European Commission

ANNEX 4

EXPERT GROUP ON GRADUATE TRACKING

Task force 4:

Principles and Standards
for VET Graduate Tracking

Education and
Training

Contents

1.0 Introduction

This document was produced by the vocational education and training (VET) members of the expert group. It is based on their experience of national systems, current policy objectives and reading of recent research. It has been produced to support countries or regions to develop or strengthen their graduate tracking systems.

In order to strengthen the quality of existing skills systems, and ensure they respond to the changing needs of the labour market, governments need robust labour market information (LMI) and the ability to use the available data to achieve their policy objectives. As part of a sustainable and efficient LMI system, good quality information from tracking systems can provide a better understanding of graduates' performance in the labour market and their progress to further training or study. The Council Recommendation describes how effective tracking systems are one way to review and improve the **quality** and labour market **relevance** of graduate programmes. They can also support better **forecasting** of the supply and demand for skills and competences; provide better **information** for stakeholders including learners and education/training providers; and support **policy development** at the system and provider level.

This document recognises that some countries have already established a legal requirement for learners' progress to be tracked; and that there are different approaches to VET graduate tracking and each has its own advantages and disadvantages. As such the document is not prescriptive; it aims to provide guidance which is useful for all graduate tracking systems.

The available literature on existing experiences and practice is limited. This led VET members of the expert group to identify a set of **principles and standards,** which can:

> guide those responsible for designing and implementing tracking systems;
> encourage self-reflection and self-evaluation;
> facilitate the development of comparable European data.

The **principles and standards** in this document can, when taken together, provide the basis for designing or strengthening the quality of existing graduate tracking systems. It was produced with VET in mind, but can also be used for Higher education (HE) graduate tracking.

2.0 Principles for graduate tracking

Principles can be seen as fundamental to the development and strengthening of graduate tracking systems. They enable long-term trends to be established and analysed; and they create a framework for the strategic direction of a graduate tracking system. A graduate tracking system should:

1. ***put the learners' right to high quality, inclusive relevant and efficient education and training at the centre of the tracking process.*** *This could be seen through the production and dissemination of information that enables graduates to make informed decisions about which programme to study and which sector to seek employment. Moreover, information produced to enable policy makers, agencies and providers to better design and organize learning opportunities, is for the learners benefit. Graduate tracking systems should contribute to the putting in practice of the first Chapter of the European Pillar of Social Rights, with special focus on the right to quality education, training and lifelong learning and to active support to employment.*
2. ***be underpinned by a quality assurance system*** *which is based on methodologically sound and sustainable data production systems which facilitate data analysis. The necessity of quality assurance refers to the whole process including the decision making based on the graduate tracking information e.g. reviewing enrolments, financing VET systems, accreditation of programmes and institutions etc;*
3. ***respect private information in line with the data protection rules and ensure confidentiality for all learners*** *who are tracked;*
4. ***demonstrate clear links with other education policies****. There is a need for overarching education policies in times. Upskilling and reskilling of adults is pivotal, resulting in the multiplication of providers and programs and therefore the need for a sufficiently wide selection of quality assured non-formal continuing VET (CVET) programs. Borderlines of traditional educational sectors are blurring. More and more HEI's are providing courses for adults and VET is provided on levels 6 and 7 by hybrid institutions. etc.*
5. ***supplement other sources of intelligence to support the evaluation, planning and governance of complex skills systems.***
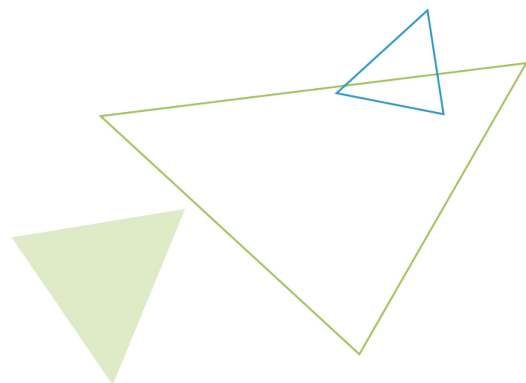
3.0 Standards for graduate tracking

Standards provide practical guidelines for those seeking to design or improve tracking systems. These standards are based on a synthesis of good practice, current know-how and emerging ideas relating to tracking. Taken together, they enable the effective operation of a graduate tracking system in line with the principles set out above.

Tracking systems should:

1.   contribute to the agreed objectives of the VET system
2.   aim to cover all initial and continuing VET programmes
3.   aim to provide quality data on the full graduate population
4.   enable comparative analysis between subgroups of learners
5.   use comparison groups
6.   be based on multiple measurement points in order to create a longitudinal analysis
7.   define desired quality of the tracking information and use quality assurance to support the graduate tracking system
8.   ensure that information from graduate tracking systems is accessible in a form which meets the agreed needs of stakeholders and social partners
9.   strengthen cross-border partnerships by including graduates who move to another country following the completion of their programme
10. contribute to EU level cooperation in VET
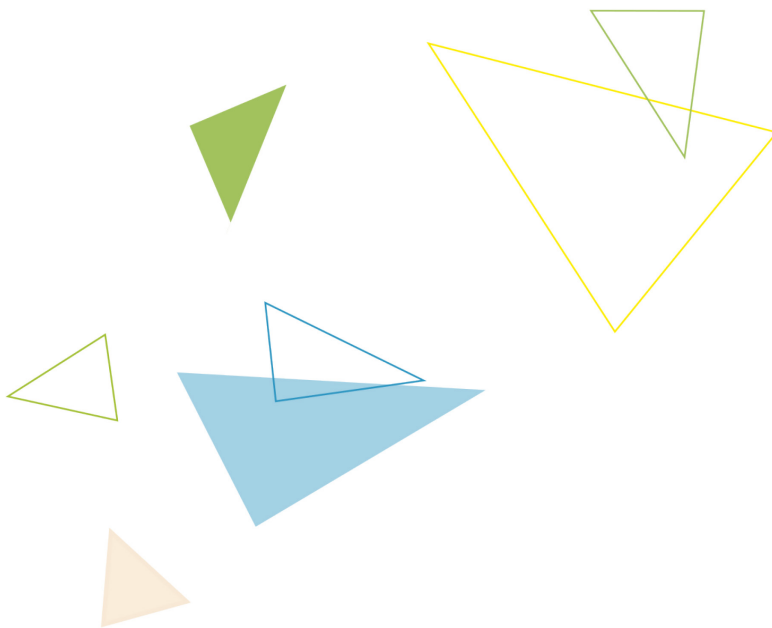
4.0 Explaining the standards

The following section is based on The Council Recommendation and Member States' experiences of developing their tracking systems.

4.1 Standard 1 – contribute to the agreed objectives of the VET system

Action: This standard invites those who are establishing or improving tracking systems to work with social partners and other stakeholders to agree the objectives of a tracking system.

Across Europe, VET is organised in different ways and consequently each Member State's graduate tracking system needs to take account of these differences. The results from graduates tracking systems, based on how VET is organised, can be a basis for policy development and reflection.

4.1.1 Reaching strategic agreement with stakeholders and social partners

Graduate tracking is a complex policy instrument, which requires a number of strategic decisions. These need to be taken in partnership with **stakeholders and social partners**, such as VET providers' organisations, VET staff associations, Chambers/Sector Councils, employers' organisations, trade unions, government agencies.

This complexity requires careful and detailed planning. **Strategic agreement** has to be reached on the following questions before launching a graduate tracking system:

> what are the objectives of graduate tracking;
> which stakeholders will use the data, how will they use the data and what are the data needs of different stakeholders;
> how to handle limitations on the availability, accessibility or quality of the data
> how will any potential legal obstacles associated with collecting, producing, analysing, disseminating or using data be addressed;
> are the financial arrangements for the tracking system sustainable and is human and IT capacity available to support the tracking system;
> what are the responsibilities of the participating organisations in data collection/sharing and producing tracking information, as well as disseminating the results;
> how to link national evaluations and national research to graduate tracking.

Agreements on how to use the data before it is collected inspire confidence and develop trust e.g. if the statistics, the analysis of the statistics are to be made public or used for policy decisions, it is important that this is known to those who submit data or respond to surveys. These types of agreements can support policy makers through greater transparency, and encourage organisations to participate in the process.

4.1.2 Possible aims for a graduate tracking system

The Council Recommendation identifies possible objectives or aims for a graduate tracking system. These emphasise the need for alignment between graduate tracking and VET policy e.g. if the VET policy encourages and promotes higher level apprenticeships, the tracking system needs to ensure it collects this data and provides information to monitor and review the VET policy.

Agreeing the tracking system's objectives before it is introduced is more likely to lead to success and identify indicators/measures, which can be used to monitor the performance of VET graduates. Gaining clarity on the

objectives of a tracking system identifies which data needs to be collected, e.g. different data would be needed for each of the following objectives:

> to analyse the performance of the VET system[1] and the outcome for graduates of individual VET providers;
> to report on the employability of VET graduates in general and from different programmes[2] ;
> to support VET, individual VET programmes and improvements in the curriculum or qualifications;
> to make strategic decisions in relation to funding existing programmes or developing new programmes;
> to support the monitoring of lifelong learning or other education and training policies;
> support better forecasting of the supply and demand for skills and competences;
> to identify the perceived effectiveness of different ways to learn/train in relation to labour market outcomes;
> to support careers guidance for prospective learners, parents, employers or other stakeholders.

For each of these aims, multiple sources of information are needed, both quantitative as graduate tracking statistics, and qualitative information. Therefore, it should be discussed how graduate tracking information can be used together with other information.

See Standard 4 for information on possible policy questions for the tracking system to answer.

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[1] Graduate tracking information can be used for more complex evaluations. An Australian example shows how the information feeds into advanced calculations on the returns on investment. For more information, see https://www.ncver.edu.au/__data/assets/pdf_file/0050/9659777/ROI-TVET-Practical-Guide.pdf.

[2] ISCED Definition of an educational programme (https://www.oecd-ilibrary.org/docserver/9789264279889-8-en.pdf?expires=1591091963&id=id&accname=oid031827&checksum=927B5C15D1C627DBA261AEE4B3913D2F)
The basic units of classification in ISCED are the national (and subnational) education programme and the related recognised educational qualification. An educational programme is defined as a collection of educational activities, which are organised to accomplish a predetermined objective or the completion of a specified set of educational tasks.
The term "educational activities" has a broader meaning than terms such as "course" or "class". Educational activities can be courses (e.g. the study of individual subjects) organised into programmes or free-standing courses. They can also include a variety of components not normally characterised as courses, for example periods of work experience in enterprises, research projects and the preparation of dissertations. Objectives could include preparation for more advanced study, the achievement of a qualification, preparation for an occupation or range of occupations, or simply an increase in knowledge and understanding.
An educational programme could be the study of a single subject leading to a recognised qualification or it can be the study of a collection of subjects, along with perhaps a period of work experience, all of which contribute towards the same qualification aim.

National educational policies

At a national level, the tracking information is used to monitor educational policy and inform the national representatives of political parties. Important are the legal arrangements, which also gives the ministry a role in ascertaining that certain graduate tracking information should be available in a sustainable way.

Research on certain topics

Microdata is available at the national office for statistics (CBS) in a secured environment for researchers. Research institutions can be requested by both ministries and educational providers to do research on a certain topic and graduate tracking data can then be an important source of information.

Career guidance

For instance; VET institutions are obligated to provide (prospective) VET students with objective information about the labour market prospects of publicly financed (formal) VET programs (f.i. the percentages of graduates at work). A government institution also provides this information on a website for (prospective) VET-students who have to make a choice of study (see; www.kiesmbo.nl).

Which programs to offer

Public VET-institutions are legally obligated to only offer vet programs, which have enough labour market relevance. This is quantified in indicators with a signaling value and monitored by an independent commission. Information is publicly available at the institutional and program level and so vet-institutions can use this information in their quality dashboards (see https://public.tableau.com/profile/centraal.bureau.voor. de.statistiek#!/vizhome/DashboardMBOuitstroom/Welkom). The graduates' confidentiality is guaranteed as no low numbers are published.

Quality assurance of VET programs

The inspectorate also makes use of tracking information for quality assurance.

Curricula development

On the system level, the information provides feedback on the transition of graduates to the labor market for the curricula development and/or its revisions. Analysis is provided for various fields and categories of education and so stronger and weaker parts of the education are visible.

There is a whole set of analytical data that are taken into account when revising and developing curricula. These data contain information about the development of the educational structure, e.g. the number of pupils and graduates in each field of study, development of the labor market and information about unemployment of recent graduates. Furthermore, the match of education and employment is evaluated.

Concerning the tracking of graduates, the survey contains questions that provide feedback on the content of education and skills obtained. The graduates are asked about reasons of their choices and their career path. We also address the usage and evaluation of the skills obtained in the light of their career path.

Using these types of information, we are able to pinpoint weak and strong parts of the education obtained and focus on the areas that are lacking behind. An example for this is the need for ICT curricula development, which is now taking place.

There are also sector and field specific studies and analysis being made. These studies focus on the situation in specific fields and combine information from the labor market and education match mentioned above.

Career guidance

Relevant information is also (in combination with other analyses) available to the public through information system focused on career guidance for students participating on basic and secondary education. Using the information system informed decision on educational path are made.

Information gathered from surveys is provided to various recipients (varying from ministry of education and various social partners to learners themselves and their parents) and put to the wider context comprising of other types of analysis.

4.1.2.3   Using graduate tracking data for funding –
Examples from Ireland, Slovakia and Estonia

Ireland

Graduate tracking in Ireland is embedded in Strategic Performance Agreement that are tied to funding negotiations. The Targets are set between the Department of Education, SOLAS and the Department of Expenditure and Review.

Slovakia

In Slovakia, graduate tracking data is used to indicate VET study programmes with excessive supply and programmes with insufficient inflow of graduates into the labour market. This information feeds then into the funding model and schools and their establishers are financially encouraged to open in-demand programmes and not to open programmes with excessive supply by per capita funding 10% higher or lower. Furthermore, pupils in programmes identified as programmes with insufficient number of graduates are provided with a motivational scholarship.

The Ministry of Education uses graduate tracking data to identify upper secondary VET study programmes with excessive and insufficient supply of graduates. The methodology behind them is agreed by relevant stakeholders and includes two main criteria:

> unemployment rate of graduates
> difference between forecasted additional need of employees and projected number of graduates for each study programme.

In previous years lists were elaborated at national level. However, to better take the situation on regional labour markets into account, this year, for the first time, they were elaborated at regional level. Administrative data on VET graduates are used to calculate unemployment rates of graduates at study programme and regional level.

Estonia

Graduate tracking data in Estonia is used in order to inform the public, making data-driven decisions in state as well in institutional level and also in policy making process. In the case of latter, the data is used for assessing the impact and effectiveness of educational system, as well for performance-based funding of higher education institutions. Performance based funding constitutes 20% of activity support of higher education institutions. 17% of this 20% constitute performance-based indicators (6 altogether). One of the performance based indicators is named as "graduates who continue their studies to the next level (e.g. after graduating ISCED 6 level they continue their studies at ISCED 7 level) or are working after the graduation". Under the status "working" also those graduates who are in military service or parental leave are included. Share of this indicator is 3,4% of total funding. There is an intention to implement performance based funding similarly to higher education also in vocational education (see also https://www.riigiteataja.ee/en/eli/ee/Riigikogu/act/517072020005/consolide).

In Germany, the micro census is used to gain insight into the transition from education to employment. This information feeds into a forecasting model. This is an example for how graduate tracking information can support forecasting.

The BIBB-IAB qualification and occupational projections forecast the development of labour supply and demand until 2040, differentiated according to 141 occupational groups (three digits) in the 2010 German classification of occupations. The baseline projection reflects labour market developments if existing trends and behaviour are maintained in the education system and in the economy. Based on the results, indicators are calculated that reflect the skilled personnel situation in the future.

The results of the labour market projections are used within the framework of the skilled worker monitoring of the Ministry of Labour and Social Affairs to identify imminent shortages of skilled workers.

The databases of the projections include the German Microcensus, statistics on employees subject to social insurance contributions and aggregated data from the Federal Statistical Office on the education system and national accounts.

4.1.3 Data in the interest of the learner

In line with the principles in this document, it is important to generate data, which is in the interests of the learner. **Data is often sensitive and personal** (e.g. learners' socio-economic background, learners' family circumstances), and collecting such data by surveys **may alienate learners** (e.g. questions on nationality or citizenship, questions on democratic values). These more difficult areas can be managed when there is an agreed process to decide whether each piece of data will be used and who will use it. This process could involve the presentation of a use case to justify why each question or piece of data should be part of a tracking system. Designers need to gain agreement on how a piece of data will be used (and why this use is valuable) before the item is collected. Arguments based on 'it would be nice to know' are insufficiently robust to justify including an item in a tracking system.

Experience has shown that learners are more likely to answer surveys when the VET provider is making contact compared to centrally organized surveys. On the other hand, there might be practical and legal problems coming with involving providers. This should be taken into account when designing the data collection process.

4.1.3.1   Drop-out or early leaver?
             Recommendations from Ireland

The wording around describing learners who started on a course but left early was part of discussions on what data was needed to evaluate graduate outcomes.

The discussion took place between SOLAS and ETBs (providers) as well as other external stakeholders such as the Department of Education and Skills, Department of Welfare, Department of Public Expenditure and Reform, the Central Statistic Office, the Higher Education, etc. As ETBs are closer to the learner, they asked changing the term "drop-out" to "early leaver" as they thought it was offensive to learner. Therefore, the data collection system, PLSS, and the Learner Detail Form and all reporting was changed accordingly to adopt the word early leaver.

4.2   Standard 2 – aim to cover all initial and continuing VET programmes

Action: This standard invites those who are establishing or improving tracking systems to decide which parts of the VET system that should be covered.

VET is organised differently in the Member States. Some organise VET mainly in full programmes leading to a specific occupation, some have freestanding learning units opportunities, which can be combined in a more flexible way. This may also differ between initial and continuing VET.

4.2.1   Deciding which qualifications to be covered

This standard focuses on which VET programmes to cover. It recognises that as the education and training sector becomes more data-driven, **it is important to have a long term strategy to include all nationally recognised (i.e. included within the National Qualification Framework or other system) formal and non-formal programmes**. The Council Recommendation states that tracking systems should cover all education activities offered at EQF level 4 or above. This implies tracking initial vocational education and further vocational education. In some MS vocational education is offered at lower EQF levels and these MS should consider to include lower EQF level learning activities as well. The changing world of work is requiring most of the adult population to re-skill and up-skill regularly. In this context governments will want evidence to evaluate the relevance and effectiveness of training.

With the introduction of the European Qualification Framework and with validation of learning, focused shifted from programmes to qualifications. Qualification focusses the result of learning, programme focusses the learning content. In this document, for simplicity reasons, we mainly use the term "programme" as graduates from a programme are holding qualification. Therefore, for graduates, programme and qualification are congruent. Non graduates on the other hand, do not hold the qualification, if they haven't obtained it a different way (e.g. validation or non- formal learning).

When deciding what qualifications, or programmes, to include, a main aspect should be the investment, both by the government and by individuals or other stakeholders such as employers. The more money is invested in terms of long and expensive programmes and the larger the number of students, the more important is graduate tracking. This means initial VET (IVET) leading to complete qualifications should be included as a minimum.

Regarding formal programmes, if information is only available on a selected number of programmes, it will limit the understanding of impact of policies, systems and interventions. Instead, linking tracking measures in a systematic way and bringing together **information on all VET programmes** can provide valuable information on the effectiveness of education and training policies.

CVET graduates are the least covered by systemic measures and there is considerable room for improvement across nearly all benchmarking criteria (coverage, quality of data, longitudinal, dissemination). When considering how to improve graduate tracking of CVET, the variety and complexity of qualifications covered have to be taken into account, especially when developing standardised data collection tools. The high number of providers and the diverse range of courses available across CVET make standardised data and standardised tracking less straightforward. Moreover, CVET is often more decentralised in Member States compared to IVET. The very first step is to develop a coherent national database of qualifications and to secure that it is updated according to continuing reforms in the national system of qualifications. Until now, CVET measures usually cover only certain providers or certain types of training. Most frequently these are:

> subsidised by the government/provided publicly,
> target graduates of upskilling/reskilling programmes as part of Active Labour Market Policies

> target graduates of programmes that offer formal qualifications (or those that at least are quality assured/registered by the state).

Decisions about the inclusion of programmes need to take account of the objectives of the graduate tracking system and its role in the management of the VET system. Long-term planning is essential and needs to consider ethical, legal and security issues. **Including graduate tracking in a national education and training strategy** helps to increase the public's understanding of VET and enhance the transparency of the value of VET programmes.

4.2.1.1   Which qualifications to include –
Examples from Ireland and Sweden

Ireland

Currently Ireland tracks learner outcomes for all programmes that have a labour market or progression focus. This leaves out courses that have transversal skill focus (i.e. employment and progression outcomes are not suitable measures for e.g. for Community Education).

The purpose of the graduate tracking in Ireland shaped the sample of graduates whose outcomes were to be analysed. The purpose initially was to give a new strategic direction to the sector in their provision and encourage provision where there are skills shortages flagged. The graduate outcomes inform progress in six target areas (employment, progression, certification, lifelong learning participation, starts in traineeship and apprenticeship, learners with skills in areas where there are skills shortages) and form part of the Strategic Performance Agreements between the ETBs and SOLAS. The graduate outcomes is expected to become part of a funding formula that is to be developed.

Sweden

All formal qualifications are part of a tracking scheme, which was developed by Statistics Sweden during 2019/20. This means all IVET and CVET programmes regulated by law are covered. Programmes for students with intellectual disabilities are excluded, but as it recently became legal to collect microdata on this group, they probably will be included in the future.

Concerning programmes not regulated by law (=non-formal programmes), we are waiting for more qualifications to be included into the NQF. In the meantime, we conduct some graduate tracking of programmes offered by folk high schools. These are independent providers, which are funded by the public, and the programmes have no regulated qualification level to attain. Many of these programmes have high labour market relevance and others prepare for higher education in the area of art and culture. Training programmes for unemployed financed through the agency of employment, is regarded non-formal and not included into the tracking scheme at the moment. The same applies to ESF financed programmes.

4.2.2 National Qualification Framework and non-formal qualifications

As the need to respond to digitalisation and greening of the economy as well as aging of societies, non-formal learning opportunities are becoming an important element of reskilling and upskilling of the adult population. While previously provided in a market-based context, non-formal VET program are likely to represent a more substantial part of programmes financed by governments. With funding tools like Individual Learning Accounts, the market is likely to expand which calls for an increased need to find the right tools to quality assure these provisions and monitor their effectiveness. However, a typical obstacle reported by experts is the lack of a central register to allow for the collection of data.

The question was raised in the Task force what role national qualifications framework play in designing graduate tracking systems. While the connection between the two tools is not yet fully exploited, it is clear that registers and databases that contain the information on the NQF level of the programme can give rise to additional researches and considerations in further developing skills intelligence systems.

The degree to which **non-formal qualifications** are included into the **National Qualification Framework NQF** differs between member states. Is seems most common though, that only formal VET is included in the graduate tracking systems. As more non-formal qualifications are added to the NQF's over time, it should be considered to what degree these qualifications should be part of the graduate tracking system and who is to finance it.

4.2.2.1   Graduate tracking of non-formal qualifications is a future question – Example from the Netherlands

There is not a central register about non-formal qualifications as they are not public financed and there is no legal objective. There are different surveys which give mainly national information on graduates from non-formal qualifications. Attention is focusing more on a broader perspective (so including also non-formal qualifications) because of policies on lifelong learning. There is a huge commercial market for non-formal qualifications, which would make it also very difficult to register centrally (and also at individual level with all sorts of privacy issues). The ministry of social affairs together with the ministry of education are developing a register in the coming years with all formal and non-formal qualifications (for so much as non-formal educational providers will contribute to this register and containing only information about the providers and courses, so not at an individual level). The reason for this initiative is a changing legal arrangement (civilians can ask for a subsidy for following education). An important rationale for having a good central registration is that there should be a benefit for the contributors (educational providers), which in this case are potential applicants.

4.2.3 Partial qualifications or modules/units

The issue of including partial-qualifications or modules/units into the tracking system, is not VET-specific. There are some ongoing works in tertiary education with the appearance of micro-credentials and their quality assurance. In general, this calls for the increased attention on graduate tracking measures and aligning monitoring policies and tools within education and training systems. More specifically, the issue of including shorter learning units in the tracking system is especially important for CVET, as adult learning is gaining in volume and importance.

Graduate tracking of shorter courses implies the need to adjust graduate tracking measures. Therefore, the policy questions suggested by Task force 1 should be discussed from this perspective and measures and methods need to be developed. Policy questions should include the value of training in terms of job related benefits (e.g. set up or expanded their own business, got a promotion, gained extra skills for their job, increased earnings).

Regarding formal courses, member states should consider if there is a need to include partial qualifications or modules/units and in which way. Regarding non-formal courses, member states have to decide if non-formal qualifications are relevant to include. If relevant, it has to be decided which qualifications to include in the tracking system, as these qualifications need to be captured in a qualification register. To give the full picture, both private providers and companies should be considered.

In ESF, many non-formal programmes are monitored. Linking the measures is recommended by the mapping study.

4.3 Standard 3 – aim to provide data on the full graduate population

Action: This standard invites those who are establishing or improving tracking systems to consider including the full graduate population.

Tracking systems can be strengthened by increasing the number of population groups e.g. by adding more VET programmes to the tracking system as set out in Standard 2, by increasing the number of relevant questions/variables, or by increasing data quality, e.g. by increasing the response rates from the agreed population groups. Each is an appropriate strategy for strengthening an existing tracking system.

However, to establish a comprehensive graduate tracking system, it is recommended to cover **all graduates in a particular population group**, e.g. all graduates from a certain EQF level a certain academic or calendar year.

VET graduate tracking systems should aim for the extensive use of administrative data. Registers and databases provide a very significant amount of data and they have the advantage of usually being based on the **total reference population**.

However administrative systems cannot provide information on all areas of interest to policy makers, social partners and other stakeholders e.g. on learners' perceptions of their VET programme, the reasons for not completing a VET program, motivation to migrate after graduation. **A tracking system, which combines administrative and survey techniques, is most likely to provide a full set of quantitative and qualitative information**. When surveys form a significant part of the tracking system, they should take account of learners' motivation to complete on-line, app-based and paper-based questionnaires. Learners' motivation is influenced by who asks for the survey to be completed, when the request is made, whether the learner has gained employment or started further study, the extent to which they believe the data is anonymous and actions will follow on the basis of feedback etc.

4.4 Standard 4 – enable comparative analysis between subgroups of learners

Action: This standard invites those who are establishing or further developing tracking systems to improve the comparability of data of national graduate tracking measures and to conduct comparative analysis as part of the monitoring and evaluation education and training policies. This means identifying what programme specific variables need to be collected.

4.4.1 Identify policy questions

When thinking about establishing or further developing graduate tracking systems and measures, it is helpful to identify what **policy questions** will be answered by the collection of the data. Some policy questions may focus on the consistency between provisions and effectiveness of VET programmes e.g.:

> are learners on a particular programme more or less likely to gain employment;
> are learners on a work or school-based programme more or less likely to gain employment;
> does a period of transnational mobility help learners to gain employment;
> are graduates on a particular programme gaining employment in their field of study and at adequate level of qualification (vertical and horizontal matching);
> are graduates on a particular programme taking more time to gain employment in their field of study;
> how successful (in terms of completing programmes, graduate earnings and employment etc.) are learners from different socio-economic groups.

To enable comparative analysis across different provisions, data should be comparable. The comparability of results can provide more evidence to decision makers and contribute to an overarching monitoring and evaluation system in the field of education and training. This requires that key criteria of the data collections – such as the definitions applied, the variables collected and periodicity – are harmonised across national level measures.

4.4.2 Programme variables to consider

When planning the scope of the graduate tracking system, the following aspects of initial and continuing VET programmes should be considered. It is helpful to review whether there is available **data for each of the following programme variables** and would its inclusion in the graduate tracking system help to achieve the policy objectives.

> level of the qualification offered by the programme: EQF or NQF level;
> type of qualification offered by the programme: full or partial qualification (or units, modules or micro credentials);
> field of study;
> mode of provision: full-time or part-time programmes;
> type of provision: school-based, work-based or apprenticeship programmes;
> length of the programme which could be based on ECVET or the programme length in terms of weeks/months/years;
> teaching hours;
> nature of a programme: formal or non-formal learning;
> form of learning: face-to-face programme, distance learning, e-learning, self-study or a balance of pedagogic approaches;
> language of learning, might be most relevant in multilingual countries;
> content of the curriculum: i.e. does it include voluntary work, opportunities to study abroad, the development of behaviours or values etc.;
> sources of finance e.g. EU, state, employer, self-funding or a combination of funding.

4.4.3 Socio-economic variables to consider

Considering socio-economic variables is especially important for VET as the profile of the learners might differ a lot between different programmes. Experience shows that this shows in the labour market results, e.g. older learners might experience difficulties to get employment after graduation despite them having the same qualification as younger learners. Therefore, it is important to include socio-economic variables into the analysis of the graduate tracking results.

A list with socio-economic variables is part of the Council Recommendation.

4.4.4 Granularity (level of detail)

A question to discuss when designing graduate tracking is the required granularity of the statistics as it has implications for the choice of data collection method. It should be considered if tracking information is needed

> centrally;
> for different regions;
> for smaller geographical units;
> for providers;
> for particular programmes provided by particular providers.

The more detailed the information is supposed to be, the more data is needed. This is typically no issue when using administrative data, but it has impact when designing surveys. If detailed data is needed, it should be

considered which role the providers could have. Furthermore, as stated earlier, experience has shown that learners are more likely to respond to a survey if their education provider contacts them.

Combining administrative data and survey data is a way to avoid overloading the individual with questions that are available in administrative sources and avoid survey-fatigue.

4.4.4.1   Piloting VET graduate tracking in Bulgaria

VET graduate tracking has not been established yet on a system level. There are some initiatives at regional and at provider level and the results are mainly used for design of VET admission plans (meaning how many students to admit in which programmes).

A pilot project under the Erasmus + programme (2019-2021) with a beneficiary Ministry of Education and Science (MES) foresees the development and testing of a mechanism for graduate tracking, which combines administrative data and a sociological survey. Piloting covers three districts (NUTS III) - Vratsa, Stara Zagora and Burgas (out of 28 in total). It targets IVET at school level with all VET graduates in 2017 and 2018 in all vocations relevant to EQF level 2 to EQF level 4 from the pilot districts. In relation to labour market employment data, the national classification of occupations will be used, which is linked to ISCO and NACE.

The pilot model aims at creation of a prototype for application of tracking measures. The results might be used for different purposes – design of evidence based admission plans for the upcoming school year/s, financing on the base of effectiveness, monitoring the quality of VET provisions.

The pilot foresees collection and selection of administrative data (education and training and labour market data) in a combination with sociological surveys among graduates.

Comparative analysis will be available for the districts of Vratsa, Stara Zagora and Burgas which are regions with differences in economic development, network of schools and demography. Comparison of subgroups of learners per sectors, vocations and specialties will be available as well.

4.4.4.2   The Estonian graduate tracking database

The Estonian graduate tracking database consists of data about all graduates, students, entrants and temporary or permanent leavers since 2005 (which marks the beginning of Estonian Education Information System) in different education levels - general, vocational and higher education. It is possible to track a person's education path and outcomes in the labour market as well as their monthly/yearly income. The data can be broke down to gender, age group, study field, school etc. In order to avoid duplication, a person's highest achieved level of education is used. Therefore every year the educational composition of the dataset changes.

Graduate tracking in Estonia dates back to year 2014 and the graduates' labour market performance has since that been surveyed annually by combining data of following administrative data sources: Estonian Education Information System, Tax and Customs Board, Population Register, Estonian Unemployment Insurance Fund, Social Insurance Board and National Defence Obligation Register. Since 2019, also the data about field of activity has been included. Positions in the labour market are as follows: student, student & employed, employed, unemployed, on parental leave or in military service, unknown or out-migrated. In the future (possibly 2021 and onwards), also data about the job, work load, disabilities and parents education is planned to include.

In several member states, there is an ongoing discussion about if to make detailed information publicly available in a way that results are presented by programme and provider.

> In the Netherlands, there is a legal requirement for the providers to provide graduate tracking information. There is an ongoing discussion though about the possibilities of providing information at low levels, for instance for educational providers, in a transparent way and making sure this information is also statistically meaningful.
> In Ireland providers are not always allowing results to be made publicly available. It has proven to be difficult in Ireland, as different providers do not want their outcomes shared publicly or with other providers.
> In Sweden, the interpretation of the law just changed at Statistics Sweden and this change was confirmed by court. Now, no data is allowed to be published regarding private providers. Information about students and their results and outcome is seen as economic information, which means statistical agencies must guarantee private providers' confidentiality. The government now asked the responsible agencies to suggest needed legal adjustments in order to make the data public again.

4.5   Standard 5 – use comparison groups

Action: This standard invites those who are establishing or improving tracking systems to select and use comparison groups as one way to evaluate and improve the quality and value of the information from a tracking system.

In order to evaluate the impact of a training scheme or programme, it is recommended to use comparison groups of learners. There are many ways to establish a comparison group for a VET programme - typically tracking systems use:

> learners who did not take a programme (e.g**. learners who completed upper secondary general education** or learners who did not participate in continuing VET);
> learners who left the programme before its end (e.g. early leavers, or those leaving the programme in the final phase of the programme);
> learners who attended the complete programme but who did not graduate.

The comparison group represents the expected outcomes participants would have achieved if they had not participated in the training scheme/programme (so called counterfactual analysis). The difference in outcomes between the participant and comparison group represents the estimated impact of training scheme/programme on participants' outcomes. In this analysis, it is important to identify relevant observed characteristics of the participants (e.g. socio-economic information and qualifications achieved). It is hard though to calculate the real impact of the programme, as outcomes not only depend on observable characteristics, but also important characteristics that cannot be observed, such as motivation.

The decision on which group to select as a comparison group depends on the purpose of the comparison and analysis. Tracking **early leavers** (drop-outs) could contribute to a greater understanding of the specific factors (e.g. reasons for leaving) associated with early leaving from VET and the measures that are effective at tackling this issue. This supports other VET policies to achieve the European 2020 benchmark, which says that the share of early leavers from education and training in the EU should be not more than 10%. Monitoring **early leavers** from VET programmes can also help policy makers understand whether (as Cedefop's data[3] shows)

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[3]   Page 30, https://www.cedefop.europa.eu/files/5557_en.pdf

VET is a safety net for those at-risk learners in general education, and offers an alternative pathway and secure their retention in education and training.

4.5.1.1 Including non-graduates

Ireland

The early leaver is defined as a learner who has fulfilled less than 25 percent of the course requirements. Other learner outcomes are partial and full-completers. Partial completers are learners who have completed less than 90 percent, more than 25 percent of course requirements. Requirements include attendance and course work. But since we do not have a national system to track attendance, the learner outcomes are recorded by the tutor and according to his/her assessment of the learner.

Sweden

In IVET, all learners are included in the graduate tracking system. Results show the importance of graduating for labour market outcome as the outcome differs depending on if the learner graduated, studied three years but without passing all exams, or studied only part of the three year programme. Even learners are included who did not qualify for IVET programmes and who, therefore, participated in preparatory programmes.

4.6 Standard 6 – be based on multiple measurement points in order to create a longitudinal analysis

Action: This standard invites those who are establishing or improving tracking systems to use multiple collection points which cover learners' data after graduation and in subsequent years.

Collecting data on one occasion after learners graduate provides important information but it is not sufficient to support detailed policy planning and meet the objectives of a graduate tracking system. Successful systems do more than collect data close to the point of graduation - they are based on **multiple measurement times/points**.

Even though the link with the obtained qualifications weakens with time and the graduate's recent work experience is likely to be more important when looking for a new job, longitudinal data collection can inform policy makers on long term trends. For this longer term perspective administrative data is more important as it is less expensive and is much more likely to cover all learners. There is increasing evidence that looking at the long-term impact of participation in training is necessary to understand which programmes work well for which target group.

In addition to agreeing when to collect and analyse data (this could be on an agreed date each year or within an agreed number of months following the learners' completion of their programme), it is important that the data from multiple measurement points can be easily connected. At the same time, the learner's confidentiality has to be ensured.

Administrative data could be the first hand option for producing longitudinal data, as this implies that data is available at any moment in time, it is cost-effective and there is no non-response and hence no bias. Administrative data should nonetheless be complemented by survey studies as administrative data gives no information on more qualitative aspects.

Not all measures can be obtained by administrative data. A cost effective way of getting insight into the development over time by surveys, is asking a graduate in a survey about several points in time. This is called 'pseudo'-longitudinal data. It should be considered though, that memory effects make the data less reliable compared to asking about the present at several occasions.

4.6.1.1 Longitudinal approach for tracking of upper secondary school leavers including IVET learners – example from Sweden

Since 2014, the Swedish National Agency for Education annually publishes register based statistics about what young people do after upper secondary school. The data includes all upper secondary school pupils, including IVET graduates and learners who left school early or didn't graduate within three years. They are then followed 1, 3 and 5 years after graduation (or the year they should have graduated considering their age). The statistics are annually updated with the latest results. It is presented in tables in Excel, but even described in a shorter paper. More information is available here (Swedish only).

4.7 Standard 7 – define desired quality of the tracking information and use quality assurance to support the graduate tracking system

Action: This standard invites those who are establishing or improving tracking systems to discuss desired quality of the tracking information and to develop and use a quality assurance approach.

Tracking system are complex policy instruments which take time to develop. Their complexity makes it difficult to ensure everything operates effectively from the launch of any system - gradual change, amendments, refinements, additions to scope are all likely to be part of the ongoing development and strengthening of a tracking system. The evolving and continually developing nature of tracking systems support the case for establishing and using a formal quality assurance system. There are many quality assurance approaches which are based on processes (e.g. those based on international models such as the EFQM and ISO, national models based on the European Quality Assurance Framework for VET, the European Standards and Guidance and systems designed by individual VET providers). At the heart of nearly all (if not all) of these process-based approaches to quality assurance is a **quality assurance cycle based on 'planning', 'implementing', 'evaluating' and 'reviewing'**. In addition to these process-based quality assurance systems, there are other models which are based on legislation e.g. in the company-based training parts of the German dual-system, quality assurance is determined by legislation, regulations and recommendations which establish minimum standards[4].

In all quality assurance systems the most difficult part of the process is making change on the basis of a formal evaluation of the data from the monitoring activities. Every tracking system generates feedback which can be used to improve its quality and effectiveness. In line with the quality assurance cycle, this quantitative and qualitative information should be used to review and amend the tracking system. Making proposals for changes, and monitoring that these proposals are implemented, is best undertaken through an agreement with social partners and stakeholder organisations including learners', employees' and VET providers' representatives; employers' group and government officials.

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[4] https://webcache.googleusercontent.com/search?q=cache:Y_MnH1GNGGQJ:https://www.bibb.de/veroeffentlichungen/en/publication/show/8548+&cd=3&hl=en&ct=clnk&gl=uk

As set out in principle number 2 - tracking systems should *'be underpinned by a quality assurance system which is based on methodologically sound and sustainable data production systems'*. When it comes to data productions systems, Eurostat's Code of Practice provides guidelines about the institutional environment and statistical processes, which can be useful when designing a graduate tracking system. The tracking system can use Eurostat's Code of Practice[5] to ensure data quality based on the following criteria:

> relevance: The information collected and the statistics produced meet the needs of the users;
> accuracy and reliability: The statistics produced accurately and reliably portray reality. It is important to measure and document the statistics' errors. With survey-based statistics, this mainly means having to deal with sampling errors and errors due to non-response. With administrative data based statistics, this mainly means having to deal with measuring what is aimed to be measured, as the data is not collected for graduate tracking;
> timeliness and punctuality: The statistics produced are released in a timely and punctual manner, meaning the periodicity of the statistics takes into account user requirements as much as possible and that release dates are announced in advance and followed;
> comparability and coherence: The produced statistics are consistent internally, over time and comparable between regions as well as different parts of the VET system. Furthermore, it is possible to combine and make joint use of related data, e. g. HE graduate tracking;
> accessibility and clarity: The produced statistics are presented in a clear and understandable form, released in a suitable and convenient manner. They are available and accessible on an impartial basis with supporting meta-data (e g definitions) and guidance (how to interpret and use the data). Here it is important to keep users informed about the quality of statistical outputs with respect to the quality criteria above.

4.8   Standard 8 – ensure that information from graduate tracking systems is accessible in a form which meets the agreed needs of stakeholders and social partners

Action: This standard invites those who are establishing or improving tracking systems to produce accessible data which meets the needs of social partners and other stakeholders.

The tracking system should take account of **stakeholders' needs** for information and data. Agreeing how much data and its quality needs to be discussed with stakeholders before decisions are made about data collection methods. The data collection method will be a consequence of an agreement on which data are needed and what quality the data should. These agreements will also need to be based on the cost and difficulty of collecting data, the extent to which there is comparable data on different programmes and the extent to which data can be collected in a standardised form.

A tracking system is more likely to succeed if there is an ex ante agreement on how data will be used. As part of the discussions on data, it helps to think about what quality the data should have, **how the data will be analysed, how it will be presented, who will have access to the analysis,** how quickly the analysis can be completed, and what information will be in the public domain. These discussions will help to promote transparency, predictability and simplicity.

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[5]   https://ec.europa.eu/eurostat/web/quality/european-statistics-code-of-practice

The organisations involved in discussing the development or strengthening of a graduate tracking system will vary between countries. However, the focus on this standard is how the data from the tracking system is presented and the extent to which it meets the needs of the stakeholders and social partners. A national or regional tracking system removes the need for individual VET providers, employers, student groups/unions, government agencies and other stakeholders to collect feedback on VET programmes. As such, whenever there is an official system-level approach, stakeholders will want to be involved in its design and objectives, and any agreement on how the data is used. Gaining this agreement takes time, and it is important to recognise that each stakeholder's needs are different. Developing consensus around a manageable and efficient tracking system is likely to involve compromises from each group of stakeholders.

4.8.1.1 Dissemination of tracking information – example from Slovakia and Estonia

Slovakia

There is a web portal which provides useful information based on graduate tracking data. Examples are employment rates and average wage at the level of study programmes and educational institutions. The web portal https://uplatnenie.sk/ allows users to filter results at institutional level, as well as at the field of study level and combination of both. Furthermore, it allows to compare results between chosen institutions/study fields.

Although the portal is provided only in Slovak language, Chrome's web translator is quite well able to translate most of the content which will give more information.

Estonia

Graduate tracking data (http://www.haridussilm.ee/?leht=edukus_1 and https://www.hm.ee/et/tegevused/uuringud-ja-statistika-0) is also used for career guidance and could be used by schools for their strategical planning. Main results are published yearly in statistical portal as well in written analysis.

4.9 Standard 9 – strengthen cross-border partnerships by including graduates who move to another country following the completion of their programme

Action: This standard invites those who are establishing or improving tracking systems to engage in cross-border partnerships to exchange data on migrating graduates.

Increasingly VET learners gain employment abroad on completing their programme. As such, a VET graduate tracking system needs to be able to identify those learners who gain employment abroad. This will enable comparisons to be made between those graduates who do and do not move abroad. Including mobile graduates in the tracking system will also strengthen cross-border partnerships and EU level cooperation.

There are a number of European instruments, which support international mobility and graduate tracking measures are best placed to monitor the impact of learning mobility experiences. They include:

> the Council Recommendation in November 2018 on the automatic mutual recognition of higher education and upper secondary education and training qualifications and the outcomes of learning periods abroad.[6] The recommendation seeks to ensure that any student, apprentice or pupil who has a learning experience abroad, whether for a qualification or learning mobility, has that experience automatically recognised for the purposes of further study;
> the Council Recommendation of 22 May 2017 on the European Qualifications Framework for Lifelong Learning[7] which aims to improve the transparency, comparability and portability of people's qualifications;
> the Europass Decision[8] on a common framework for the provision of better services for skills and qualifications which establishes a comprehensive and interoperable framework of tools and information, in particular for transnational employment and learning mobility purposes.

However, a recent study[9] on measuring learning mobility in VET states that "only a small number of Member States have established national approaches for achieving data on IVET learning mobility beyond data collected within the Erasmus+ framework". In order to improve data availability, it recommends Member States to integrate dedicated variables on IVET learning mobility in the graduate tracking measure.

As a minimum requirement, a goal should be to calculate the number of learners who have left the country. Information about the number/share who left the country is important information in itself. In the further analysis, they should be excluded as long as no information about their employment or further studies abroad is available.

Tracking mobile graduates is most meaningful, when conducted by all member states. Data can then be linked between countries, which makes it possible to get information about the labour market outcome both from the leaving and from the receiving perspectives. In the short run, before data linkage is possible, a possibility is to conduct surveys where contact is taken by email. This makes it possible to get information even for those who have left the country after graduating.

4.10 Standard 10 – contribute to EU level cooperation in VET

Action: This standard invites those who are establishing or improving tracking systems to contribute pro-actively to improving the availability and quality of EU level data.

To support European comparisons of data, it helps if there is an agreement on when data is collected. VET tracking systems are stronger when there is alignment with the approach which is used across the education and training sector.

In the short term, the expert group proposes that graduate tracking could be done by a European survey. Countries who choose to conduct a European survey for VET will get information about graduates leaving the

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6 Automatic Mutual Recognition of Qualifications https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52018DC0270
7 https://publications.europa.eu/en/publication-detail/-/publication/ceead970-518f-11e7-a5ca-01aa75ed71a1/language-en
8 https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32018D0646
9 https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8318&furtherPubs=yes

country after graduation. Countries are invited to start with formal IVET. In the medium term, the expert group proposes that graduate tracking is also conducted by using administrative data which is linked between countries. This includes VET and even here, formal IVET should be the starting point.

Alongside the potential for graduate tracking information to improve the quality of national VET systems, tracking systems can contribute to European level initiatives, which monitor outcomes from education and training programmes e.g.

> the indicators for ESF-supported activities include the measurement of impact six months after a participant completes an initiative;
> since 2009, two indicators (completion and placement rates in VET programmes) have been used in the European Quality Assurance Reference Framework for Vocational Education and Training (EQAVET);
> the 2020 target that the share of employed graduates (20-34 year olds) having left education and training no more than three years before the reference year should be at least 82%;
> the 2018 Recommendation on a European Framework for Quality and Effective Apprenticeships states that the tracking of employment and career progression of apprentices should be pursued, in accordance with national and European legislation on data protection.

Greater alignment between national tracking systems and European initiatives supports the development of European level comparable data which could, over time, be useful to monitor the success of different VET systems. Central to this potential increase in alignment is **the use of agreed definitions of indicators and statistics** e.g. the use of Eurostat's quality criteria as described in standard 7. There are several important classification systems which, when applied to graduate tracking, enable comparability across different data sources within countries as well as across countries. For data about:

> formal education and training, there is the International Standard Classification of Education (ISCED 2011) and its related sub-classification of fields of studies – ISCED-F. This enables a clear categorisation in terms of the VET learner's programme orientation (general or vocational) and their field of education achieved at a particular point in time. The same classification can be used for individuals enrolled in formal education and other training programmes. These classifications can be applied to survey-based and administrative statistics[10];
> labour market status (employed, unemployed, inactive) there are International Labour Organisation (ILO) standards[11] which are usually applicable to European statistics. The ILO definitions, particularly regarding unemployment can best be collected through survey-based data. Good administrative data can be used to reliably estimate those in the population who are employed.

There are also classification systems which help to standardise the information on employment e.g. to define:

> the status of those who are employed, the international classification of status in employment must be used[12];

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[10] See https://ec.europa.eu/eurostat/statistics-explained/index.php/International_Standard_Classification_of_Education_(ISCED)
[11] https://www.ilo.org/global/statistics-and-databases/statistics-overview-and-topics/WCMS_470304/lang--en/index.htm and https://ec.europa.eu/eurostat/statistics-explained/index.php?title=EU_labour_force_survey_-_methodology
[12] https://www.ilo.org/global/statistics-and-databases/statistics-overview-and-topics/status-in-employment/current-guidelines/lang--en/index.htm

> the occupation of an employed person, the International Standard Classification of Occupations (ISCO 2008) could be used. This may be applicable for information about an individual's "current" job as well as their previous job(s). This classification can be applied in survey-based and administrative statistics[13];
> the economic sector where a person works, the statistical classification of economic activities in the European Community can be used[14].

Further work to improve the comparability of data at an international level is being undertaken by EUROSTAT, the OECD, UNESCO and ILO. These initiatives include work by:

> Eurostat to standardise the information that is collected through social and labour statistics surveys, and the use of national registers to improve the methodology and quality of data;
> OECD has noted that different data sources are used in each country to respond to surveys e.g. student enrolment data could be submitted from national statistics offices (e.g. in Australia, Germany and Iceland) from a School Census or Survey data (e.g. in Austria, Canada and Korea) or from a register (e.g. Denmark, Netherlands and Sweden). A second example quoted by the OECD refers to the data on earnings. This data can be based on various national sources: sample survey, register data and a combination of both. Although the preferred source is data from registers, most countries provide data from sample surveys and half of these countries data from standardised surveys.

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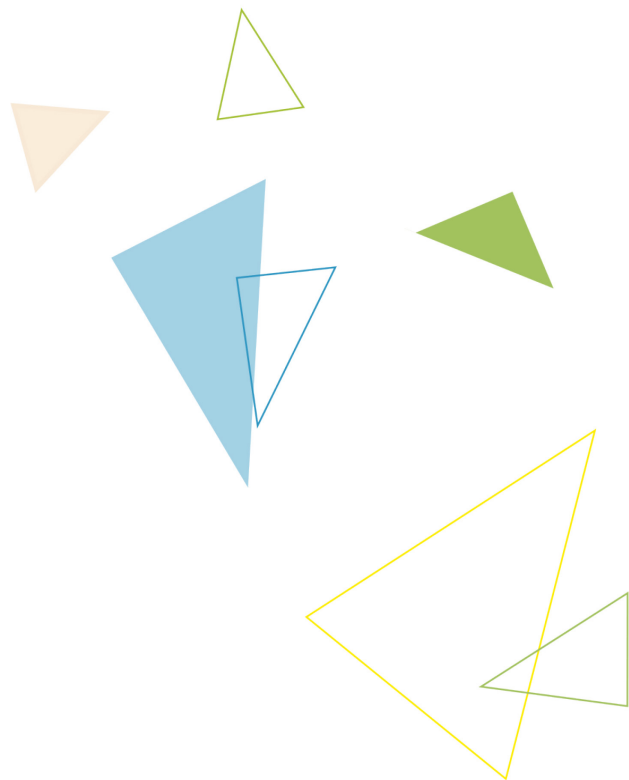
[13] More details can be found at https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:International_standard_classification_of_occupations_%28ISCO%29
[14] https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Statistical_classification_of_economic_activities_in_the_European_Community_(NACE)

**Annex 4 : Expert group on graduate tracking –
Task force 4: Principles and Standards for VET Graduate Tracking**