is a complex but direct financing relationship between this agency and the schools for vocational/professional education

Funds are channelled either directly to schools or indirectly through municipalities (primary and secondary education for school accommodation; general adult education). Another source of funds consists of the statutory course and tuition fees paid to the institutions by the students themselves. Educational institutions can also generate income from other sources, e.g. contract activities, extra funding from municipal authorities for special projects, e.g. reduction of early school leaving.

Funding lower secondary vocational education

The funding principle is block grant funding. It gives the competent authority considerable freedom in deciding how to spend the available resources. Schools receive a fixed amount per pupil plus a fixed amount per school. Further: extra financial measures for 'pupils at risk'.

Funding upper secondary vocational education (and general adult education)

There are various sources of funding in this sector:

- Government funding:
 - For vocational education: block grant funding of schools is within the macro budget at national level. The amount of money is based in part on the number of students per course/learning path and in part on the number of certificates awarded per institution.
 - For general adult education: money is allocated to the municipalities on the basis of the number of residents over the age of 18, the number of ethnic minorities and the number of adults with learning difficulties. The municipal authorities purchase adult education courses by concluding contracts with the VET providers.

The municipalities also receive a budget from the central government for civic integration training. This market was liberalised in 2007, so that upper secondary VET schools are no longer the sole providers.

- Other income:

Contract activities for companies and individuals, and for municipalities in civic integration training.

- Students' fees:

Students pay course fees to the institutions. Students in vocational education and training programmes (school-based pathways) pay fees to the government and qualify for student grants from the age of 18 (Student Finance Act).

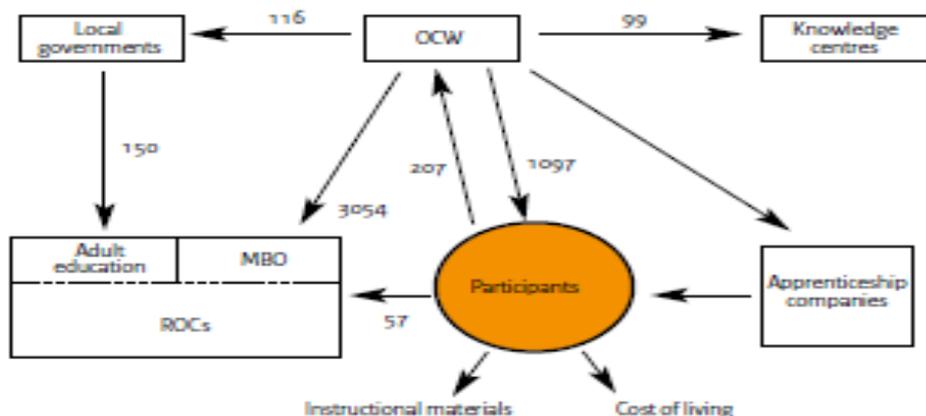
- Companies:

For companies offering learning places for apprentices/dual pathway: a tax facility of €2,500 for each place occupied.

Companies spend an average of €8,400 for 'guided learning activities' for each participant in the dual system (upper secondary and higher VET level) and €1,750 for students in practical learning periods in full-time school-based VET (2006).

The flow of funds is shown in figure 3.

Figure 3: Flow of funds in upper secondary vocational education and general adult education (2010); in millions €



Source: Key Figures 2007-2011, Ministry OCW- Education, Culture and Science; (Notes: mbo = upper secondary vocational education; ROCs = regional VET centres; Ministry of Economic Affairs, Agriculture and Innovation and agricultural schools not included in the diagram). Other income for VET providers is not shown in the diagram. The amount of money for civic integration training is not shown in the diagram; municipalities/local governments receive funds from a different Ministry.

Funding higher professional education

- Government funding:

The amount of money is within the macro budget and is based in part on the number of enrolled participants and in part on output/outcome results (number of diplomas). There is also a fixed budget. The pattern of financing will probably change in the near future.

- Private funding:

Contract activities paid by the contractor (enterprises and/or individuals/employees).

- Students:

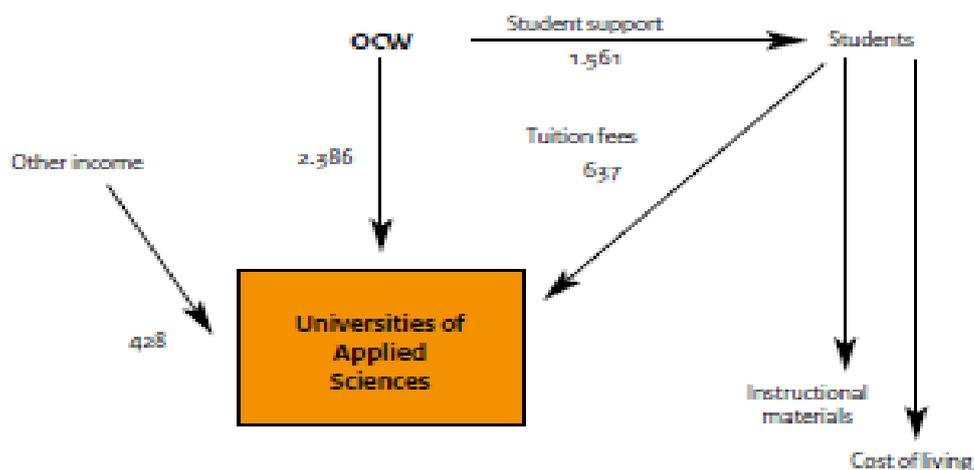
Full-time students receive financial support from the age of 18 under the Student Finance Act (via the Ministry of Education, Culture and Science) and they have to pay tuition fees to the universities of applied sciences.

- Companies/enterprises:

Enterprises offering learning places in the dual pathway: tax deduction scheme comparable with that of upper secondary vocational education. Companies incur costs for guided learning activities.

The flow of funds is shown in figure 4.

Figure 4: Flow of funds in higher professional education (2009); in millions €



Source: Key Figures 2007-2011, Ministry OCW; (Note: Ministry of Economic Affairs, Agriculture and Innovation and agricultural schools not included in the diagram). The flow of money for apprenticeship companies is not shown in the diagram.

4.2 Funding other forms of VET

Enterprise-based CVET for employees is financed by companies, training and development funds (see below), tax facilities and individual initiative. Enterprise-based arrangements for training are often made in the context of Collective Labour Agreements. These agreements are made in each sector of industry and are preceded by negotiations between employers and employees and last for a specified period of time (usually one or two years). Some of these sectoral arrangements contain extra provisions to accommodate specific regional demands or circumstances. Financial arrangements in these agreements – specifically pertaining to continuing training – are made through funds reserved for training and/or research and development. The most prominent of these funds are the Training and

Development Funds (*O&O fondsen*), which were established as a means of creating a more solid foundation for training and ensuring that training became embedded within the various sectors of the economy (and the individual companies within these sectors).

Bibliography/sources

Centraal Bureau voor de Statistiek (2012). *Jaarboek Onderwijs in cijfers – 2011 (Yearbook education in numbers – 2011)*. Heerlen/Rijswijk: CB S.

Centraal Bureau voor de Statistiek (2012). *Statistisch Jaarboek 2012 (Statistical Yearbook 2012)*. Heerlen/Rijswijk: CBS.

Ministerie van Onderwijs, Kunsten en Wetenschappen (1968). *Wet op het voortgezet onderwijs (Law Secondary Education)*. Den Haag: OKenW.

Ministerie van Onderwijs, Cultuur en Wetenschappen (1986). *Beroepsprofiel- en leerplanontwikkeling (Development of vocational profiles and curricula)*. Zoetermeer: OCenW.

Ministerie van Onderwijs, Cultuur en Wetenschappen (1993). *Wet op het hoger onderwijs en wetenschappelijk onderzoek (Law Higher Education and Scientific Research)*. Zoetermeer: OCenW.

Ministerie van Onderwijs, Cultuur en Wetenschappen (1996). *Wet Educatie en Beroepsonderwijs (Law Adult and Vocational Education)*. Zoetermeer: OCenW.

Ministerie van Onderwijs, Cultuur en Wetenschap (2011). *Key figures education 2006-2010*. Den Haag: OCW.

Ministerie van Onderwijs, Cultuur en Wetenschap (2012). *Key figures education 2007-2011*. Den Haag: OCW.

Annex

Classification of VET programmes and qualifications

Table 14. Classification of VET programmes in pre-vocational education, upper secondary vocational education and higher professional education. Duration and stay in years.

Dutch level*	ISCED level	Nominal duration**	NLQF / EQF
Lower secondary; study year 3 and 4	2	2	1 and 2
Upper secondary: MBO level 1	2	0.5 - 1	1
MBO level 2	3C - short	2 - 3	2
MBO level 3	3C - long	3 - 4	3
MBO level 4	3A	3 - 4	4 and partly 5
MBO level 4/specialist	4	1 - 2	4
Tertiary: associate degree	5B	2 (120 ects)	5
Tertiary: bachelor	5A	4 (240 ects)	6
Tertiary: master	5A	1 – 2 (60 - 120 ects)	7

*MBO level = upper secondary level. **ects = European credit transfer system (study points).