Chapter 4: THE EXTENT OF EARLY LEAVING FROM VET

Leaving education early: putting vocational education and training centre stage
Volume I: investigating causes and extent

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CHAPTER 4.
The extent of early leaving from VET

4.1. Identifying different early leavers

The LFS is used at EU level to monitor ELET, measured as failure to reach sufficient qualification at upper secondary education. This reflects concern about having an appropriately skilled and qualified workforce but policy concerns also have to consider the incidence of dropping out from specific pathways. There may be distinct policy responses for those who can be considered early leavers who did not make the transition from one level of education to the next (here described as ‘non-starters’) and those who started a programme but discontinued it or failed the examination (dropouts). Box 6 defines these distinctions.

Box 6. Early leavers, drop outs and non-starters

**EU definition of early leaving**: the percentage of the population aged 18 to 24 who have achieved a lower secondary level of education or less (i.e. ISCED 0, 1, 2 or 3c short) and declared not having received any education or training in the four weeks preceding the EU LFS (not currently engaged in education and training).

**Early leavers who are non-starters**: the percentage of the population in defined age brackets (*) who achieved a lower secondary level of education or less (i.e. ISCED 0, 1, 2 or 3c short) and never began a programme of study at the next level of education.

**Early leavers who are dropouts**: the percentage of the population in defined age brackets (**) who achieved a lower secondary level of education or less (i.e. ISCED 0, 1, 2 or 3c short) and enrolled in an education programme which they did not complete.

(*) A broader age category was used in the analysis of PIAAC data to achieve a sufficient sample.

(**) Idem.

In contrast to the LFS, which only measures the rate of early leaving, the PIAAC data set can be used to differentiate between those that dropped out with unfinished qualifications and those that did not make the transition from one level to the next. Examining the PIAAC data illustrates that during the time of collection (August 2011 to March 2012), an estimated 13.9% of the 16 to 34 year-old age group in the 18 EU and EEA participating countries were considered early...
leavers (\(^{(21)}\)); this is in line with the estimated 13.3% for the EU-28 according to the LFS of 2011. Further differentiating this group of early leavers illustrates that fewer early leavers started a programme from which they dropped out than those who did not make the transition. Among the 16 to 34 year-old population not currently in education or training, 5.8% are early leavers who dropped out of a programme before completing, compared to 8.1% of early leavers who did not drop out \(^{(22)}\). So of the early leavers, 42% can be considered dropouts and 58% are non-starters. In PIAAC those who enrolled in a programme at ISCED 3c short are counted as non-starters.

Given these proportions, neither group can be said to dominate the overall figures but there are major differences between countries. Figure 3 compares the overall rate of ELET and the percentage of early leavers who are also dropouts. The dark blue columns represent the share of early leavers and the gap between the two columns indicates the proportion of early leavers who are non-starters. Where the gap is narrow, most early leavers are dropouts (in the Czech Republic, Finland and Sweden). Where the gap is larger, most early leavers have not started a qualification that they did not complete (in Belgium, Ireland, Spain, Italy, Cyprus, Slovakia, and the UK). Removing two countries that are outliers (Spain and Italy) from the analysis shows the high share of early leavers that did not experience a dropout event. A major difference between the number of early leavers who experienced a dropout event and the number of early leavers who did not experience such an event can be explained by one or more of these situations:

(a) many early leavers complete lower secondary education but do not make a transition to upper secondary education (so they never start an upper secondary programme);

(b) many early leavers completed a short (often vocational) programme at ISCED 3c;

\(^{(21)}\) The analysis was restricted to those aged between 16 and 34, not currently in education and training in the 18 EU and EEA participating countries in the PIAAC data set. The sample excludes those whose highest level of qualification was unknown (‘missing’ in the survey) and those who achieved their highest level of qualification abroad, so calculating the percentage of early leavers within a country (rather than including those that qualified or became ELET in a different country from that in which they are now living). A more detailed discussion of the construction of indicators used in the analysis of PIAAC data, and a detailed breakdown of the results presented in this paragraph by country are available on request.

\(^{(22)}\) Figures are based on ELET who dropped out of any ISCED level programme. A detailed breakdown of the sample by country is available on request.
(c) many early leavers complete a programme that is not mapped against ISCED levels (such as an adult learning programme).

Figure 3. **PIAAC rates of early leaving and dropout among 16 to 34 year-olds**

![Graph showing PIAAC rates of early leaving and dropout among 16 to 34 year-olds](image)

NB: When omitting Spain and Italy the average share of early leavers falls from 13.9 to 10.3, and the share of early leavers who are also dropouts falls from 5.8 to 4.5. The proportion of early leavers versus early leavers who are dropouts remains comparable.

Source: ICF calculations based on PIAAC data; data are weighted within countries and to produce the EU +EEA 18 average.

The AES, 2011-12, was also examined with the purpose of differentiating between early leavers who are also dropouts and those who are non-starters. The results of this analysis seem to suggest that most ELET are non-starter (64% of the sample, compared to 16% for dropouts), with a considerably higher share than in the PIAAC data set. However, a large share of non-responses questions data validity and, for this reason, it will not be further analysed here.

4.2. **Measuring early leavers versus dropouts**

Discussion of early leaving and its definition in Europe usually excludes anyone who initially dropped out of education and training but then returned to finish upper secondary education (or above). However, not completing a programme of study is not exclusive to early leavers. Many of those who experience dropout...
achieve an upper secondary qualification (23). Almost 9% of all young people (16 to 34) not currently in education or training at one time experienced dropout from ISCED 3 or below. The figures show that 5.6% of young people have unfinished qualifications at ISCED 3 or below (24) and are early leavers. However, a further 3.1% have experienced dropout (at ISCED 3 or below) but have achieved a minimum of upper secondary qualifications. This means that of those who experience dropout during upper secondary education or before (i.e. from ISCED 3 or below), 36% achieve, at a minimum, an upper secondary (ISCED 3) qualification. This is illustrated in Figure 4.

Figure 4. Young people (aged 16 to 34) who experienced an uncompleted qualification at ISCED 3 or below in 18 EU + EEA countries (PIAAC)

Source: Cedefop. ICF calculations based on PIAAC; data are weighted.

(23) Based on PIAAC data, a proportion of those who experienced a dropout event would not be classified as early leavers as they either had already obtained a minimum upper secondary qualification before dropping out from another upper secondary qualification (or below); alternatively, subsequent to dropping out they went on to attain an upper secondary qualification (or higher). Given that the PIAAC data only provide year ranges for qualifications achieved, it is not possible to analyse the latter. However, it is likely that only a small percentage make up the former category.

(24) The figures in Section 4.1 highlight that 5.8% of the 16 to 34 year-old population not currently in education or training are dropouts. The analysis finds that almost all ELET drop out from ISCED 3 or below; however a very small number (0.2%) are early leavers (i.e. have a qualification as ISCED 3c short or below) who started a programme at ISCED 4 and failed to complete it.
4.3. Measuring ELVET

There are no comparable international data specifically examining the issue of early leaving in the context of learner trajectories (see Section 1.3.2). Therefore, there are difficulties in estimating the degree to which early leaving is predominantly an issue from general education or vocational education. This study explored the possibility of developing such an indicator \(^{(25)}\) using the AES implemented during 2011-12 \(^{(26)}\).

Only a small percentage (16%) of the early leavers in the 25 EU, EEA and candidate countries surveyed in AES answered ‘yes’ to the question whether they had started studying towards a qualification at a higher level of education than the highest successfully completed. This share is substantially lower than in the PIAAC data (42%) indicating that the 20% non-response to this AES question (Section 4.1) may distort the result and the share of early leavers that dropped out may be greater.

Of the 25 EU, EEA and candidate countries participating in the AES, 16 countries surveyed the orientation of the programme from which the respondent had dropped out from. Restricting the analysis to early leavers who answered the question (i.e. 16% of the sample), the AES data give a general estimation that the proportion of early leavers who drop out from VET programmes is higher than those who dropped out from general education. The data suggest that for every early leaver from general education there are two from VET. However, these data can only be considered indicative given the non-response rate and that sample sizes in the majority of countries were very small and therefore not reliable.

\(^{(25)}\) The study also explored the possibility of developing such an indicator using PIAAC data. However, the orientation of the uncompleted qualification is not captured in the PIAAC data; only the orientation of the highest level of education obtained is known.

\(^{(26)}\) A working definition used in this study when carrying out analysis of the AES microdata is as follows: early leaver from VET is a person who has not achieved an upper secondary qualification, who dropped out from a VET programme leading to a qualification higher than the one she/he holds, and who is currently not studying. Using the AES variables, this definition is operationalised in the following manner:
(a) the highest qualification attainment of the respondent is ISCED 0, 1, 2 or 3c (short);
(b) the person has started a level of education/training higher than the one they achieved (ISCED 3 a, b or c-long);
(c) the orientation of the programme from which the person dropped out was vocational;
(d) the person has not attended formal education and training in the past 12 months.
Nevertheless, national data sets in a number of Member States support this finding. Looking at the programme that learners were enrolled in when they dropped out and became ELET, a number of countries reviewed during the study exhibit higher numbers of ELET from VET programmes compared to general education, though there are significant differences between countries \(^{(27)}\). On average, the numbers of ELET from those enrolled in general education at the time of becoming ELET are low compared to the numbers of those who exit VET programmes in the Flemish Community of Belgium, Denmark, France and the Netherlands, as illustrated in Table 3.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Lower secondary</td>
<td>19.9</td>
<td>2012/13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General education</td>
<td>2.30</td>
<td>13.0</td>
<td>24.1</td>
<td>0.6</td>
</tr>
<tr>
<td>VET</td>
<td>15.71</td>
<td>48.0</td>
<td>56.0</td>
<td>5.7</td>
</tr>
<tr>
<td>Apprenticeships</td>
<td>36.72</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art secondary education</td>
<td>9.56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical secondary education</td>
<td>6.45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time education</td>
<td>53.79</td>
<td></td>
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</tr>
</tbody>
</table>

Danish source: Ministry for Children, Education and Gender Equality (Denmark), UNI-C statistics.
Flanders source: ICF calculations based on Ministry of Education administrative data set.

A more detailed analysis of two national micro data sets was carried out during this study to explore the phenomenon of ELET from VET pathways further; data from a survey of those who left education and training in 2004 in France (Generation 2004 survey) and administrative data of a cohort of learners who started secondary school in 2004 in the Netherlands \(^{(28)}\). This sheds light on how learners outcomes depend on the programme they initially enrolled in. The ELET rate among those initially enrolled in VET programmes is higher than for those initially enrolled in general education in both countries. In France, 24% of those who were initially enrolled in VET at the beginning of upper secondary education were ELET when they left education and training in 2004. Similarly,

\(^{(27)}\) Also due to the variety of ELET definition and counting in the various statistical sources.

\(^{(28)}\) A detailed discussion of the two data sets, including the construction of indicators used, is available on request.
20.5% of those initially enrolled in prevocational secondary education (Voorbereidend Middelbaar Beroepsonderwijs, VMBO) in the Netherlands were ELET by 2014 (\(^{(29)}\)).

The ELET rate of those enrolled in VET at the time of leaving education and training (independent of the track they initially started in) is 26% in France, which does not significantly differ from the ELET rate of those who started in VET mentioned above (24%) (\(^{(30)}\)). In the Netherlands, among those who started in pre-VET pathways in 2004, 20.5% were ELET by 2014, as illustrated in Figure 5. For the population in 2014 (excluding dropouts from lower secondary/VMBO) 16.5% of those who had ever been in a VET or pre-VET programme are ELET (\(^{(31)}\)).

The above analysis finds that ELET rates are higher for those who are enrolled in VET pathways at the time of early leaving compared to those attending general education. ELET among those initially enrolled in VET at the time of differentiation is also higher than those in general education programmes. One possible reason is that individuals who are more at risk of early leaving, more often enrol in VET programmes rather than in general education. To explore this further, the study analysed the characteristics of learners and early leavers who followed VET and general education.

4.3.1. Characteristics of VET learners

The French and Dutch microdata were used to differentiate the characteristics – in terms of age, gender, socioeconomic background, migrant background – of learners following different pathways in secondary education.

The results show that VET tracks are characterised not only by older learners – indicating that they have repeated a year/grade during primary school – but also have over-representation of males, those with health issues and those coming from lower socioeconomic backgrounds.

\(^{(29)}\) This excludes those who were initially enrolled in prevocational secondary education (Netherlands) (Voorbereidend Middelbaar Beroepsonderwijs, VMBO) who are currently in education and training in 2014. The number of individuals associated with the percentages reported here and in Figure 5 for France and the Netherlands is available on request.

\(^{(30)}\) Available on request.

\(^{(31)}\) Available on request.
Understanding the characteristics of those enrolled in VET at a given time is best in the context of those who follow various pathways to ELET. It can be helpful first to look at the characteristics of the ‘average’ learner to compare the features of those who follow pathways to early leaving compared to the whole population. Then analysis can compare the characteristics of different pathways that lead to early leaving:

(a) those who enrol in a VET (or general education) programme and remain until completion;
(b) those who enrol in a VET (or general education) programme, remain in a programme and are early leavers;
(c) those who enrol in a VET programme, switch to general education and remain until completion;
(d) those who enrol in a VET programme, switch to general education and are early leavers;
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(e) those who do not get to enrol in upper secondary.

The learner population in France is evenly split between male and female students. Just under a third come from low socioeconomic background (32% have at least one parent that is a worker), fewer than a quarter are migrant (23% have a parent born outside of France), 15% are above the typical age entering lower secondary education and 1.5% have registered a file to be recognised as disabled by 2007 (32).

Early leavers from lower secondary education and training, by comparison, are likely to be male (58%), from a lower socioeconomic background (42% at least one parent is a worker), are likely to have at least one parent born outside of France (34%), are older when starting lower secondary education (45%, indicating that they probably repeated a grade), and suffer health problems (6% have registered a file to be recognised as disabled) (33).

Figure 6 presents the characteristics of learners who made the transition to upper secondary education in France. It shows that those directed to VET tracks have intrinsically different characteristics from those opting for general education. Boys are more represented in VET tracks (60% against 45% in general education), as are those having a lower socioeconomic background (45% come from a family of workers, against 24% in general education) and those with prior difficulties at school (27% are above typical age when entering lower secondary education, compared to 5% in general education).

The same situation is observed in the Netherlands, despite the fact that VET tracks there attract a larger proportion of learners compared to France (52% against 38%).

Figure 7 shows that boys are slightly better represented in VET tracks (52% against 47% in general education), as well as non-western migrants (18% against 10% in general education). Older pupils typically start in VET tracks (33% against 9% in general education).

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(32) Data on characteristics of learners are available on request for France and the Netherlands.

(33) Data on characteristics of early leavers are available on request for France.
Figure 6. Characteristics of VET and general education learners, France

NB: Socioeconomic background: at least one parent is a worker (in 2004). Migrant: at least one parent was born outside France (in 2004). Age: % older than average at time of entering lower secondary education. Health: has filed to be recognised as a person with a disability (by 2007).

Source: Cedefop. ICF analysis of Generation 2004. Confidence intervals associated with percentages and the N related to the actual number of observations in the sample available on request.

Figure 7. Characteristics of VET and general education learners, the Netherlands

NB: Non-western migrant: someone originating from a country in Africa, South America or Asia (excluding Indonesia and Japan) or Turkey, meaning that either the person or one parent is born in the countries mentioned. Age: older than the average in 2004.

Source: Cedefop. ICF analysis of administrative records of a cohort of learners who started secondary school in 2004. Data in table format available on request.
Figure 8 compares those who followed VET programmes and became ELET to those who followed general education programmes and became ELET in France. It shows that there are substantial differences between these groups. Those who are ELET from VET are overwhelmingly male (77%), from low socioeconomic background (48%), migrant (37%), older (38%) and suffer health problems (4.2%). By comparison, ELET who followed general education are almost equally likely to be male or female, come from average socioeconomic backgrounds, have average representation of migrants, are unlikely to be older/repeat a grade and suffer average health problems.

French early leavers from VET that initially started in general education programmes mostly share the same characteristics as those who followed general education programmes and became ELET; the exception is that they tend to be older and suffer more health problems. The comparison is highlighted in Figure 8, also demonstrating these characteristics for the whole population of learners who left education and training in 2004.

Figure 8. Characteristics of VET and general education early leavers, France

NB: Socioeconomic background: at least one parent is a worker (in 2004). Migrant: at least one parent was born outside France (in 2004). Age: % older than average at time of entering lower secondary education. Health: has filed to be recognised as a person with a disability (by 2007).

Source: Cedefop. ICF analysis of Generation 2004. Data in table format are available on request.

(34) The discussion does not include those who start in VET and switch to general education programmes and become ELET, as the incidence of this pathway is so small – only 10 learners – which is not meaningful for the purpose of the analysis.
The picture in the Netherlands as presented in Figure 9 is similar to France. Girls are less represented in early leavers who started and persisted in VET, compared to early leavers who started and persisted in general education. Switchers tend to have the same profiles as those of the track from which they originated (VET-general education early leavers look similar to VET-VET early leavers; general education-VET early leavers share many characteristics with general education-general education early leavers).

While this is only a small portion of the picture, and cannot be indicative of the quality of the VET programmes or other important factors influencing early leaving, it is clear that early leavers who followed VET have a different profile. In France, those who are older (due to having repeated a class in primary education) and those with health problems appear to be channelled into VET programmes, either initially or after they had first chosen general education and subsequently become early leavers. In the Netherlands, however, switchers who
later became early leavers do not seem to have a distinct profile, compared to those who did not make the switch and later became early leavers.

In France, the profile of completers from different pathways also differs in significant ways. The profile of those who started in VET, but switched to general education and received a qualification, share many aspects (such as gender, share of migrants, health status) as those who initially started in general education and persisted in that pathway, even if they are still more likely to come from a lower socioeconomic background.

As illustrated in Figure 10, in France, it appears that those initially enrolled in VET with profiles closer to learners in the general education track (in particular females and those who are healthy) make the switch to a general education programme during upper secondary. Consequently, those who persist in VET pathways (not making a switch and either completing or not) are characterised by a higher proportion of male learners, from low socioeconomic backgrounds, are older/repeated a grade and suffer health problems. Those who drop out from VET are most likely to have these characteristics.

Figure 10. Characteristics of VET and general education completers, France

The profiles of those who make the switch from general education to VET and qualify appear similar to those who followed general education programmes
(not making the switch) and became early leavers. Therefore, there is some indication in the data that those with similar profiles to general education early leavers are reoriented to VET programmes, even though they do not seem as disadvantaged (in terms of socioeconomic background and poor prior achievement) as those who start in VET and persist. This reinforces the idea of VET as a safety net for learners from general education that may have otherwise dropped out.

Similar findings are observed in the Netherlands, as shown in Figure 11. A lower proportion of older pupils (18% against 33%) is observed among those who make the transition from VET to general education, compared to those who persist in VET. The gender variable does not seem to be associated with the decision to switch in the Netherlands; the same proportion is observed in both categories.

For VET as a safety net for learners initially starting in general education, those who make the switch and complete are more likely to be older, compared to those who persist in general education (15% against 9%), although the share of older pupils among general education–general education early leavers is even higher (26%).

Figure 11. Characteristics of VET and general education completers, the Netherlands

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
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<tbody>
<tr>
<td>VMBO (pre-VET) - MBO 2+ (VET) - qualification</td>
<td></td>
</tr>
<tr>
<td>HAVO/WO (GE) - GE - qualification</td>
<td></td>
</tr>
<tr>
<td>HAVO/WO (GE) - VET - qualification</td>
<td></td>
</tr>
<tr>
<td>VMBO (pre-VET) - HAVO/WO (GE) - qualification</td>
<td></td>
</tr>
</tbody>
</table>

NB: Non-western migrant: someone originating from a country in Africa, South America or Asia (excluding Indonesia and Japan) or Turkey, meaning that either the person or one parent is born in the countries mentioned. Age: older than the average in 2004.

VMBO – prevocational secondary education (four years); HAVO – senior general secondary education (five years); WWO – pre-university education (six years); MBO – secondary vocational education. The indication 2+ indicates programmes of level 2 or above in the national qualifications framework (and EQF).

Source: Cedefop. ICF analysis of administrative records of a cohort of learners who started secondary school in 2004. Data in table format are available on request.
The characteristics of the various pathways appears to suggest that ELVET is associated with higher proportions of males, low socioeconomic status, higher proportions of migrants, older learners and those with health problems; these are all known risk factors for early leaving. This may be exacerbated by the fact that those initially enrolled in VET pathways that have profiles similar to those in general education pathways switch to general education. The findings indicate some selection issues in terms of the profiles of various pathways through education with males, lower socioeconomic, older and those in poor health being oriented initially to VET pathways. Further, those who then make the switch from VET to general education are least likely to fit the ‘typical’ VET profile and are more similar to those who were following general education programmes; in contrast, those who join VET tracks after starting in general education are more likely to have characteristics associated with ELET. These characteristics may explain some of the higher early leaving rates among those who follow VET pathways.

4.3.2. Share of early leavers and types of VET programme
A review of the national data also shows significant variation between VET programmes types, in countries where different tracks exist:
(a) in the Netherlands, the higher the level of the VET programme and related qualification, the lower the share of early leavers from the programme (Table 3);
(b) in the Flemish Community of Belgium, while the share of ELET originating from VET schools is generally high, it is even higher when looking at apprenticeships and part-time VET that combines working and learning. This arises because apprenticeships in Belgium tend to be considered as last resort option by students and their families; these tracks have a high proportion of students who already dropped out of other programmes. It is also related to the practice of ‘relegation’ that is quite common in Belgium whereby students who lag behind are oriented towards another programme. Figure 16 in Section 4.4. shows that a significant share of students from general, technical or artistic education graduate in a different programme from the one they started, having been reoriented during their studies;
(c) in Denmark, adult VET learning at upper secondary level shows the highest proportion of dropouts (45% of those registered in this type of course). There are also important differences between the share of dropouts from foundation courses and main courses (28% in foundation courses and 21% in main courses). Interviews carried out for this study noted that these differences are due to the difficulty in finding an apprenticeship place, which
is a compulsory part of all VET programmes in Denmark, when passing from a foundation to the main course. Many drop out on completion of the foundation course if they don’t find a placement. The interviews noted that there are more dropouts among those who took on practical training (apprenticeship) in the training institution rather than in a company;

(d) in Austria, there are also notable differences between share of early leavers from VET schools, VET colleges and apprenticeships. Within the apprenticeship track, the so called ‘supra-company apprenticeships’ have a significantly higher level of early leaving than regular apprenticeships (32.1% of those enrolled end up as ELET) (Dornmayr and Nowak, 2013). Supra-company apprenticeships are mainly attended by young people who do not manage to find an apprenticeship place; practical training is offered in a training institution rather than in a company. The interviews confirm that these programmes tend to host young people who face greatest difficulties in the education system and so are at higher risk of early leaving, which is translated into higher dropout rates.

Austria is also an interesting case, with some VET pathways more successful at retaining learners than others, or even general education tracks (see Table 4). This is the case for VET colleges, prestigious institutions offering programmes that last longer than other VET or general education and which give access to both higher education and the labour market. They prepare for professions that most countries prepare at post-secondary level (Cedefop ReferNet: Austria, 2009) so they attract different target groups from school-based VET and apprenticeships. It is likely that they attract more high achievers and young people who are strongly motivated.

Table 4. **Dropping out from general education and VET in Austria (students who started in 2008/09 who had not completed by 2013/14)**

<table>
<thead>
<tr>
<th>Austria</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aged 14 in 2010/11 and have not completed lower secondary in 2012/13</td>
<td>3.6</td>
</tr>
<tr>
<td>Ended compulsory lower secondary in 2010/11 and did not start a higher</td>
<td>6.8</td>
</tr>
<tr>
<td>programme in 2011/12</td>
<td></td>
</tr>
<tr>
<td>ELET general education upper secondary</td>
<td>7.1</td>
</tr>
<tr>
<td>ELET VET schools upper secondary</td>
<td>12.7</td>
</tr>
<tr>
<td>ELET VET colleges upper secondary</td>
<td>5.9</td>
</tr>
<tr>
<td>Ended their apprenticeship contract in 2012 and did not continue</td>
<td>12.8</td>
</tr>
</tbody>
</table>

*Source: For apprenticeship data: WKO, 2014.*

Given the presumed important role of work-based learning in VET programmes, the expectation is that ELET from such pathways is likely to be
lower than school-based VET programmes. The data reviewed in some countries, as illustrated in Tables 3 and 4, highlight the share of learners who are ELET from apprenticeships distinct from those in other programmes. To explore this further, the microdata in France and the Netherlands distinguished between those in school-based or work-based programmes, namely apprenticeship schemes.

Figure 12 shows ELET rates from work- and school-based VET tracks in France and the Netherlands. Contrary to expectation, the ELET rate is significantly higher for those who initially started in work-based VET tracks (27%) compared to those who started their upper secondary education in school-based VET tracks (23%) in France. The same is true in the Netherlands: those last enrolled in work-based VET tracks exhibit significantly higher ELET rates (23%) than those from school-based VET tracks (16%).

Figure 12. **Distinguishing between school-based and work-based VET tracks**

NB: Pearson’s chi2 test confirms that the differences in early leaving rates in school-based VET and work-based VET are statistically significant, in both France and the Netherlands. Percentages for France based on weighted data. Data in table format are available on request.

Source: Cedefop.

One possible explanation is a selection issue. VET tracks in general and work-based tracks even more, attract higher numbers of older learners (35). This

(35) Data on the presence of older learners according to the initial track chosen (general education, school-based VET and work-based VET) are available on request for France and the Netherlands.
suggests that there are more learners who repeated classes in these tracks. Class repetition is one of the signs of academic underachievement (see Figure 13). Being older than the average age when entering lower secondary is associated with a higher risk of becoming an ELET (31% of those who are older are ELET compared to 12% of those who are average age in France; 20% of those who are older are ELET compared to 11% of those who are average age in the Netherlands) (see Section 5.3.1).

Figure 13. **Relationship between age and initial track**

![Figure 13](image_url)

NB: France: N= 32 349. Pearson’s chi2 test confirms older pupils are disproportionately represented among VET tracks. Being older than average is defined as having entered lower secondary education at the age of 12 or more in France, and at the age of 13 or more in the Netherlands.

Source: Cedefop.

Work-based VET tracks also welcome fewer girls than school-based VET tracks (30% against 44% in France, 30% against 54% in the Netherlands) \(^{(36)}\).

Other factors contributing to dropping out in apprenticeships that could explain the higher rates of ELET compared to school-based VET are discussed in detail in Sections 4.4.2 and 5.4. These include difficulties finding work-based learning opportunities, learners’ insufficient readiness to work, conflictual relationships at the workplace, difficult working conditions, or business closure.

\(^{(36)}\) Data on gender and other characteristics of learners in work-based VET and school-based VET are available on request for France and the Netherlands.
4.3.3. **Early leaver differences by field of study and profession**

There are major differences in the share of early leavers or related indicators (such as dropping out or class retention) between the different fields of study or sectors.

This section illustrates these differences using data collected in Austria (Dornmayr and Nowak, 2013), the Flemish Community of Belgium (Flemish Ministry of Education Statistics), Denmark (Ministry for Children, Education and Gender Equality, National Agency for IT and Learning- statistics), Germany (BIBB, 2013), and Croatia (Republic of Croatia, Central Bureau of statistics, 2010).

The share of early leavers from apprenticeships in Austria (Figure 14) ranges from 6% in industry to 28.6% in tourism and leisure studies. The share of apprentices who fail their exams ranges between 7.6% in banking and insurance and 21.3% in crafts and trades.

Figure 14. **Dropouts during studies and final exams failure in apprenticeships by field of study in Austria (2011)**

![Diagram showing dropouts and exams failure by field of study in Austria](source: Dornmayr and Nowak, 2013.)

In Germany (Figure 15), the contract dissolution rate in apprenticeships is low in public administration (6.1%) and high in the crafts sector (31.1%).
Examination failure rates also differ: they are low in public administration (6.3%) but high in agriculture (16.7%) and crafts (14.7%). There are also major differences when looking at individual professions (Table 5): the highest contract termination rate is 51% (restaurant manager) and the lowest 3.7% (administrative staff). There appears to be no relationship between the number of apprentices in the profession and the rate of contract termination (BIBB, 2013).

Figure 15. Apprenticeship contract dissolution rates and examination failure by sector in Germany (2011)

Table 5. Premature apprenticeship contract termination rates in selected professions in Germany (2011)

<table>
<thead>
<tr>
<th>Occupations with highest contract termination rates</th>
<th>Termination rate (%)</th>
<th>Occupations with lowest contract termination rates</th>
<th>Termination rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restaurant manager</td>
<td>51.00</td>
<td>Administrative staff</td>
<td>3.70</td>
</tr>
<tr>
<td>Specialist in furniture, kitchen and moving services</td>
<td>50.90</td>
<td>Assistant for media and information services</td>
<td>4.10</td>
</tr>
<tr>
<td>Specialist for safety and security</td>
<td>49.50</td>
<td>Electrician for automation technology</td>
<td>4.80</td>
</tr>
<tr>
<td>Cook</td>
<td>49.40</td>
<td>Aircraft mechanic</td>
<td>5.70</td>
</tr>
<tr>
<td>Protection and safety services</td>
<td>47.00</td>
<td>Bank clerk</td>
<td>6.10</td>
</tr>
<tr>
<td>Beautician</td>
<td>47.00</td>
<td>Technical system planner</td>
<td>6.10</td>
</tr>
<tr>
<td>Cleaning services</td>
<td>44.30</td>
<td>Technical product designer</td>
<td>6.20</td>
</tr>
<tr>
<td>Hairdresser</td>
<td>44.20</td>
<td>Forestry worker</td>
<td>6.50</td>
</tr>
<tr>
<td>Specialist in the hospitality industry</td>
<td>44</td>
<td>Assistant for office communication</td>
<td>6.60</td>
</tr>
<tr>
<td>Professional driver</td>
<td>43.70</td>
<td>Chemical technician</td>
<td>6.90</td>
</tr>
</tbody>
</table>

Source: BIBB, 2013.
That there are variations across countries in the share of early leavers between different fields of study or sectors is a reasonable expectation since employment opportunities in different sectors also vary by country and region. However, there seem to be general trends, such as high early leaving rates in catering and hospitality due to hard working conditions (long working hours and high levels of stress).

A better understanding of which programmes present higher dropout rates and the reasons behind this can feed into more tailored measures to tackle early leaving. Section 5.4.4 discusses the views and experience of interviewees on reasons why some sectors and professions have much higher dropout rates than others.

4.4. **VET as prevention and safety net**

While VET programmes see a significant share of ELET, most of those who start in general education and switch to VET programmes gain their upper secondary qualification. VET can act as a safety net for those who might have otherwise not felt comfortable in general education, experienced failure and potentially become early leavers.

The French Community of Belgium made an analysis of young people’s trajectories during the six years after they entered upper secondary education. The results are interesting for several reasons, the first being that they identify where learners were initially enrolled rather than only the programme enrolled in at the time of ELET. Second, the data also identify those who start in VET or general education tracks but qualify in a different programme; this helps illustrate the extent to which VET pathways play a role in providing a safety net for those who have greater difficulty adjusting to general education and so are more at risk of dropping out. Figure 16 highlights that the percentage not qualified after six years is higher in those initially enrolled in VET pathways (57%) compared to those in general education pathways (8.9%). The data also suggest that almost a quarter of those initially enrolled in general education pathways qualify in a different programme after six years. While the breakdown of which programme they qualify from is not given, this indicates that VET and/or apprenticeship pathways are likely to play a role in preventing early leaving from general education.

This analysis suggests that VET may be recuperating dropouts from general education. It is possible for a young person to start in general education at the point of differentiation between tracks, then experience failure and be reoriented towards VET.
Figure 16. **Student pathways in general education and VET in the French Community of Belgium (longitudinal data six years after start of upper secondary, academic year 2009/10, % (37))**

To examine this phenomenon further, and particularly to examine ELET and completion rates among learners following this trajectory, two further national data sets in France and the Netherlands were analysed. Survey data from France covering all those who finished their education and training in 2004 give

(37) Based on a cohort study of 52 709 students.

the prevalence of the various pathways in upper secondary education shown in Figure 17. While a relatively small proportion of those in general education pathways switch to VET programmes during upper secondary (10% of those initially enrolled in general education), most (79%) of those who make this switch go on to complete a VET qualification (equivalent to ISCED 3). This equates to 5% of all learners who may otherwise have become early leavers.

Figure 17. Pathway analysis, France

Data under ‘Track when entering upper secondary education’ refer to the programme enrolment of learners at the point of differentiation (following a general education or VET programme). In France, all students follow a common programme during lower secondary education, so the point of differentiation is at the transition to upper secondary education.

When looking at a cohort of learners in the Netherlands who began secondary education and training in 2004, and what their qualification status was in 2014 (38), most qualify in the programme they initially enrolled in, as depicted in (38) Excluding those currently in education and training.
Figure 18. A relatively small proportion (7.7% of those initially enrolled in general education) start in general education pathways and switch to VET programmes at some point during secondary school education. As in France, most of those who started in general education but made the switch to VET completed a VET qualification (82.7%). This equates to almost 3% of all learners who started in 2004 that may otherwise have become ELET.

Figure 18. **Pathway analysis, the Netherlands**

<table>
<thead>
<tr>
<th>Track when entering education in 2004</th>
<th>Track loyalty/track change during secondary education</th>
<th>Outcome in 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMBO (pre-VET)</td>
<td>MBO 2+(VET)</td>
<td>MBO 2+(VET) Qualification</td>
</tr>
<tr>
<td>HAVO/VWO (GE)</td>
<td>HAVO/VWO (GE)</td>
<td>HAVO/VWO (GE) Qualification</td>
</tr>
<tr>
<td>DROP OUT during/after VMBO</td>
<td>VET</td>
<td>VET Qualification</td>
</tr>
<tr>
<td>GE</td>
<td></td>
<td>Early leaving</td>
</tr>
</tbody>
</table>

**NB:** Data under ‘Track when entering secondary education in 2004’ refer to the programme enrolment of learners at the point of differentiation (following a general education or VET programme). In the Netherlands, the age of selection is 12, so the point of differentiation is at the beginning of secondary school (with no distinction between lower and upper secondary education). The main figures of this graph are available on request in table format.

VMBO – prevocational secondary education (four years); HAVO – senior general secondary education (five years); VWO – pre-university education (six years); MBO – secondary vocational education. The indication 2+ indicates programmes of level 2 or above in the national qualifications framework (and EQF).

*Source:* Cedefop.
4.4.1. Attractiveness of VET

To further analyse the preventive role of VET, we compared the share of students enrolled in VET and early leaving rates expecting that relatively bigger VET systems will limit early leaving by providing alternatives to academic programmes. This would make correlation between share of VET students and ELET negative.

Three types of indicator were used to assess the relationship comparatively. Data on the share of students in ISCED 3 in the vocational track and data on the share of students in ISCED 4 in the vocational track are monitored by Eurostat and reported yearly. For the analysis, correlation coefficients with ELET based on 2005, 2007, 2009 and 2011 were calculated. As expected, the sign of correlation coefficient with the share of ISCED 3 students in the vocational track is negative: the higher the share of ISCED 3 students in the vocational track, the lower the ELET rate (39).

To provide an alternative, the education and training 2020 (ET2020) indicator on the share of students in ISCED 3 and 4 in the vocational track was used. Data were available for 2009 and 2013 and the correlation was found to be negative and moderate (40).

Based on the ET2020 indicator, those countries with share of VET students in ISCED 3 and 4 equal or above 70% have ELET rates lower than 10%. However, variation of ELET rates is much higher for countries with share of VET students in ISCED 3 and 4 below 70%.

Comparing the information on the relative scale of VET across countries with the EU indicator on ELET can provide an indication of the extent to which a broadly attended VET system can help to limit early leaving. Table 6 groups countries together according to level of enrolment in VET (high, medium or low (41)) and according to the rate of early leaving (above or below the 10% EU target). The grouping shows that:
(a) eight of the 10 countries with high enrolment in VET have ELET rates below the EU target (the exception is Romania);

(39) Data available on request.
(40) Ibid.
(41) This is measured as enrolment in VET as share of all students in upper secondary education (%). Countries with high enrolment in VET have more that 65% of students in VET-oriented programmes at upper secondary level. Countries with low enrolment in VET have less than 44% students in VET-oriented programmes. The cut-off points correspond to values that divide the set of countries into three relatively equally populated categories.
(b) three out of the eight countries classified as having low enrolment in VET have ELET rates above the EU target.

The analysis indicates that while high participation in VET is associated with low numbers of ELET, the inverse does not hold. The countries with low enrolment rates in VET are split equally between below and above EU target numbers of ELET.

Table 6. Comparing ELET rates (LFS, 2013) and enrolment in VET at upper secondary level (2013)

<table>
<thead>
<tr>
<th>Enrolment</th>
<th>Below 10% ELET</th>
<th>Above 10% ELET</th>
</tr>
</thead>
<tbody>
<tr>
<td>High (&gt;65%)</td>
<td>LU, SI, CZ, NL, SK, HR, FI, AT</td>
<td>RO, BE</td>
</tr>
<tr>
<td>Medium (44-65%)</td>
<td>FR, EE, SE, DE, DK, PL, LU</td>
<td>ES, BG, IT,</td>
</tr>
<tr>
<td>Low (&lt;44%)</td>
<td>CY, IE, EL, LT, LV</td>
<td>HU, UK, PT</td>
</tr>
</tbody>
</table>

Source: Cedefop based on ET 2020 indicators and LFS.

4.4.2. Motivational role of work-based learning

When young people choose a vocational programme they are often seeking a learning experience that is practically oriented and situated in the world of work. Work-based learning has great potential to support retention. Apprenticeships have a higher share of work-based learning compared to school-based VET so it is interesting to explore whether countries and regions with higher participation in apprenticeships, have lower early leaving rates.

In Austria, Moser et al. (2016) found a positive influence of the apprenticeship system on retention. They found that the higher the share of students in apprenticeships, the lower the rate of early leaving and that western parts of the country have a higher share of dual education and a lower share of dropouts than eastern parts. This is not so, however, for young migrants, showing the limitations of the apprenticeship system in supporting integration. Also in Austria, comparing two forms of apprenticeships – the ‘traditional’ format and the supra-company apprenticeships, where the practical part of training is offered in a training institution rather than in a company – Dornmayr and Nowak (2013) found that the latter form had higher rates of early leavers.

This study explored the relationship of work-based learning to ELET by analysing three indicators on participation in apprenticeships:

(a) a percentage of apprentices in firms indicator, based on the Cedefop LFS 2008 data in the Directorate General for Education and Culture work-based learning in Europe study;
(b) a percentage of 15 to 29 year-olds in apprenticeship, based on Cedefop data calculated on LFS 2013 data and TEMPREAS (\(^{42}\)) variable;

(c) the incidence of apprentices (%) in the youth population (15 to 29) based on an existing study of the European Commission (2013) based on LFS data. The study classified countries into three categories: high, medium and low incidence of apprenticeships among the overall youth population.

All three indicators of work-based learning have weak negative relationships with ELET (\(^{43}\)). It is observed that countries with high work-based learning tend to have lower numbers of ELET. However, ELET levels vary from very high to very low for countries with low work-based learning.

Despite inconclusive results from quantitative analysis, qualitative research pointed to the relevance of work-based learning in supporting the retention of young people. Several interviewees commented on the motivational potential of work-based learning. Being engaged in a real working process enables young people to construct a meaningful vision of their learning and future, while positive working relationships and valorisation of their work by other employees can be motivating and contribute to positive self-perception:

(a) a supervisor of apprentices in a company in Croatia observed that during their practical training, apprentices get very motivated and eventually open up, in the sense of feeling free to ask questions and make suggestions. Conversation and cooperation is very important as well as the fact that they are appreciated and treated as equal;

(b) a VET school in Portugal increased the hours of work-based learning in a company from 420 hours to 840 hours. The idea was to provide a work placement from the first year of VET and to reinforce the hours of work-based learning overall to guarantee that apprentices are trained well enough to integrate into the labour market after certification. It was also a measure developed to increase the motivation of students in their first year of VET;

(c) interviewees generally agreed that work-based learning offers a good context for development of a professional identity, which is associated with greater retention. This is created through the authentic interaction between the young person, his/her colleagues and the trainer/mentor and company leadership. This is one of the reasons why VET-specific measures to prevent


\(^{43}\) Correlation coefficient ranges from -0.24 to -0.15 depending on the indicator. Data are available on request.
or address early leaving frequently integrate work-based learning (see Cedefop, 2016, Volume II).

4.5. **VET as remedy**

Section 4.2 already highlighted that there is some permeability of education pathways, with opportunities to learn and continue education in the event of uncompleted qualifications. Looking at the whole pool of 18 EU and EEA countries, about one in three (36%) young people aged 16 to 34 not currently in education or training, who dropped out during upper secondary education or below, achieved an upper secondary qualification or higher (\(^{44}\)). Survey data in France confirm this trend: almost a third (\(^{45}\)) of those who were ELET at the time of leaving education and training in 2004 had achieved at least an upper secondary qualification seven years later.

This means that not all of those who experience a dropout event become early leavers from education and training but most do, highlighting a number of key issues. Either not enough early leavers are actually reached by compensation measures or it is the measures themselves that are not effective at qualifying young people to at least upper secondary education. Compensation measures may not be designed in such a way as to lead to formal qualifications at ISCED 3 or above; they may lead to informal qualifications which would not be captured by the data, or oriented learners towards employment outcomes rather than qualifications. It may also be the case that compensation measures are also suffering from ‘dropout’ with learners disengaging before reaching a formal qualification.

For those who drop out but achieve at least an upper secondary qualification, and so are not considered early leavers in the statistics, there is value in looking at whether these qualifications are through VET or general education pathways. This provides some indication of the potential remedial role that the formal VET system can play in reengaging those who dropped out.

\(^{44}\) See Figure 4, Section 4.2 Note that it was not possible to disentangle the exact timing of qualification in the data set. Therefore, in some cases, it may be that the person achieved an ISCED 3 qualification, started another ISCED 3 qualification and did not complete it.

\(^{45}\) 31% (confidence interval of 27 to 35), see Figure 20.
The PIAAC data set suffers from limitations (46) on its ability to provide information on the degree of dropout from VET programmes and the contribution of VET to the achieving upper secondary education. Despite these limitations, it is possible to look at the subsample (8.7%) of those who said that they dropped out during ISCED 3 or below (47) and to see what their resulting highest qualification is. It is also possible to determine, to some degree (48), what the orientation of that qualification is, to establish to what degree learners qualify from VET pathways after dropping out.

Based on PIAAC data for EU and EEA 14, looking at those who experienced uncompleted qualifications during upper secondary education or below (49) that qualified at least upper secondary education (50) (3.4% of all young people), most gained a VET qualification. This accounts for 2% of all young people, 23.7% of those who dropped out during upper secondary education or below, or 58.8% of those who dropped out during upper secondary education and qualified at least upper secondary education) (51).

(46) PIAAC does not contain information about the orientation of the programme from which the individual does not complete qualification. Nor is the timing of dropout discernible, so it is not possible to distinguish between those who completed an upper secondary qualification and subsequently started another upper secondary programme they did not complete, or whether they dropped out of a programme and then subsequently achieved an upper secondary qualification.

(47) Due to the design of the survey, whereby those currently in education and training were not asked if they had ever dropped out, the operational definition of dropout identified within PIAAC refers only to those who are not currently in education and training.

(48) For those whose highest qualification is ISCED 5 or above, it is not possible to discern whether they followed a pathway via VET or general education before obtaining their ISCED 5 or above qualification. In four countries (Belgium, Denmark, Italy and Sweden), the data were not distinctly coded into VET or general education (GE) as it was not possible to distinguish some of the qualifications. Therefore, for those countries, the data included a category where the orientation of the ISCED 3 qualification is unknown. Given the unreliability of the shares of young people qualifying through VET or general education in those countries, they are excluded from the following analysis.

(49) Young people aged 16 to 34 who dropped out at ISCED 3 or below.

(50) Achieved ISCED 3 or 4.

(51) A detailed breakdown by country is available on request.
Figure 19. **Destinations of young people (aged 16 to 34) who experienced an uncompleted qualification at ISCED 3 or below in 14 EU + EEA countries (PIAAC)**

The survey data from France also reinforce this pattern, as illustrated in Figure 20. Among the 31% of those who were early leavers and went on to obtain a qualification, 80% graduated from VET upper secondary tracks. Only 5% graduated from general education tracks. The remaining 15% graduated from higher education with their prior pathways unknown in terms of their orientation. The picture is similar in the Netherlands. A total of 80% of the initial early leavers who returned to education and training and qualified obtained a VET qualification; 27% of them achieved this within seven years.

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(52) The French Generation 2004 survey includes as an early leaver all those: under 35; who were enrolled in a training institution in France in 2003-04; who have not returned to school the following year; and had never interrupted their studies for a year or more before that date.

(53) 75 to 85 confidence interval.

(54) In the Dutch data, a person was considered an early leaver for the purpose of this study when s/he attended a secondary programme in 2004 and in 2014 was not in education and did not have a general secondary education qualification (HAVO/VWO) or a secondary vocational education level 2 or higher qualification.
Comparing where students originated when they dropped out and became an early leaver is not possible with the PIAAC data but is possible with the survey data in France and the administrative records in the Netherlands.

Among those who dropped out during lower secondary school before pathways into VET or general education were distinguished in France, 31% reintegrate back into education and training and complete within a seven-year time frame. For those early leavers from lower secondary education who return to education and training and complete a qualification in the following seven years, this is almost exclusively an upper secondary VET qualification (91%). The same is true for the Netherlands (86%).

For those who had made the transition to upper secondary VET education but then did not initially complete their programme and were ELET, 24% reintegrated in the following seven years and completed a qualification in both...
France and the Netherlands. This compares to around half the number of general education programme students who were initially ELET (49%) and then go on to complete at least an upper secondary qualification. It suggests that drop out may be more persistent for those leave VET programmes than general education programmes; the latter being more likely to return to education and training and complete a qualification.

Regardless of the rates of return and completion, VET plays an important role for those who make the decision to reintegrate and go on to complete a programme, including for those who had dropped out from general education. Though this is true in both France and the Netherlands, the remedial role of VET is even stronger in France. In the Netherlands, 30% of initial general education early leavers obtain a VET upper secondary qualification after seven years. In France, 64% of the initial general education ELET who are completers within seven years do so through VET (see Figures 21, 22 and 23).

Figure 21.  Remedial pathway analysis among lower secondary dropouts, France and the Netherlands

NB: For those who attained higher education, there is no information on the track (general education/VET) followed at secondary level. Data in table format are available on request.

Source: Cedefop.
Figure 22. **Remedial pathway analysis among upper secondary dropouts from VET or general education pathways, France**

NB: [- ] displays confidence intervals associated with percentages. The N displayed are related to the actual number of observations in the sample and not to the weighted counts. For those who attained higher education, there is no information on the track (general education/VET) followed at secondary level. Data in table format are available on request.

*Source: Cedefop.*

Figure 23. **Remedial pathway analysis among upper secondary dropouts from VET or general education pathways, the Netherlands**

NB: For those who attained higher education, there is no information on the track (general education/VET) followed at secondary level. Data in table format are available on request.

*Source: Cedefop.*