
VOCATIONAL EDUCATION
AND TRAINING FOR THE
FUTURE OF WORK
IRELAND



Vocational education and training for the future of work: Ireland

Policy strategies and initiatives to prepare vocational education
and training (VET) for digitalisation and future of work
technologies

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CHAPTER 1.

Introduction

In Ireland, policy developments in relation to VET reform are mainly articulated through strategies drawn up by the Department (Ministry) of Education and Skills, either directly or through its agencies. Such agencies include SOLAS (further education and training authority), the Higher Education Authority (HEA), Quality and Qualifications Ireland (QQI), Education and Training Boards Ireland (ETBI), the Apprenticeship Council, Aontas (adult learning), among others.

In addition, while not directly related to vocational education and training, or indeed the education and training system, the work of other Government Departments also impacts on education policy. The two most significant initiatives in relation to digitalisation and future of work technologies include the National Digital Strategy and the Future of Jobs Programme. Neither initiative specifically focuses on vocational education and training, although they both recognise that all sectors of the education system play a key role in delivering the objectives set out in these initiatives. As a result, several developments in education and training strategy and policy have been elaborated within the context of these (and other) broader initiatives, e.g. National Skills Strategy 2025 (2016) or the ICT Skills Action Plan (2018). These education and training related strategies have in turn impacted directly and indirectly on VET policy in recent years.

Within the context of more general education and training strategies and action plans, there have been a small number of VET-specific plans: relevant to preparing learners for the future of work are the Strategy for Technology Enhanced Learning in Further Education and Training 2016-19, the Action Plan to Expand Apprenticeship and Traineeship in Ireland 2016-20, the Skills to Advance Programme, and the Explore Programme.

Among other considerations, most of the above-mentioned initiatives have been informed by the findings of the National Skills Bulletin (annual publication), which details the occupations and job titles for which skills and labour shortages have been identified. In most instances (with the exception of IT-related professional occupations and some health professional occupations), the size of the shortage is estimated to be small, but because they tend to be in areas critical to a company's operation, the impact of the shortage may be acute. Digital and AI skills tend to be related to ICT occupations and relevant skills shortages identified in the National Skills Bulletin 2019 include automation engineers, software developers and engineers (including DevOps); web developers (UX/UI); IT architects (including systems architects, solutions architects and technical architects); marketing specialists (including digital marketing specialists); IT technicians with foreign language proficiency, CNC (computer numerical control) programmers.

An additional report, also published annually, the Vacancy Overview, gives an insight into the job vacancies and difficult-to-fill vacancies (i.e. vacancies for which employers are finding it difficult to source suitable candidates) that are arising in the Irish labour market. Difficult-to-fill vacancies related to AI and robotics include the above-mentioned skills shortages as well as blockchain IT professionals, data analysts, business intelligence analysts.

However, none of the skills shortages or difficult-to-fill vacancies identified in 2018 (published in 2019) indicated a need for AI or robotics skills. Nonetheless, this does not imply that these skills are not in demand. Anecdotal evidence suggests that it is most likely that these skills are among a portfolio of skills (such as entrepreneurship, innovation, leadership, team working) that are increasingly in demand by employers for an expanding range of different job titles.

CHAPTER 2.

Specific policy strategies

2.1. Digital strategy

The National Digital Strategy was initially launched in 2013 by the Department of Communications, Climate Change and the Environment (DCCAE). It aimed to facilitate greater engagement with the digital environment on the part of both people and businesses. The overarching goal is to achieve ‘the optimal economic and social use of internet by business, government and individuals’ (DCCAE 2013, p. 1) through digital engagement in a number of areas, including education and learning. As such, the Digital Strategy was designed to complement and enhance other Government initiatives; education related initiatives are just one of the strands, complementing others such as the National Broadband Plan and the Action Plan for Jobs.

The education and eLearning strand of the Digital Strategy outlined a number of actions. These actions included (1) enhancing the availability of technology and broadband internet in second level schools, (2) providing professional eLearning initiatives for teachers, the development of digital skills relevant to the workplace, and (3) researching the nature of children’s internet use. Importantly for VET, the provision of eLearning opportunities in the further education and training sector (where most VET provision in Ireland occurs) was also outlined.

As a result, when the National Skills Strategy was later published (in 2016) by the Department of Education and Skills, objectives and goals were outlined that reflected the overarching aim of the National Digital Strategy (as well as others). For example, amongst the key objectives of the National Skills Strategy are (1) the implementation of the Digital Strategy for Schools and (2) the implementation of a roadmap for enhancement in a digital world, aimed at delivering high quality learning experiences across the education and training system. Therefore, while the Digital Strategy was launched by the DCCAE, the Department of Education and Skills and education providers at all levels have a role to play in its implementation, mainly through the goals and objectives of the National Skills Strategy; the National Skills Strategy is itself designed to ensure that skills provision in the education and training system is aligned with the skills needs of the economy and of individuals.

In 2018, the Government, this time led by the Department of the Taoiseach (1), launched the second phase of the National Digital Strategy, comprising of a public consultation in which members of the public and interested stakeholders (including education and training providers and agencies) were invited to submit their views. More than 300 responses were received. In parallel, there were extensive consultations with stakeholders and experts.

This second phase, incorporating the outcomes of the public consultation, is still in preparation.

2.2. Future jobs programme

Also in 2018, the Irish Government agreed the development of a new cross-Government strategy, known as the Future Jobs Programme. The Future Jobs Programme is viewed as being key to Ireland's future and its ability to remain competitive by embedding new policies and strategies in the labour force. While during the recession, Government efforts were concentrated on job creation, as Ireland moves toward a stronger economy, with almost full employment (2), the focus of employment policy is beginning to shift towards preparing the country to address other challenges affecting economic performance. As such, the Irish Government recognises the importance of continuing the recent economic growth and addressing the changing nature of the labour market, including productivity and quality jobs. The Future Jobs Programme places an emphasis on a different range of areas including, among others, (a) anticipating the ways in which technology and automation are expected to affect the world of work and (b) addressing the challenges arising out of Brexit and changes in international trade and taxation.

As part of the Future Jobs Programme, the Government, led jointly by two Government ministries, the Department of Business, Enterprise and Innovation (DBEI) and the Department of the Taoiseach, hosted a high-level summit in November 2018, to consult with relevant stakeholders. The discussions focused on five themes:

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- (1) The Department of the Taoiseach is a ministry of the Irish Government that supports the work of the Taoiseach (Prime Minister) and the Government. It works with other Government Departments to implement Government Policy.
- (2) Ireland's unemployment rate fell to 6% in quarter 3 2018, which is significantly lower than the 15.9% observed just five years earlier in quarter 3 2013 (Central Statistics Office (CSO) Labour Force Survey).

- (a) productivity to remain competitive, especially amongst indigenous small and medium enterprises (SMEs);
- (b) innovation and technology, including preparing for the transition to the digital economy;
- (c) skills and talent, focusing on how workers can develop new skills;
- (d) labour force participation;
- (e) low carbon economy.

It is expected that, following the consultation in November 2018, the Future Jobs Programme will begin to be phased in from 2019. The first phase, Future Jobs 2019, will focus on approximately 20 targeted actions, designed to meet the digitalisation and the technological changes in the workplace, which will in turn meet the skills needs of the economy.

Of the targeted actions, a number are specifically related to enhancing skills and developing and attracting talent. These can be further broken down into five ambitions, with some of these already agreed upon and either in place or in the process of being implemented:

- to provide high quality education and training responses to evolving enterprise and skills needs; this includes the development and introduction of the Human Capital Initiative (outlined in more detail in Chapter 6.1 of this paper); continued reform of education and training to align with the skill needs of the Irish labour force, as initially targeted in the National Skills Strategy 2016 (to include close collaboration with enterprises).
- to encourage lifelong learning and upskilling; this includes the potential development of a study to identify barriers to training for employees (not yet implemented), as well as other initiatives that are in early stage of development (recognition of prior learning; development of tertiary level programmes in areas such as blockchain, AI and robotics (detailed further in Chapter 6)) or those well under way with learners enrolled on courses (e.g. Explore programme and the Skills To Advance programme, which are further outlined in Chapter 5)
- to foster participation in apprenticeship and traineeship programmes; each of the deliverables for this are already underway, including the expansion of the apprenticeship/traineeship system, a communications campaign to promote apprenticeship, the launch of an online platform for apprenticeship opportunities.

- to compete successfully for international talent; this includes ensuring that migration policy (i.e. the employment permit regime) can continue to support labour market needs.
- to improve career guidance and advice provision; this target had previously been outlined in the National Skills Strategy, and as an initial step, the Department of Education and Skills commissioned and published, in 2019, a review of career guidance, which included a number of recommendations, which will be acted upon in the short-medium term.

CHAPTER 3.

VET 4.0 initiatives

3.1. Expansion of the formal apprenticeship system

Possibly one of the most significant changes in Ireland's VET system in recent years relates to the expansion of the formal apprenticeship system. Following a review in 2013, the number of apprenticeship programmes available was expanded from 26 to 43 by November 2018, with an additional 46 in development. Prior to 2016, the vast majority of apprentices in Ireland were enrolled in construction-related occupations (e.g. carpenter, electrician) or engineering (e.g. maintenance fitter, metal fabrication) occupations. However, the expansion of the apprenticeship system, in line with the goals set out in the National Skills Strategy 2025, resulted in the introduction of apprenticeship programmes across a new range of occupations and education levels ⁽³⁾

The Apprenticeship Council, established by the Minister for Education and Skills in 2014 as part of Ireland's apprenticeship system reform, has responsibility for identifying new sectors of the economy for which the apprenticeship may provide a suitable solution to addressing the needs of employers and employees. Among other factors, the Council takes into account the findings of the work of the National Skills Council (responsible for the skills needs identification architecture in Ireland). The Council is enterprise-led, and its membership is comprised of representatives from business, trade unions, education and training bodies, as well as the Department of Education and Skills.

Some of these new apprenticeships are aimed at more traditional skills (e.g. butcher, accounting technician, auctioneering services). Others are designed specifically to meet the changes in the workplace brought about as a result of technology. For example, there are

- (a) two new ICT related apprenticeships, each of two years in duration, and leading to awards at level 5 on the EQF (NFQ level 6);

⁽³⁾ Previously all apprenticeship programmes were delivered within the VET system at post-secondary non-tertiary level (ISCED level 04), leading to awards at NFQ 6 (EQF 5). Since 2016, some programmes are delivered within the tertiary level system (ISCED level 05-07) as well as the post-secondary non-tertiary sector (ISCED 04), leading to awards at NFQ levels 5-9 (EQF levels 4-7). There are also apprenticeships in development leading to awards at NFQ 10 (EQF 8), which are expected to become available in future years.

- (b) two new apprenticeship programmes in manufacturing engineering and technology, leading to third level qualifications at level 5 and 6 on the EQF (NFQ levels 6 and 7).

Other apprenticeship programmes in development include

- (a) original equipment manufacturing (OEM) engineer (4 years), leading to a level 5 on the EQF (NFQ level 6);
- (b) CGI technical artist (Animation, games) which is 2 years in duration and leads to an award at level 7 on the EQF (NFQ level 9).

All of these new programmes (both current and in development) were introduced as a result of an identified industry need. Development of a new apprenticeship programme is consortia-led, meaning that the proposer of a new apprenticeship is typically a representative of industry. Industry representatives work with at least one education and training provider who will support and/or co-ordinate the development of the apprenticeship. The proposer must provide evidence of specific industry support for the proposal (e.g. a list of companies or industry representative groups) and a rationale and evidence base for the skills need to be addressed via the apprenticeship.

The overarching aim of such changes introduced to the apprenticeship system is to ensure that the education and training system can equip learners with the skills needs of the economy and employers in the 21st century.

3.2. **TEL strategy 2016-19**

In 2017, SOLAS and Education and Training Boards Ireland (ETBI) ⁽⁴⁾ jointly published the Strategy for Technology-Enhanced Learning (TEL) in Further Education and Training 2016-2019. This strategy aims to build on and expand the existing structures, with the goal of developing learners who are skilled and confident in using technology as part of their work, study and home lives. As technology is increasingly becoming a part of people's daily lives, it is important that the labour force is equipped with the skills required to avail of technology and use it on a daily basis whether to enhance skills in an individuals' current employment or to develop a new skills set to increase employability.

There are key four elements to the TEL Strategy, as follows:

⁽⁴⁾ ETBI is the national representative association for Ireland's sixteen Education and Training Boards (ETBs), which are the main providers of further education and training, including VET, in Ireland.

- (a) technology infrastructure: to ensure the provision of broadband and wireless internet access, virtual learning environments and collaborative online learning communities;
- (b) programme design: to build innovative approaches such as blended learning or 'bring your own device';
- (c) learning content: using eBooks, simulations and eLearning resources;
- (d) continuous professional development – building expertise in using technology in pedagogy, both for existing staff and as part of initial teacher training.

The TEL Strategy provides for the development of each of these elements, regardless of the specific FET sector (i.e. VET related courses, social inclusion, adult literacy). Key partners in the TEL Strategy are learners and teachers within each of the sixteen Education and Training Boards (ETBs) and other FET providers. SOLAS will facilitate achievement of the strategy through its funding and co-coordinating responsibilities and there will be close liaison with teams working on national initiatives to build shared service platforms and technology infrastructure.

CHAPTER 4.

Intelligence for VET

Intelligence for VET is largely based on national and local labour market information. Such information is provided by the outputs from the National Skills Council, the body with overall responsibility for skills needs identification in Ireland, as well as the work of its three associated bodies:

- (a) the Expert Group on Future Skills Needs, which monitors skills needs at sectoral level;
- (b) the Skills and Labour Market Research Unit, which monitors regional and national labour markets using a range of labour supply and demand indicators;
- (c) the Regional Skills Fora managers, who liaise with employers to identify and address skills needs locally via education/training providers.

As yet, there are few new technologies used to exploit labour market intelligence. Existing facilities include making such information available for viewing and interrogation via internet on careers information websites. Linking administrative data sets in order to track, and ultimately evaluate, graduate outcomes is also a key objective, with work currently underway to establish the destination of graduates from both the further education and training (FET) and third level education systems. Such information is designed to enhance feedback loops to the education and training system regarding the relevance of courses to the world of work.

In 2014, the Department of Education and Skills, the Department of Jobs, Enterprise and Innovation published the ICT Action Plan. The ICT Action Plan is a collaborative effort between government and industry, aimed at aligning the education/training outputs with the skills needs of the ICT sector in Ireland. The document outlined how Ireland's ability to meet the strong demand for ICT skills would require an increase in the numbers of high-quality computing and electronic/electrical engineering graduates, supplemented by higher education conversion upskilling programmes for jobseekers. Further investment by business in employee training was envisaged to assist in the enhancement of the skills pool in Ireland. Since 2014, the ICT Action Plan has informed a range of other initiatives (such as the National Skills Strategy, the provision of education/training in ICT for jobseekers).

In late 2018, the National Skills Council and Expert Group on Future Skills Needs published a report on Digital Transformation: Assessing the Impact of

Digitalisation on Ireland's Workforce. The goal of the report was to establish the nature and extent to which Ireland's workforce may be impacted by new technologies. The study found that although potential job losses as a result of digitalisation will be more than off-set by the number of jobs created due to economic growth, government initiatives such as the EXPLORE programme will contribute towards preparing workers for the disruptions brought about by new technology. The report also highlights the importance of lifelong learning for the future workforce in order for individuals to remain employable and to transition smoothly between jobs.

In terms of using data to inform skill needs, Ireland's efforts are currently concentrated on linking administrative data systems to monitor graduate outcomes in both the FET and tertiary level sectors. The aim is to establish the extent to which learners progress to employment, further education and training, inactivity or unemployment, and in turn contribute to the evaluation of education and training programmes in Ireland. Although graduate tracking exercises began as a relatively straight forward linking of datasets, they are becoming increasingly sophisticated, with the most recent report from the Higher Education Authority (Stanley, et al. 2019), which looks at the labour market earnings for tertiary level graduates, using regression analyses techniques to model the relationship between graduates' characteristics and their earnings. Such techniques have not yet been applied to the FET sector, which is where most VET occurs.

From 2020, the SLMRU in SOLAS will explore ways of gathering data on job tasks associated with a range of job titles. This will initially involve examination of existing, mostly international, datasets, to assess the extent to which any analyses will yield useful information in the context of the Irish labour market. It also involves collaborating with other agencies already engaged in similar exercises, albeit with a slightly different focus. These projects are in the very initial stages, and no methodologies have been established; it is therefore impossible to state at this stage the extent to which machine learning will be used.

CHAPTER 5.

VET 4.0 learning practices

5.1. eCollege

eCollege is an online learning provider, run by SOLAS (further education and training authority), delivering online training courses across a number of VET related fields. In 2018, there were over 15,000 enrolments⁽⁵⁾. All eCollege courses are free for jobseekers, but learners who are employed people seeking to update their skills and employers who wish to enhance the skills of their employees may also avail of eCollege courses for a fee. Courses are typically offered in the fields of ICT, accounting or project management. Although it has been a long-established service (since 1998), it has evolved in line with technological developments including:

- (a) content development: in part to keep pace with evolving learning content, to assure quality and to align certification with, course content, a decision to outsource content development and to procure off-the-shelf content from external providers was taken, thus allowing the most up-to-date and labour market relevant courses to be offered to learners;
- (b) eTutor support: provision of tutor supported services for all courses;
- (c) ICT platform: initially, eCollege had developed a bespoke learning management system, but later switched to Moodle, an off-the-shelf open source system that had the advantages of a worldwide community of developers.

5.2. Explore Programme

In November 2018, the Department of Education and Skills launched the EXPLORE programme, which aims to increase lifelong learning rates and provide new opportunities for those currently in employment to enhance their skills. In particular, the programme sets out to address the lack of digital skills and skills obsolescence amongst persons who are aged 35 years or more and work in the manufacturing sector. One of the key objectives includes informing participants on technological advancements that will change the world of work.

⁽⁵⁾ Learners may enrol on more than one course in any given year.

The programme is a result of a collaboration between the Education and Training Boards, employers and the network of nine Regional Skills Forum Managers (who act as a liaison between employers and education providers), using innovative methods outside of the traditional classroom in order to focus on non-formal learning. It is funded entirely by the Department of Education and Skills.

In 2018, there were 250 learners. The programme was subsequently rolled out nationwide in 2019, with approximately 500 learners participating.

5.3. Skills to Advance

In September 2018, SOLAS launched the Skills to Advance programme, aimed at developing the skills of people in employment. The programme is designed to complement ongoing investment in skills development by other Government-supported initiatives (e.g. Explore Programme, the National Skills Strategy), by focusing specifically on the most vulnerable groups of people. Such groups include those who have low education attainment (at most NFQ 5 or EQF 4) and who work in low skilled jobs in sectors that are particularly exposed to skills obsolescence (e.g. low technology manufacturing). In 2018, the number of learners was relatively small, but the number of learners enrolled grew to over 2,500 in the 11 months between January and November 2019 and is expected to increase as the programme will be fully rolled out throughout 2019.

CHAPTER 6.

Adapting to AI and automation

6.1. Recent developments in developing and adopting an AI Strategy in Ireland

The development of an AI Strategy in Ireland is currently underway, although still in the initial stages.

In March 2019, as part of Ireland's Future Jobs Ireland ⁽⁶⁾, Ireland set out its intention to develop a National AI Strategy. It is intended to be a cross-government initiative, and as a first step, the Department of Business, Enterprise and Innovation arranged a consultation meeting with Ireland's academic and research communities as well as skills providers in order to gain an insight into their views on the priorities for such a strategy for Ireland. A public consultation was also run for a period of 3 weeks with submissions being invited from stakeholders with an interest in Artificial Intelligence. It is anticipated that a document providing high-level direction to the design, development and adoption of AI in Ireland will be available from early 2020.

6.2. National training programmes with an AI focus

Many of the developments are concentrated in the tertiary education sector, largely because the vast majority of Ireland's learners opt to pursue education and training at this level, rather than in the smaller further education and training sector (FET), where most (although not all) vocational education and training is focused. Nonetheless, the developments at tertiary level impact on VET provision, particularly since the 2016 reforms in Ireland's apprenticeship system means that an increasing number of apprenticeship programmes are placed at higher levels of the NFQ that correspond to tertiary levels of education, and in many cases are delivered by tertiary level institutions, specifically, institutes of technology.

The Human Capital Initiative (HCI) is a dedicated fund of €300 million (€60 million per annum over five years) aimed at incentivising continued reform in the courses delivered in the tertiary education sector (ISCED level 5 and above). The purpose of the HCI so as to enhance the capacity of the sector to deliver skills focused programmes that are aligned with the skills needs of the economy, through investment in the development of new undergraduate places (ISCED 5-6), the introduction of new conversion courses for graduates to meet identified skills needs (ISCED 7 & 8), and fostering agility and innovation in tertiary level education in Ireland (ISCED 5-8). State funded tertiary education institutes (e.g. universities, institutes of technology, colleges of education, etc) may apply for funding under a number of pillars, which reflect the aims of the initiative:

- Pillar 1: Graduate conversion programmes. This strand of the investment fund expands on an existing provision to offer opportunities to third level graduates to reskill in the areas of identified skills needs. Such conversion programme places already exist for ICT skills, but the HCI extends this to other areas of skills shortages and emerging technologies (e.g. high-end manufacturing, data analytics, robotics, and AI).
- Pillar 2: Expansion of existing places on undergraduate courses. Existing courses that help to address Ireland's skills needs will receive funding to increase the number of places available to undergraduate students (i.e. learners on programmes leading to awards at levels 6-8 on the NFQ (or levels 5 and 6 on the EQF).
- Pillar 3: Innovation and agility. This pillar is further divided into two streams. The first aims to foster innovation in modes and methods of programme delivery, while the second is an agility fund that is designed to enable higher education institutions and students to respond to future developments, particularly in terms of the world of work and new technology.

In sum, Ireland's approach to address the skills needs that will arise due to the impact of technology, AI, automation and robotics is holistic in nature, with the number of courses specifically designed to address fields such as AI being limited to a small number, concentrated in the tertiary level sector. Initiatives to ensure learners acquire the necessary technology-related skills are developed in tandem with other initiatives (e.g. lifelong learning, increasing labour force participation, etc.).

6.3. Training to address jobs displacement due to automation

In Ireland, the most significant initiatives to address job displacement due to automation are concentrated on anticipating potential losses rather than providing interventions to those who have lost their jobs. This is primarily due to the fact that unemployment has been in steady decline since the end of 2012 and the number of people currently displaced due to technology is thought to be negligible. In fact, currently, the biggest threat to employment is thought to be the potential impact of Brexit, which, depending on how the UK's withdrawal agreement with the EU evolves, will impact differently on different cohorts of people.

In addition, industries such as car manufacturing are not a significant feature of the Irish economy, and as this is the type of sector where robotisation is most common, it is likely that the impact of technology in terms of jobs obsolescence, although possible (and in some cases, certain) is less severe in Ireland than in other countries with a strong presence of manufacturing (approximately a third of manufacturing employment in Ireland is in high-tech manufacturing).

CHAPTER 7.

Conclusion

A number of broad, government-wide strategies and initiatives have been developed or are being developed in Ireland. However, only a handful are specific to VET.

All relate either entirely or in part to preparing people to develop the skills needs for the economy and for people to be able to interact and engage fully as citizens in a digital world. The Digital Strategy and Future Jobs Programmes comprise the overarching framework that informs all relevant areas of government from education and business, to health, communications and the environment. This helps to ensure that the response to the technological challenges ahead is co-ordinated at national level, highlighting the fact that Ireland has adopted a holistic approach, dependent on the interplay of the policies articulated by different government departments rather than on individual sectors working in isolation or silos.

Nonetheless, many of the initiatives are not yet fully technology-based. Although the intention is to fully exploit the benefits offered by technology in terms of learning, issues such as infrastructure (broadband in some rural areas may be limited), cost, expertise (still growing and evolving) mean that full implementation of the actions and ideas set out in strategy and policy are implemented at a slower pace than perhaps had been initially envisaged. While the strategies (such as TEL) are clearly more than aspirational at national level, roll out nation-wide and system-wide will likely require more time, investment and development.

In sum, Ireland is aware of the need, and has begun to take action, to ensure that the population and workforce are equipped with the skills required and the Future Jobs Programme will play a crucial role in shaping Ireland's response to the needs of its economy (both citizens and businesses) as technology impacts on people's daily lives at increasingly significant ways.

Abbreviations and acronyms

AONTAS	Aos Oideachais Náisiúnta Trí Aontú Saorálach [Irish National Adult Learning Organisation]
CSO	Central Statistics Office
DBEI	Department of Business, Enterprise and Innovation
DCCAE	Department of Communications, Climate Action and the Environment
DES	Department of Education and Skills
EQF	European Qualifications Framework
ETB	Education and Training Board
ETBI	Education and Training Boards Ireland
FET	Further education and training
HCI	Human Capital Initiative
HEA	Higher Education Authority
NFQ	National Framework of Qualifications
NSS	National Skills Strategy
OEM	Original equipment manufacturing
QQI	Quality and Qualifications Ireland
SME	Small and medium sized enterprise
SOLAS	An tSeirbhís Oideachais Leanúnaigh agus Scileanna [further education and training authority]
VET	Vocational education and training

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