

## **2** What learning opportunities do enterprises provide?

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Understanding what learning opportunities enterprises provide is crucial to enable policy makers and social partners to design, implement and co-ordinate effective training policies. For example, understanding if individuals in enterprises are developing the skills needed for the future of work can provide valuable information to better tailor support measures. This chapter presents existing and new evidence on what learning opportunities enterprises provide. It starts by investigating what training enterprises offer across three main dimensions: i) the content of training; ii) the degree of formalisation; iii) the mode of delivery. When discussing the mode of delivery, the chapter explores the impact of the COVID-19 pandemic on the adoption of online training. Then it examines what informal learning opportunities enterprises offer and what drives their adoption.

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# In Brief

## What learning opportunities do enterprises provide?

Learning in enterprises happens through **training** and **informal learning**. Training has well-defined learning methods, schedule, admissions requirements and location, whereas informal learning is not institutionalised. Training opportunities can cover different **content**. The economics literature has traditionally put a strong emphasis on the distinction between firm-specific and general skills, whereas firm-level surveys, such as the Continuing Vocational Training Survey (CVTS), collect data on a wider range of training contents. New evidence from the case studies suggest that enterprises offer in fact six main types of training content. Training conveying (i) technical, practical or job-related skills is the most frequent, followed by training on (ii) health, safety and security in the workplace and (iii) soft skills. Enterprises also offer training programmes for the (iv) induction of new employees, on (v) IT skills and (vi) foreign languages, but less frequently than the top three.

Training opportunities differ in their **degree of formalisation**. The economics literature suggests that participating in training that leads to a qualification, certificate or licence can reduce hiring frictions in the job market. However, firms might be reluctant to offer certified training, due to poaching concerns, larger organisational costs and lower flexibility. New evidence from the case studies shows that the adoption of certified training is driven by regulatory pressures and primarily takes place for (i) technical, practical or job-related skills and (ii) health, safety and security.

Training can be delivered through **three main modes**: courses in-person, on-the-job or online. Data from the CVTS suggests that training mainly happens in courses rather than on-the-job. New evidence from the case studies shows that the choice of the mode of delivery depends on the type of training content. For instance, training on (iii) soft skills is overwhelmingly delivered via courses in-person, whereas training on (i) technical, practical or job-specific skills is often delivered on-the-job.

The evidence on **online training** from firm-level surveys is more limited. New evidence from the case studies suggests that, before the outbreak of the pandemic, firm size was a key driver of the adoption of online training. Large enterprises and enterprises that are part of a multinational corporation were disproportionately more likely to offer online training. This implies that medium enterprises were less prepared for a transition to online training when COVID-19 struck and often experienced significant difficulties. Although large enterprises were generally able to upscale online delivery quickly during the pandemic, they remain lukewarm about further expanding online offering in the future. This suggest that the pandemic was an accelerator of existing trends in online training, rather than a catalyst for change.

Although measuring **informal learning** is difficult, the economics and psychology literature show that it accounts for more than 70% of the total learning time in enterprises and can lead to higher productivity, higher wages and higher employee satisfaction. New evidence from the case studies suggests that enterprises offer a wide range of informal learning opportunities across three main dimensions: learning by doing, learning from others and keeping up to date with new products and services. For example, employees can learn from others by observing their work or asking for advice, but also through buddy and mentoring schemes, coaching opportunities and information sharing sessions, such as seminars to share best practices. Consistent with the psychology literature, the case studies suggest that increasing engagement in informal learning happens through the creation of a work environment where learning is encouraged and valued. The case studies show that management attitudes and some degree of institutionalisation of informal learning may be especially important to foster the creation of a learning environment.

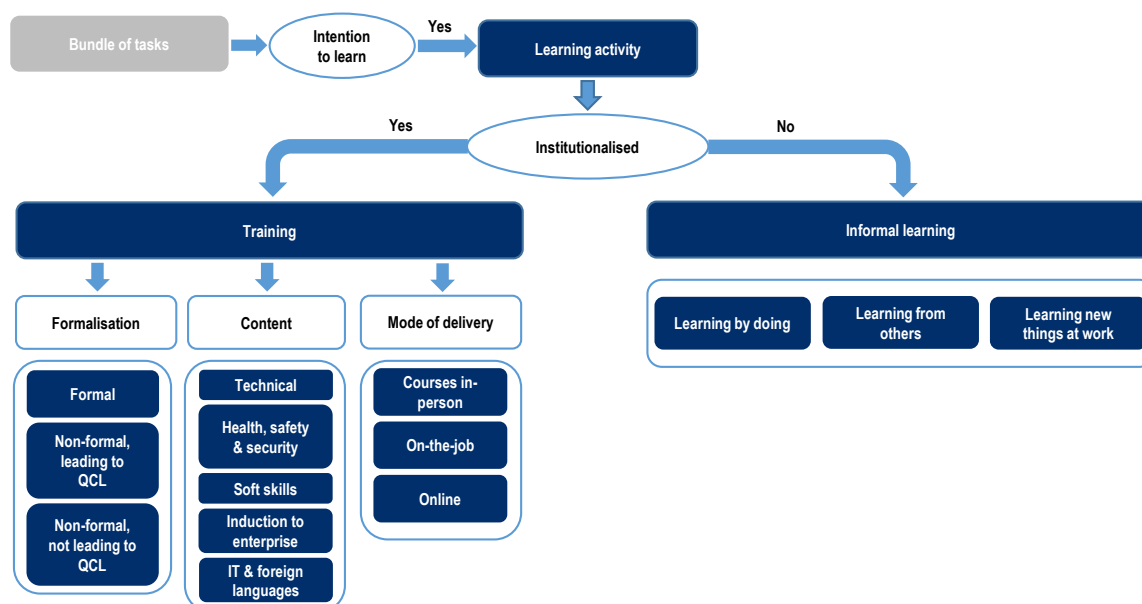
## Introduction

Understanding what learning opportunities enterprises provide is crucial to enable policy makers and social partners to design, implement and co-ordinate training policies. For example, it can help assess whether enterprises are targeting the types of content that are needed to prepare individuals for the future of work, it can clarify whether enterprises are delivering training effectively and it can provide valuable information to better tailor support measures.

Fortunately, the academic and policy literature has already made substantial progress in mapping what learning opportunities enterprises provide (see Figure 2.1). Learning in workplaces is often seen as ubiquitous and inevitable. In fact, a task or a bundle of tasks in the workplace should be considered as a learning activity only if employees have an “intention to learn” while performing them (Eurostat, 2016<sup>[1]</sup>). Learning can happen either through training or informally (see Figure 2.1). Training opportunities are institutionalised, meaning that the enterprise or an external provider are responsible for setting the learning methods, the schedule, the admission requirements and the location where learning will take place. If these conditions are not fulfilled, then the learning activities are considered to be informal (Eurostat, 2016<sup>[1]</sup>).

The existing evidence also allows distinguishing between different forms of training and informal learning. Training programmes can be classified along three main dimensions (see Figure 2.1). First, training programmes differ by their degree of formalisation, i.e. whether they lead to a formal qualification, certificate or licence. Second, they can cover different content, including technical and soft skills, knowledge about security requirements in the workplace or foreign languages. Third, training programmes can be provided through different modes of delivery. Enterprises can offer training in courses in-person, on-the-job or online.

**Figure 2.1. Overview of learning opportunities in enterprises**



Note: Training is considered formal if it leads to a qualification recognised by national education or equivalent authorities, which lasts at least one semester, and non-formal otherwise. Non-formal training can sometimes be formalised through qualifications, certificates or licences (QCL), e.g. issued by a professional organisation. Courses in-person can be delivered in a classroom or workshop format. On-the-job training refers to periods of training using normal tools of work, either at the immediate place of work or in a work-situation. Online training refers to self-directed training (e.g. following a course online with pre-determined learning methods), interactive learning sessions (e.g. a webinar) and blended models. Source: Elaboration based on Eurostat (2016<sup>[1]</sup>) and Fialho, Quintini and Vandeweyer (2019<sup>[2]</sup>).

Developing a comprehensive classification for informal learning is more challenging, due to its unstructured nature. Previous research by the OECD distinguishes between learning by doing, learning from others and keeping up to date with new products and services, based on the classification offered by Survey for Adult Skills (PIAAC) (see Figure 2.1). Beyond definitions, the existing evidence on the incidence and drivers of adoption of the different forms of training and informal learning remains limited. The academic literature and cross-country surveys, such as the Continuous Vocational Training Survey (CVTS), allow building a consistent picture of the content and mode of delivery of training programmes. Conversely, it remains difficult to understand what drives the adoption of different types of training content, what determines the decision to offer training leading to qualification, licences or certificates, and what informal learning opportunities enterprises offer.

This chapter presents evidence on what learning opportunities are provided by enterprises. The chapter starts by investigating the type of training enterprises offer along the three main dimensions in Figure 2.1: i) the content of training; ii) the degree of formalisation; iii) the mode of delivery. When discussing the mode of delivery, the chapter explores the impact of the COVID-19 pandemic on the adoption of online training. Then, it examines what informal learning opportunities enterprises offer and what drivers their adoption.

## Content of training

Knowing what types of content are targeted in training programmes can help policy makers and social partners contextualise overall patterns of participation in training and assess whether enterprises and their employees are preparing for the future work. The economics literature has traditionally emphasised the distinction between general skills, which are transferable across enterprises, and firm-specific skills, which target the needs of the current employer. Conversely, firm-level surveys, such as the CVTS, collect data on a wider range of training content. New information from the case studies can help enrich the evidence base on what types of training content are offered in enterprises and what factors drive their adoption.

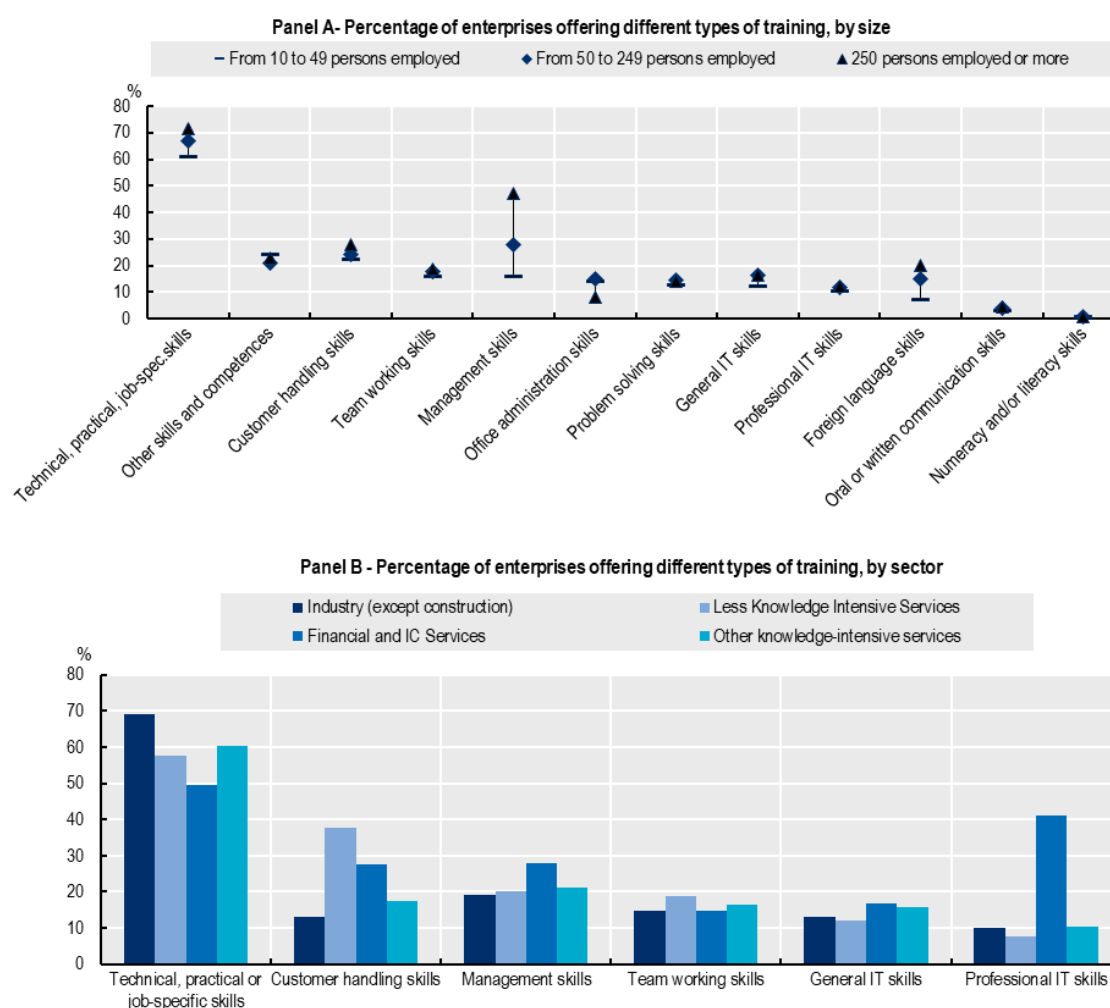
### *Existing evidence on the content of training*

The **economics literature** on training has evolved over the past decades, but the theoretical framework has remained focused on the distinction between **general** and **firm-specific skills**. According to the seminal insights from human capital theory, in perfectly competitive labour markets, enterprises would only provide firm-specific training, because competing enterprises might poach workers who received general training, leading to a negative return of investment (Becker, 1975<sup>[3]</sup>). In reality, labour markets are rarely perfectly competitive. Subsequent research has shown that labour market frictions, such as imperfect information on labour market opportunities, and preferences over location, work culture and colleague sociability can mitigate poaching concerns, making the provision of general training a worthwhile investment (Acemoglu and Pischke, 1999<sup>[4]</sup>; Acemoglu and Pischke, 1999<sup>[5]</sup>; Stevens, 1994<sup>[6]</sup>). Recent economic research has also aimed to quantify the benefits and explore the barriers to the provision of different types of training. A summary of this literature is provided in Chapter 3.

**Firm-level surveys** do not make the distinction between general and firm-specific skills, focusing on collecting data on training in a **wider range of types of training content**. The CVTS identifies 12 different skills that are targeted in training programmes, ranging from technical skills to numeracy or literacy skills (see Figure 2.2, Panel A). Although the classification is quite wide-ranging, the empirical literature suggests that enterprises could engage in at least two additional types of training. On the one hand, linked employee-employer Canadian data show that the orientation of new employees made up for 31% of on-the-job training (Dostie, 2013<sup>[7]</sup>). On the other hand, according to recent research in psychology, enterprises may offer programmes targeting intrapersonal soft skills, which aim to improve emotional intelligence, such as self-awareness and the ability to manage oneself, in addition to interpersonal soft skills, such as ‘team working’ and ‘management’, covered by the CVTS (Botke et al., 2018<sup>[8]</sup>).

Some of the key findings from the CVTS data seem to be consistent with the insights from human capital theory. Enterprises in the EU-27 are disproportionately more likely to offer training on technical, practical or job-specific skills, which is more likely to be firm-specific (see Figure 2.2, Panel A). In practice, a large proportion of this training focuses on health and safety and is delivered due to regulatory pressure (see Chapter 3). Other data from the CVTS suggest that training on health and safety accounts for 23% of total training hours across enterprises in the EU-27. Fewer enterprises offer courses related to soft skills (e.g. ‘team working’) and general IT skills, and virtually no enterprises offer courses related to foundational skills, which are more easily transferable to other firms and work contexts. Yet, in line with subsequent economic research, other factors are likely to determine the choice of training content. There is substantial variation in types of training offered across sectors, but not across different size classes (see Figure 2.2). For example, technical skills are more common in Industry, customer-handling skills are more prevalent in the Services sectors and professional IT skills are predominant in Finance and Information and Communication (IC) Services. These differences cannot be easily explained through the usual framework offered by human capital theory and might be driven by enterprise and labour market characteristics.

**Figure 2.2. Skills targeted in training opportunities in the EU**



Note: Data report the three most frequently targeted skills by enterprises in CVT courses. The sample includes enterprises with 9+ employees from all sectors in EU-27 countries.

Source: Eurostat, CVTS 2015, [trng\_cvt\_29s, trng\_cvt\_29n2]

## New evidence on the content of training

Insights from the case studies can expand the evidence base on i) what types of training content enterprises offer; and ii) what factors drive the adoption of different types of training content.

### *Describing types of training content*

Training reported by enterprises in the context of the semi-structured interviews falls into six main categories (Table 2.1). The most frequent type of training focuses on **technical, practical or job-related skills**, followed by training in **health, safety and security** and **soft skills**. Programmes for the **induction of new employees to the enterprise** come next in order of importance, contributing to employee adaptation to company cultures and processes. Programmes targeting **IT skills** are less common, whereas **foreign language** courses are only offered in a handful of enterprises.

**Table 2.1. Types of training content offered by enterprises in the case studies**

| Type of training                             | Examples of content in training programme   |
|--|---|
| Technical, practical or job-specific skills  | Lean production, machine training, product training, office administration, accounting and financial modelling, sales training, customer-handling |
| Health, safety and security in the workplace | Hygiene, first aid, security in the workplace, health and safety in the workplace   |
| Soft skills                                  | Resilience, self-organisation, communication, conflict management, co-operation in a team, leadership, management                                 |
| Induction of new employees                   | Corporate culture, introduction to different areas of the company, mix of skills and knowledge areas for new position                             |
| General and professional IT skills           | Software, cloud platforms   |
| Foreign language                             | Local language lessons for non-native speakers, foreign language lessons for native employees   |

Note: Interviewees were asked to describe in detail the two most frequently offered training opportunities in the enterprise. The six types of training were developed starting from the CVTS categories to best summarise the information gathered.

Source: OECD Enterprise training strategies case studies; based on interviews in 100 enterprises in AUT, EST, FRA, IRE, ITA.

The six types of training identified in the enterprise case studies and the CVTS categories have a degree of overlap, but discrepancies are also present. Firstly, firms mention frequently and explicitly training related to **health, safety and security in the workplace**, a category that is not available in the CVTS. Enterprises in the sample generally prioritise training programmes covering health, safety and security, because of regulatory pressures (see Chapter 3). Examples of training programmes covering health, safety and security include first-aid training, training on hygiene regulations or security measures.

Secondly, enterprises in the sample mention a much wider range of training opportunities targeting **soft skills** than those included in the CVTS classification (i.e. ‘team working’ and ‘management’). The results confirm the findings of the psychology research that many enterprises offer programmes that aim to improve intrapersonal soft skills, such as resilience and self-organisation (Botke et al., 2018<sup>[8]</sup>). For instance, a large firm providing Low-Knowledge Intensive Services (LKIS) in Austria offers a two-day optional training programme on resilience that helps employees deal with stressful situations.

*The three most frequently taken up training courses in the enterprise are according to HR, those in which the aim is to “learn more about yourself”, such as resilience training. Resilience training is about dealing with stressful situations, finding the way back to the “inner balance”. The course is implemented on-site with an external trainer and lasts about two days.*

*Large LKIS enterprise, Austria*

Courses on interpersonal skills focus on communication and feedback, conflict management or co-operation in a team. Enterprises also offer programmes on leadership on top of programmes targeting management skills. For example, a large high-tech manufacturing enterprise in Italy offers leadership training to ensure that all employees develop their leadership potential consistently with company values.

Thirdly, the enterprises in the sample frequently mention **induction training** for new employees. Consistent with research on Canadian data (Dostie, 2013<sup>[7]</sup>), some enterprises in the sample report offering specific training programmes for new employees, which do not easily fit in any other category. These programmes may encompass an introduction to the corporate culture or the different lines of business in the enterprise. They may also convey a broad mix of skills and knowledge areas for the new position, often involving technical and soft skills and covering safety requirements in the workplace. For instance, new employees in a hotel in Estonia participate in a two-day induction programme, where they are introduced to the how the business functions, and they receive training in any specific areas where they might have skill gaps.

Contrary to their relevance in the current EU policy-debate, the case studies included little mention of training programmes to improve the literacy and numeracy of low-skilled adults or training targeting green skills or green management practices, which may be increasingly important in the context of climate change action and the European Green Deal. Clearly, it is possible that green skills are covered in existing programmes, but the case studies did not provide any indication that this is the case. Chapter 5 explores why and how government and social partners could intervene to foster the adoption of training targeting green skills and green management practices.

### *Patterns in the provision of training content*

The choice of training content seems to be mainly driven by **sector**, the **degree of workforce autonomy**, the **education level of the workforce** and the **product market strategy** (see Table 2.2). As in the CVTS, sector plays a more important role than size in driving training provision (see Table 2.2). For example, Knowledge-Intensive Service (KIS) enterprises are more likely to report implementing soft skills training, whereas low-tech manufacturing enterprises are more likely to focus on programmes covering technical, practical or job-specific skills.

**Table 2.2. Patterns in the adoption of types of training content in the case studies**

| Type of training content                     | Where is it more common?  |
|--|---|
| Technical, practical or job-specific skills  | Low-tech manufacturing enterprises<br>Enterprises with medium to low educated workforce without full autonomy   |
| Health, safety and security in the workplace | High-tech manufacturing and LKIS enterprises<br>Enterprises with medium to low educated workforce without full autonomy<br>Enterprises with a market strategy based on lower prices |
| Soft skills                                  | KIS enterprises<br>Enterprises with highly educated and autonomous workforce<br>Enterprises with a product market strategy based on new products and services                       |
| Induction of new employees                   | LKIS enterprises  |
| General and professional IT skills           | No clear pattern emerges  |
| Foreign languages                            | No clear pattern emerges  |

Note: Interviewees were asked to describe in detail the two most frequently offered training opportunities. The six types of training were developed starting from the CVTS categories to best summarise the information. Enterprises have a highly educated and autonomous workforce if their workforce is mainly educated at a tertiary level and if more than half of employees have full autonomy in how they execute their tasks. Source: OECD Enterprise training strategies case studies; based on interviews in 100 enterprises in AUT, EST, FRA, IRE, ITA.

To a significant extent, these sectoral patterns can be explained by the **degree of workforce autonomy** and level of education of the workforce. KIS enterprises are more likely to grant a higher degree of autonomy and their employees are more likely to hold a higher education qualification. There seems to be a positive relationship between the level of workforce autonomy and training on soft skills as opposed to technical skills or health, safety and security requirements in the workplace. When employees have higher discretion on how to conduct their tasks, it is more important that they have stronger intrapersonal skills to better manage their own time and better interpersonal skills to have more fruitful interactions with their colleagues. This was highlighted by an Estonian financial services enterprise offering a training programme targeting leadership and team working skills.

*The reason to offer this training is to develop leadership and teamwork skills: how to assemble service teams in the most effective way, so that joint collaboration works and everyone speaks the same language to each other and to customers.*

*Financial service enterprise, Estonia*

The **product market strategy** can also contribute to explain the provision of soft as opposed to “hard” skills. Enterprises with a market strategy based on new products and services are more likely to rely on soft skills training, because better soft skills can foster innovation through knowledge exchange among employees. Conversely, firms with a market strategy based on lower prices are more likely to limit their provision to compulsory training in health and safety in the workplace to keep costs low.

Identifying the drivers of adoption of programmes targeting IT skills and foreign languages courses is difficult, as these are less common in the sample. However, the interviews still allow the identification of some coherent patterns and potential good practices. Programmes targeting IT skills in the sample cover either cloud platforms and applications or specific software, such as Microsoft Excel. For cloud platforms and applications, the training programme is part of a widespread workplace transformation plan involving most employees in a few firms. For instance, a medium KIS enterprise in Italy works with an external provider on a company-wide digitalisation programme. Similar initiatives might be relevant to SMEs in the context of the digital transition.

*First, the enterprise worked with an external provider to identify which functionalities of a cloud service platform could be beneficial. Second, the provider delivered tailored training to a group of early adopters. Third, the early adopters helped other employees to become more familiar with the platform and its applications.*

*Medium KIS enterprise, Italy*

When it comes to **foreign language training**, enterprises report offering both local language classes to non-native-speakers (e.g. English lessons in an Irish firm) and foreign language classes to native employees (e.g. English lessons for French-speaking employees in a French enterprise). Local language classes can be important for the integration of workers with migrant background in the workplace. For example, a medium LKIS firm in Ireland offers English training to workers, who mainly come from Eastern Europe, so that they can grow and develop within the company.

## Degree of formalisation of training

The degree of formalisation of training has received increasing attention by policy makers. For example, the recent EU Skills agenda has put a strong emphasis on micro-credentials, which are certificates or badges that acknowledge the completion of small volumes of learning (European Commission, 2020<sup>[9]</sup>). Certification is particularly important for non-formal training which otherwise does not lead to a qualification that feeds into the National or European Qualification Frameworks (see Box 2.1).

These developments are consistent with the findings from the economics literature. According to economic research, participating in training that leads to a qualification, certificate or licence can facilitate transitions



in the labour market for individuals and speed-up the recruitment process for employers. However, enterprises might be reluctant to adopt training leading to a qualification, licence or certificate, because of poaching concerns, larger organisational costs and lower flexibility in the choice of the learning content. There is limited evidence from quantitative surveys on the incidence and drivers of formalisation. New data from the case studies can contribute to enrich the evidence base on what drives the decision to formalise training.

### Box 2.1. Defining degrees of formalisation of training

According to Eurostat, training is considered formal if it leads to a qualification recognised by national education or equivalent authorities, which lasts at least one semester, and non-formal otherwise. However, non-formal training can sometimes lead to a nationally recognised qualification or a certificate (e.g. issued by a professional organisation) or a non-accredited certificate of attendance. This leads to three main degrees of formalisation of training for the purpose of this chapter:

- Formal training
- Non-formal training, but leading to a qualification, certificate or licence
- Non-formal training and not leading to a qualification, certificate or licence

Source: Eurostat. (2016<sup>[1]</sup>), Classification of learning activities, <https://doi.org/10.2785/874604>.

### Existing evidence on the degree of formalisation

The **economics literature** suggests that obtaining a qualification or certificate can **reduce hiring frictions** in the labour market. Obtaining a certificate or a qualification can help individuals demonstrate (or “signal”) their skills, knowledge and abilities. This decreases uncertainty for potential employers, who can more easily identify suitable candidates for a job vacancy and face lower recruitment costs (Spence, 1973<sup>[10]</sup>). Consistent with these insights, a study relying on US data found that a second chance secondary education programme increased earnings by 10-19% for individuals who took part in the programme, compared to individuals who did not take part, but had similar levels of skills (Tyler, Murnane and Willett, 2000<sup>[11]</sup>). This difference in earnings is explained by the fact that participants to the programme were better able to demonstrate their skills to potential employers (Tyler, Murnane and Willett, 2000<sup>[11]</sup>). Similarly, a more recent working paper has found that obtaining a skills certificate increases earnings for freelancers competing in an online market place, after controlling for their level of productivity (Kässi and Lehdonvirta, 2019<sup>[12]</sup>).

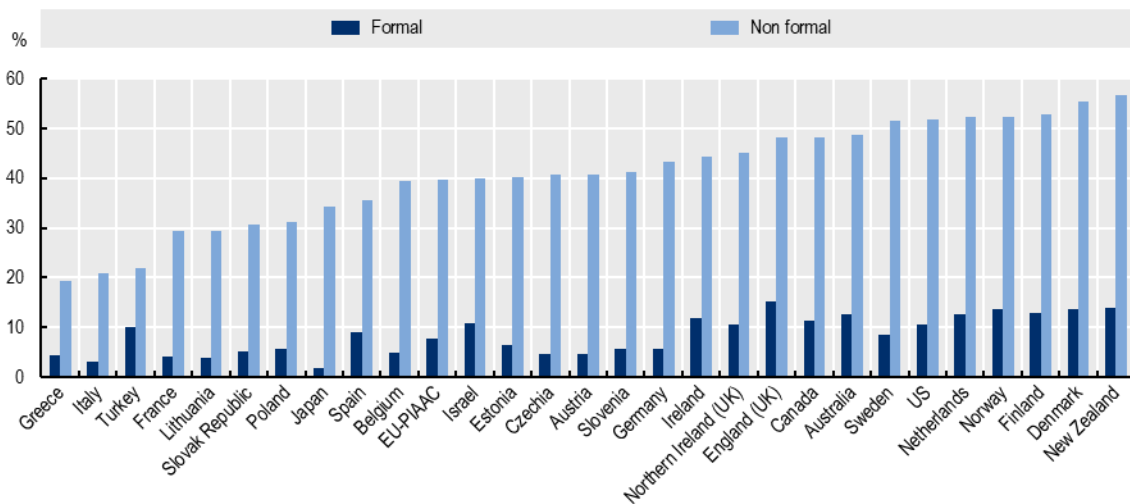
However, there is **limited evidence on the adoption and drivers of training leading to qualifications, certificates and licences** among employers. In principle, when organising and delivering training, employers may be reluctant to opt for formal qualifications or certificates for at least three reasons. Firstly, it might increase the probability that competing firms poach their employees, precisely because their skills, knowledge and abilities become more visible. Secondly, it might increase organisational costs, by making it necessary to rely on external training providers, which are often responsible for delivering certificates (see Chapter 4). Thirdly, it might reduce the flexibility in the choice of the learning content, methods and schedule, because employers might need to adhere to some pre-determined criteria specified within the available certificates and qualifications.

Consistent with these insights, the available evidence suggests that **formal training is not common**. Existing cross-country firm-level surveys, such as the CVTS and the ECS, do not have precise information on the proportion of training that leads to nationally recognised qualifications, certificates or licences.<sup>1</sup> Individual level surveys often ask respondents whether they were enrolled in formal education and training.

Previous OECD research has relied on the PIAAC data to analyse patterns of participation in formal job-related training among individuals (Fialho, Quintini and Vandeweyer, 2019<sup>[2]</sup>). The results suggest that only 8% of employed individuals across the EU participate in formal training, compared to 40% for non-formal training, and that in no EU country participating in PIAAC more than 15% of employed individuals take part in formal training (see Figure 2.3). This implies that only 16% of all job related training undertaken by working adults in the EU is formal.

### Figure 2.3. Participation in formal and non-formal training

Percentage of employed individuals participating to each type of training, by country



Note: The PIAAC questionnaire asks respondents to specify whether they have studied towards a full-time or part-time qualification. Clearly, this may include formal qualifications that are taken outside of the work context. To overcome this limitation, Fialho, Quintini and Vandeweyer (2019<sup>[2]</sup>) limit the sample to employed individuals participating in job-related courses. However, non-formal training in this context covers both non-formal training leading to a qualification, certificate or licence and non-formal training not leading through a qualification, certificate or licence. This means that the data on formal training alone might underestimate the extent of formalisation and certification of training among employers. Source: Fialho, Quintini and Vandeweyer (2019<sup>[2]</sup>), based on calculations from PIAAC, 2012, 2015.

### New evidence on the degree of formalisation

Consistent with the PIAAC data, **formal training in the sample is not common**. Only a handful of programmes offered by enterprises in the sample lead to a nationally qualification that meets the Eurostat criterion to be considered formal education. **Certified training is more widespread**, but its adoption is heavily driven by **regulatory pressures**. This is in line with the findings from Chapter 3, which show that regulatory pressures are one of the main reasons driving the decision to provide training. Less than a quarter of training programmes in the sample led to a qualification, certificate or licence and most of these programmes last between one and five full days.

The adoption of training certified through a nationally recognised certificate or licence is only **common** for training on **health, safety and security** and **technical, practical or job-specific skills** (see Table 2.3). Training on health, safety and security in the workplace has the highest likelihood of leading to a nationally recognised certificate or licence. This typically happens to meet legislative or regulatory requirements. For instance, a high-tech manufacturing enterprise in Estonia reported that legislation requires to designate first-aid providers who need to renew their certificate at least every three years. A high-tech manufacturing firm in Ireland reports having to offer a one-day training whenever new equipment is installed to comply with health and safety regulations. Similarly, training on technical, practical or job-specific skills is often certified, because employees in several enterprises in the sample are legally required to obtain licences

or certificates to drive vehicles or operate machines, such as cranes or forklifts. For instance, workers in two French firms in the sample are legally required to hold safe driving aptitude certificates (*CACES*, *Certificat d'aptitude à la conduite en sécurité*). Employees are also required to obtain a certification to operate in certain job positions. For example, accountants across countries in the sample need to pass exams to become eligible to practice. These courses are typically longer, frequently lasting several months.

**Table 2.3. Types of training content and degree of formalisation in the case studies**

| Type of training content                     | How common is the formalisation or certification of the training programme? | Most common type of formalisation or certification |
|--|---|--|
| Technical, practical or job-specific skills  | Very common   | Nationally recognised certificate or licence       |
| Health, safety and security in the workplace | Common  | Nationally recognised certificate or licence       |
| Soft skills                                  | Rare  | Certificate of attendance                          |
| IT skills                                    | Very common   | Certificate of attendance                          |
| Induction of new employees                   | Rare  | Certificate of attendance                          |
| Foreign languages                            | Not common  | Certificate of attendance                          |

Note: During the interviews, enterprises were asked to describe in detail the two most frequently offered training opportunities. The six types of training were developed starting from the CVTS categories to best summarise the information gathered. In the table, "Rare" means less than 20% of instances of training across enterprises; "Not common" indicates between 20% and 40%; "Common" means between 40% and 60%; "Very common" indicates more than 60%.

Source: OECD Enterprise training strategies case studies; based on interviews in 100 enterprises in AUT, EST, FRA, IRE, ITA.

Generally, most other types of training content lead to a certificate of attendance rather than a nationally recognised certificate or licence. Receiving such a certificate is more common for IT skills, than soft skills, company induction and foreign languages. Given the benefits of certification for employees and their future employers, there might be scope for government intervention to increase the provision of certified programmes, especially for soft and IT skills (see Chapter 5).

## Mode of delivery for training

The psychology literature suggests that the mode of delivery plays a crucial role in making training effective. Policy makers can rely on the evidence base on the mode of delivery to understand what training opportunities are more valuable in different contexts. Firm-level surveys provide substantial evidence on the incidence on-the-job and course-based training, but not on the role played by online training. The case studies can help explain why enterprises provide training on-the-job or in a course, and can significantly enhance the evidence base on the adoption of online training, both before and after the outbreak of the COVID-19 pandemic.

### **Existing evidence on the mode of delivery**

According to the **psychology literature**, the mode of delivery is an important element of training design, which in turn influences the **transfer of training**, i.e. the extent to which the learning that results from a training experience transfers to the job and leads to meaningful changes in work performance (Ford, Baldwin and Prasad, 2018<sup>[13]</sup>). Enterprises need to decide whether to offer training in a course or on-the-job and in-person or online (see Box 2.2).

### Box 2.2. Defining the mode of delivery

Building on the Eurostat (2016<sup>[1]</sup>) classification of learning activities, this chapter makes a distinction between three main modes of delivery for training:

- Courses in-person: training sessions taught by one or more people, focused on a specific field and delivered in a class-room or workshop format
- On-the-job training: periods of training using normal tools of work, either at the immediate place of work or in a work-situation
- Online training: training that relies on online resources, which can be self-directed (e.g. following a course online with a pre-determined learning methods), interactive (e.g. a webinar) or blended (i.e. mixing in-person and online delivery).

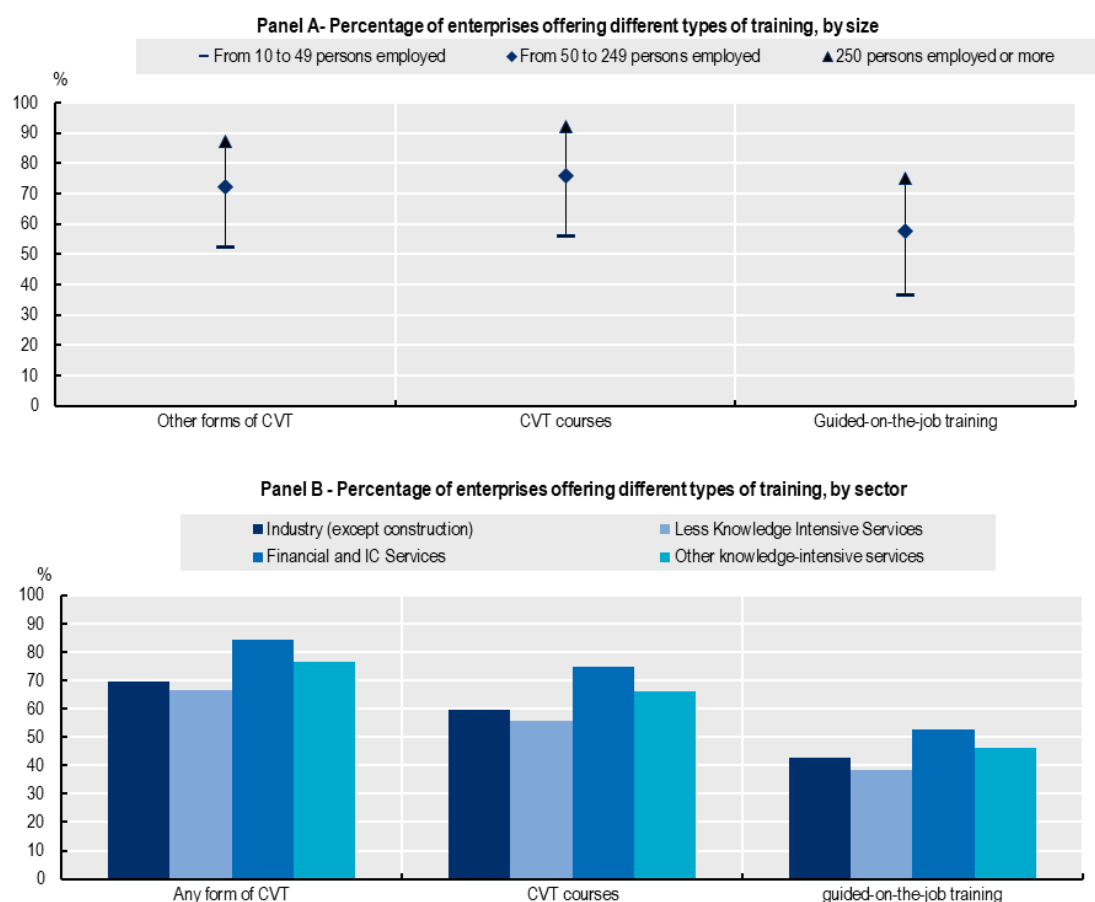
In principle, courses can also be offered in a distance-learning format. However, as most distance learning makes use of online resources, it can be considered self-directed online training. Online resources can also be used to foster informal learning (see the Informal learning section below). This happens, for example, if enterprises publish videos or documents online, but this information is not consolidated in a coherent training programme.

On the one hand, on-the-job training is likely to facilitate the transfer of training, as it provides training in a context that is similar to the actual job setting (Grossman and Salas, 2011<sup>[14]</sup>). On the other hand, in-person courses make it possible to adopt a wider range of learning methods that lead to better skill retention, while still providing settings that closely resemble multiple aspects of the workplace (Ford, Baldwin and Prasad, 2018<sup>[13]</sup>). Online training has often been described as leading to lower engagement and participation (Kraiger and Cavanagh, 2014<sup>[15]</sup>). However, it has the potential of making training more accessible and more compatible with work schedules (Kraiger and Cavanagh, 2014<sup>[15]</sup>).

The CVTS provides **information** on the incidence of **on-the-job** and **course-based** training. According to the CVTS, more enterprises in the EU offer training in courses than on-the-job: 60% of enterprises offer CVT courses, whereas 41% of enterprises offered on-the-job training.

The CVTS data do not reveal any coherent patterns in the mode of delivery. The results do not seem to be driven by size nor sector (see Figure 2.4). In line with previous research, smaller firms are less likely to offer both courses and on-the-job training (see Chapter 3). Similarly, firms in training-intensive sectors, such as Financial and Information and Communication Services are more likely to offer both forms of training, whereas enterprises in less training intensive sectors, such as Industry and LKIS lag behind on both.

**Figure 2.4. Provision of on-the-job and course-based training in the EU**



Note: Any form of CVT includes CVT courses, on-the-job training, job rotation, exchanges or secondments, self-directed learning, learning/quality circles and conferences, workshops, fairs and lectures. Sample includes enterprises with 9+ employees across all sectors in EU-27 countries. Source: Eurostat, CVTS 2015, [trng\_cvt\_01s, trng\_cvt\_01n2].

An econometric analysis of the ECS data provides a more detailed picture on the issue (see Box 2.3). Sector stands out as a crucial driver of the mode of delivery, after industry groups become less broad. The age of the enterprise, the number of hierarchical levels, the product market structure and the adoption of new technologies also seem to be important factors.

The **evidence on online training** from firm-level surveys is **limited**. The CVTS and the ECS do not have information on the incidence of online training. Previous research by the OECD, relying on individual-level PIAAC data, suggests that distance learning – of which online learning is likely to constitute a large share – is not common across EU and OECD countries (OECD, 2020<sup>[16]</sup>). Only one in five participants in non-formal learning took part in a distance course on average across the OECD. However, the share of participants training remotely varies significantly across countries, ranging from just 6% in France to over 40% in Lithuania and Poland.

### Box 2.3. Enterprise characteristics and mode of delivery

Econometric analysis of data from the European Company Survey 2019 (see Annex B for an illustration of the results and the methodology) provides additional insights on the relationship between firm characteristics and delivery mode. In line with previous evidence, the analysis shows that smaller firms train less intensively, whereas firms with HPWPs train more intensively. Other results depend on the delivery mode:

- Manufacturing and hospitality enterprises are more likely to have a high share of employees receiving on-the-job training, whereas transport and finance enterprises are more likely to have a high share of employees receiving course-based training.
- Younger firms are more likely to have a high share of employees receiving on-the-job training. Firms with a flatter structure are less likely to have a high share of employees receiving courses. In both cases, these firms might prefer less structured forms of learning, in line with the Informal learning section below.
- Adopting robots is positively correlated with having a high share of employees training on-the-job, suggesting that training is frequently delivered on-the-job, as training for other machines.

Despite its limited use, the **effectiveness of online training** is now being supported by nascent evidence from the **psychology literature**. A recent review of randomised controlled trials mainly focusing on health and social care professionals and university students suggests that webinars are as effective for skills retention as traditional face-to-face classrooms (Gegenfurtner and Ebner, 2019<sub>[17]</sub>). In a further study of more than 400 German trainees, Gegenfurtner, Zitt and Ebner (2020<sub>[18]</sub>) conclude that trainees preferred webinars no longer than 90 minutes and webinars that include the option of having real-time interactions with the facilitator.

The **COVID-19 crisis** has spurred **renewed interest** in online delivery of training. Social distancing measures to contain the spread of the virus have made delivering training face-to-face either impossible or impractical. Many practitioners have claimed that the crisis could represent an opportunity to accelerate the digital transition, including in the field of education and training (Standage, 2020<sub>[19]</sub>). Nonetheless, systematic evidence on the take up of online training during after the outbreak of the pandemic remains limited.

### ***New evidence on the mode of delivery***

The case studies can enrich the evidence base on the mode of delivery providing insights on the following dimensions: i) what drives the choice between training through courses in-person and on-the-job; ii) patterns in the adoption of online training before the outbreak of the COVID-19 pandemic; and iii) patterns in the adoption of online training after the outbreak of the COVID-19 pandemic.

#### *Patterns in the choice between courses in-person and on-the-job training*

The case studies reveal that the **main factor** driving the choice between training via courses in-person or on-the-job is the **type of training content** offered (see Table 2.4). Training on health and safety requirements, soft, IT and language skills is overwhelmingly delivered in a course-based format, whereas training on the induction of new employees is delivered either in a course-based setting or on-the-job. Training on technical, practical or job-specific skills is also delivered on-the-job, but to a lesser extent compared to the induction of new employees.

**Table 2.4. Types of training content and mode of delivery in the case studies**

| Type of training content                    | How common is delivery in courses in-person? | How common is delivery on-the-job? |
|---|--|------------------------------------|
| Technical, practical or job-specific skills | Very common                                  | Not common                         |
| Health and security in the workplace        | Very common                                  | Rare                               |
| Soft skills                                 | Very common                                  | Rare                               |
| IT skills                                   | Very common                                  | Rare                               |
| Induction of new employees                  | Common                                       | Common                             |
| Foreign languages                           | Very Common                                  | Rare                               |

Note: During the interviews, interviewees were asked to describe in detail the two most frequently offered training opportunities in the enterprise. The six types of training were developed starting from the CVTS categories to best summarise the information gathered. In the table, “Rare” means less than 20% of instances of training across enterprises; “Not common” indicates between 20% and 40%; “Common” means between 40% and 60%; “Very common” indicates more than 60%.

Source: OECD Enterprise training strategies case studies; based on interviews in 100 enterprises in AUT, EST, FRA, IRE, ITA.

These results may be explained by two factors: the desire to **foster the transfer of training** and the need to **respect regulatory requirements**. The same two factors explain why enterprises decide to rely on external providers (see Chapter 4), unveiling coherent patterns in the choice of the mode of delivery and the decision to outsource training. Consistent with psychology research (Grossman and Salas, 2011<sup>[14]</sup>), conducting training in the actual physical environment might facilitate knowledge retention for job-specific or firm-specific skills. For example, employees receiving barista training in an Irish hotel can practice directly with the coffee machine they will be using daily and receive some instructions on safety and cleaning procedures. This is not necessary for training on soft, IT and language skills, because trainers can recreate settings that closely resemble multiple aspects of the workplace. For instance, employees receiving a self-organisation and time management course in a large Austrian high-tech manufacturing firm are first asked to discuss anonymous practical examples from the workplace and they then get the opportunity to practice how to resolve these situations through role-playing. This interpretation is also supported by the opinions expressed by the interviewees, for instance the HR director in an Italian enterprise. On the other hand, providing training in courses rather than on-the-job can facilitate the involvement of external training providers, which might be best placed to deliver training for more transversal skills and knowledge areas (see Chapter 4).

*The decision of selecting one mode of delivery rather than another depends on the contents of the training. For example, a training about the production processes is more likely to be carried out as on-the-job training.*

*Large low-tech manufacturing enterprise, Italy*

Firms often need to deliver the training through a course in order to fulfil regulatory requirements. Many of the licences and certificates required by legislation to ensure health and safety in the workplace, manoeuvre machines or operate in certain job positions are obtained through courses offered by external providers (see Chapter 4). In this context, enterprises have little choice with respect to the mode of delivery.

These findings help **explain some of the econometric results** from the ECS (see Box 2.3). Course-based delivery models seem to be more common in sectors with more extensive regulatory requirements, such as Transport, where employees need to obtain licences to operate vehicles and machines, or in sectors in which training on soft-skills or IT skills is more prevalent, such as Finance and Insurance or Professional Services. Conversely, on-the-job training seems to be more common in sectors that have a stronger focus on job and company specific skills, such as Accommodation and Food.

### *Patterns in online training before the outbreak of the COVID-19 pandemic*

Before the outbreak of the pandemic, the provision of **online training was not widespread**. Online training was provided by a minority of enterprises in the sample and did only account for a small proportion of their total provision. In line with PIAAC data, less than a third of enterprises reported to make widespread use of online training before the pandemic. Whenever interviewees are able to provide precise figures, they report that online training represented between 10% and 30% of total training delivered before the pandemic.

The **provision of online training** before the outbreak of the pandemic was driven heavily by **size**. Large enterprises and/or enterprises that are part of a multinational company were disproportionately more likely to offer online training. In the majority of cases, these firms decided to build their own training or learning platform or “online university”, which could also include resources to support online informal learning. This is exemplified by an Irish financial services enterprise part of large multinational company.

*The enterprise makes use of an internal learning platform that has large volume of articles, videos and courses. Learning paths can be created by the individual or a manager can set a learning path for the employee. These paths are structured around four quadrants that match the enterprise’s impact model.*

*Financial services Enterprise, Ireland*

Consistent with insights from psychology research (Kraiger and Cavanagh, 2014<sup>[15]</sup>), these adopters of online training reported that online training facilitated access or reduced delivery costs. For example, an Austrian firm reported that online training has substituted other forms of internal training, because of its logistical advantages. A large French enterprise decided to invest heavily in an online training platform to reduce the costs of delivery long before the COVID-19 crisis, whereas an Irish logistics operator decided to rely on online training to increase efficiency and expand access.

*Some training is currently structured and delivered through an online internal training campus. The majority of such courses has pre-recorded content with a validation quiz at the end. This online delivery model will be increasingly used to increase efficiency in how people access training, and the amount of training they can engage with.*

*Enterprise providing warehousing services and support activities to transportation, Ireland*

The decision to develop an internal training platform by large firms mirrors their choices with regards to the insourcing of training (see Chapter 4). Developing an online learning platform helps to reduce costs and increase the overall quality of the training offer, which are the same reasons that cause large firms to insource training or set-up their own training centres (see Chapter 4). Medium enterprises are generally less likely to deliver training internally (see Chapter 4), implying that they might struggle to develop their own online training platform, but could still rely on online training courses offered by external providers.

In practice, the use of online training in **medium enterprises** seemed to be an **exception**, driven by specific circumstances or by the presence of management and staff with a technologically friendly attitude. The case studies offered only three examples of widespread use of online training in medium-sized firms. An Estonian LKIS enterprise located in a rural area reported using a learning platform developed by a sectoral association, because it had difficulties in accessing external training providers. An Italian firm in the IT sector reported sending online training programmes as induction material to new joiners, whereas an Irish LKIS business reported using a digital platform to provide instructional videos to employees, for example on how to use the in-house coffee machine. To some extent, the low adoption among medium enterprises might be driven by lower organisational capacity or lower levels of digital readiness among employees. The HR director in a French high-tech manufacturing firm reported that employees were “not ready for e-learning”, whereas an Estonian textile manufacturer reported failed experiments with online learning before the pandemic.



*Online training has been tried, for example, part of the induction training has been provided as an online course, but this was not well received and so the use of online training has remained modest.*

*Enterprise manufacturing textile products, Estonia*

As is the case for courses in-person and on-the-job training, the **content of training** played an important role in the adoption of online delivery. When considering the six types in the training typology, online delivery was only common for training for health, safety and security requirements and IT skills. Before the pandemic, there was some resistance to the widespread adoption of online delivery for technical skills, soft skills and the induction to the enterprise. Some firms emphasised that online training would lead to lower engagement and fewer opportunities to network among colleagues. For example, the HR director of an Austrian firm felt that face-to-face training in the classroom was especially important to strengthen the team spirit and create a good working climate. In practice, online training was often used to provide non-core optional training opportunities or to target specific types of training, where in-person interaction was less valuable. For example, a large French enterprise reported that online training was mainly used for simple and short training actions, while face-to-face training remained the norm when training needed to go deeper into the matter.

### *Patterns in online training after the outbreak of the COVID-19 pandemic*

The case studies suggest that the **pandemic** was an **accelerator of existing trends** in online training, rather than a real catalyst for change. Given patterns of adoption in online training before the pandemic, medium enterprises were less prepared for a transition to online learning when COVID-19 struck and experienced significant difficulties. Large enterprises were more prepared, but remain lukewarm about further expanding online delivery in the future.

During the pandemic, the relative importance of online training has increased in line with expectations, although training provision overall has fallen (see Chapter 1), as many enterprises substituted some in-person with online delivery. For example, a large high-tech Estonian manufacturer reports that several theoretical trainings moved online due to COVID-19 restrictions and the training sessions carried out in-person were required to have a limited number of participants. Similarly, a large high-tech manufacturing French firm reports that the outbreak of the pandemic has increased the overall incidence of online training from 5% to 20% of total provision.

However, the **transition to online training** was different for large and medium-sized enterprises. Pre-pandemic adopters, often large companies, were able to upscale online training capacity relatively quickly, by relying on existing platforms and resources. Non-adopters sometimes managed to organise online delivery successfully. For instance, a medium-sized low-tech firm in Ireland reported that demonstrations from suppliers of equipment, which were typically delivered in-person, were delivered through online video conferencing without a substantial loss of quality. However, in most cases, non-adopters struggled to organise online delivery. For example, a medium-sized high-tech enterprise in Ireland reports experiencing higher organisational costs, due to difficulties in planning and co-ordinating the delivery of training and liaising with external training providers.

*Planning and co-ordinating training remotely, and accessing training providers to deliver online proved problematic. Due to these two reasons, the costs of providing training increased overall. The enterprise found this surprising, given that online delivery should be more cost-effective.*

*Medium high-tech enterprise, Ireland*

Because of these difficulties, **non-adopters**, frequently medium-sized companies, do not plan to expand online delivery after the pandemic. Non-adopters mainly considered online delivery as an emergency response and are planning to go back to face-to-face delivery models as the pandemic ends. For example, an Italian co-operative providing educational and social services refers to online delivery of training as an

“exception”. Against this background, Chapter 5 discusses why and how governments and social partners should support smaller enterprises in the provision of online training.

*The training activities are mainly organised through in presence classrooms, with the exception of the pandemic period, where the activities have been mainly carried out online.*

*Enterprise providing educational and social services, Italy*

**Pre-pandemic adopters** seem to be more willing to upscale their online training capacity, consistently with their plans before the outbreak of the pandemic. This attitude was best exemplified by a large Estonian LKIS firm.

*The proportions are currently approximately 70% online and 30% face-to-face. These changes will probably outlast the pandemic as the implementation of a web-based training system was already planned in the company before the pandemic.*

*Large LKIS enterprise, Estonia*

Even large pre-pandemic adopters of online learning **remain sceptical of the application of online learning**. Several companies insist that face-to-face training sessions are important both for improving the transfer of training and for fostering relationships among colleagues. For instance, a large KIS enterprise in Ireland suggested that in-person sessions leave room for more spontaneous discussions that can in turn lead to new ideas. A professional services firm in Ireland felt that in-person training sessions remain valuable to foster cohesion among trainees. This suggests that in-person delivery will continue to play a central role, even among pre-pandemic adopters. However, some enterprises suggested that it might be possible to better combine in-person and online delivery in blended formats, for instance by alternating online and in-person sessions with the same group of trainees. This could allow combining the flexibility provided by online training with the benefits of in-person delivery.

## Informal learning

Policy makers and social partners need to build a strong understanding of what informal learning opportunities enterprises offer, in order to maximise the amount and quality of learning in workplaces. Although measuring informal learning has proven difficult, the economics and psychology literature suggest that it accounts for more than 70% of the total learning time in enterprises and that it leads to significant tangible and intangible benefits, such as higher wages, higher productivity and higher levels of job-satisfaction. The case studies can enrich the evidence base on what informal learning opportunities enterprises offer, and provide more evidence on what drives their adoption.

### **Existing evidence on informal learning**

#### *Evidence from economics and psychology research*

Recent empirical work from both the economics and psychology literature suggests that **informal learning** is **more important** than other forms of learning in terms of incidence and intensity. Yet, **measuring informal learning** has proven difficult, due to its unstructured nature (see Box 2.4). Previous research by the OECD finds that informal learning represents 80% of the total hours spent in non-formal and informal learning (Fialho, Quintini and Vandeweyer, 2019<sup>[2]</sup>). The OECD research defines informal learning as the occurrence of learning by doing, learning from colleagues and supervisors or learning new things to keep up to date with new products and services. About 56% of individuals learn by doing during their job at least once a week, on average across OECD countries, whereas 43% learn from others and 40% learn new things to keep up to date with new products and services (Fialho, Quintini and Vandeweyer, 2019<sup>[2]</sup>). A

Dutch study that developed a task-based measure of the time individual spent learning at work shows that employees spend on average 35% of their time on activities from which they learn, implying that informal learning accounts for 96% of the total learning time in the workplace (Borghans, De Grip and Van Thor, 2014<sub>[20]</sub>). Similarly, a review of the psychology literature suggests that informal learning is responsible for 80 to 90% of learning at work (Kraiger and Cavanagh, 2014<sub>[15]</sub>).

According to both the economics and psychology literature, **informal learning** is also associated with **important benefits** for individuals and enterprises. The economics literature has emphasised the effect of informal learning on wages and productivity. Previous OECD research finds that, after correcting for a number of socio-demographic and job characteristics and controlling for selection into training of the most motivated employees, participation in informal learning is associated with 3.5% higher wages on average across the OECD, compared to 11% for non-formal training (Fialho, Quintini and Vandeweyer, 2019<sub>[2]</sub>). A recent paper focusing on a field experiment in a sales firm has concluded that employees who were encouraged to seek advice from a randomly chosen partner during structured meetings had average sales gains exceeding 15%, which lasted for 20 weeks after the experiment had ended (Sandvik et al., 2020<sub>[21]</sub>). In parallel, the psychology literature has focused on intangible benefits. Informal learning is positively related to overall job satisfaction, and self-rated measures of job performance (Noe, Clarke and Klein, 2014<sub>[22]</sub>). Informal learning can also enhance the transfer of training, by enabling individuals to foster the skills and knowledge that they received during courses and on-the-job training (Noe, Clarke and Klein, 2014<sub>[22]</sub>).

#### Box 2.4. Measuring informal learning

Measuring informal learning is difficult, because it is not institutionalised. This means that it may not be possible to keep track of where and when learning is happening. The academic literature has employed three main approaches to overcome this intrinsic limitation:

- Individual-level surveys: ask individuals to specify how much time they spend on different forms of informal learning – for instance Fialho, Quintini and Vandeweyer (2019<sub>[2]</sub>)
- Task-based measures: estimate how much time individuals spend on tasks that involve learning and tasks that do not – for example Borghans, De Grip and Van Thor (2014<sub>[20]</sub>)
- Field experiments: explore how a discrete change in learning conditions (e.g. seeking advice from a partner) affects individual and firm outcomes – for instance Sandvik et al. (2020<sub>[21]</sub>)

Similarly, it has been difficult to distinguish between different forms of informal learning. Using the PIAAC survey, Fialho, Quintini and Vandeweyer (2019<sub>[2]</sub>) distinguish between three different forms of informal learning:

- Learning by doing: how often individuals learn-by-doing from the tasks performed
- Learning from others: how often individuals learn new work-related things from colleagues or supervisors
- Learning new things to keep up to date with new products and services: how often the individual's job involves keeping up to date with new products or services

Previous OECD research suggests that there is a **positive correlation between informal learning and non-formal training** (Fialho, Quintini and Vandeweyer, 2019<sub>[2]</sub>). In general, the individual and enterprise characteristics associated with a higher participation in non-formal training and informal learning coincide (see Chapter 3 for patterns in training participation). For example, the chances of learning informally at work decrease with age and tenure and increase with educational attainment (Fialho, Quintini and Vandeweyer, 2019<sub>[2]</sub>).

However, the **provision of informal learning** opportunities by enterprises seems to be particularly **dependent on work practices and the work environment**. Ensuring that employees engage in informal learning is more difficult than making sure that they take part in training. Unlike training, informal learning is not institutionalised and visible. Enterprises can verify whether employees participate in a training programme, but it may be more challenging to ask and monitor whether employees receive effective mentoring from a more experienced colleague, whether they join information sharing sessions or keep up to date with new products and services. Work practices and the work environment can help improve engagement in informal learning.

Previous OECD research suggests that informal learning is more common among firms that adopt high performance workplace practices (HPWPs), whereby jobs are characterised by high levels of autonomy, performance-based pay and teamwork (Fialho, Quintini and Vandeweyer, 2019<sup>[2]</sup>). Similarly, the psychology literature finds that the incidence of informal learning is influenced by contextual work factors, such as the commitment of management to learning, the presence of an internal culture committed to learning and access to people to form webs of relationships (Noe, Clarke and Klein, 2014<sup>[22]</sup>).

**Size** seems to also play an important role. The psychology literature suggests that informal learning may be more common in small and medium enterprises, who may lack the resources to organise more structured training provision (Cardon and Valentin, 2017<sup>[23]</sup>).

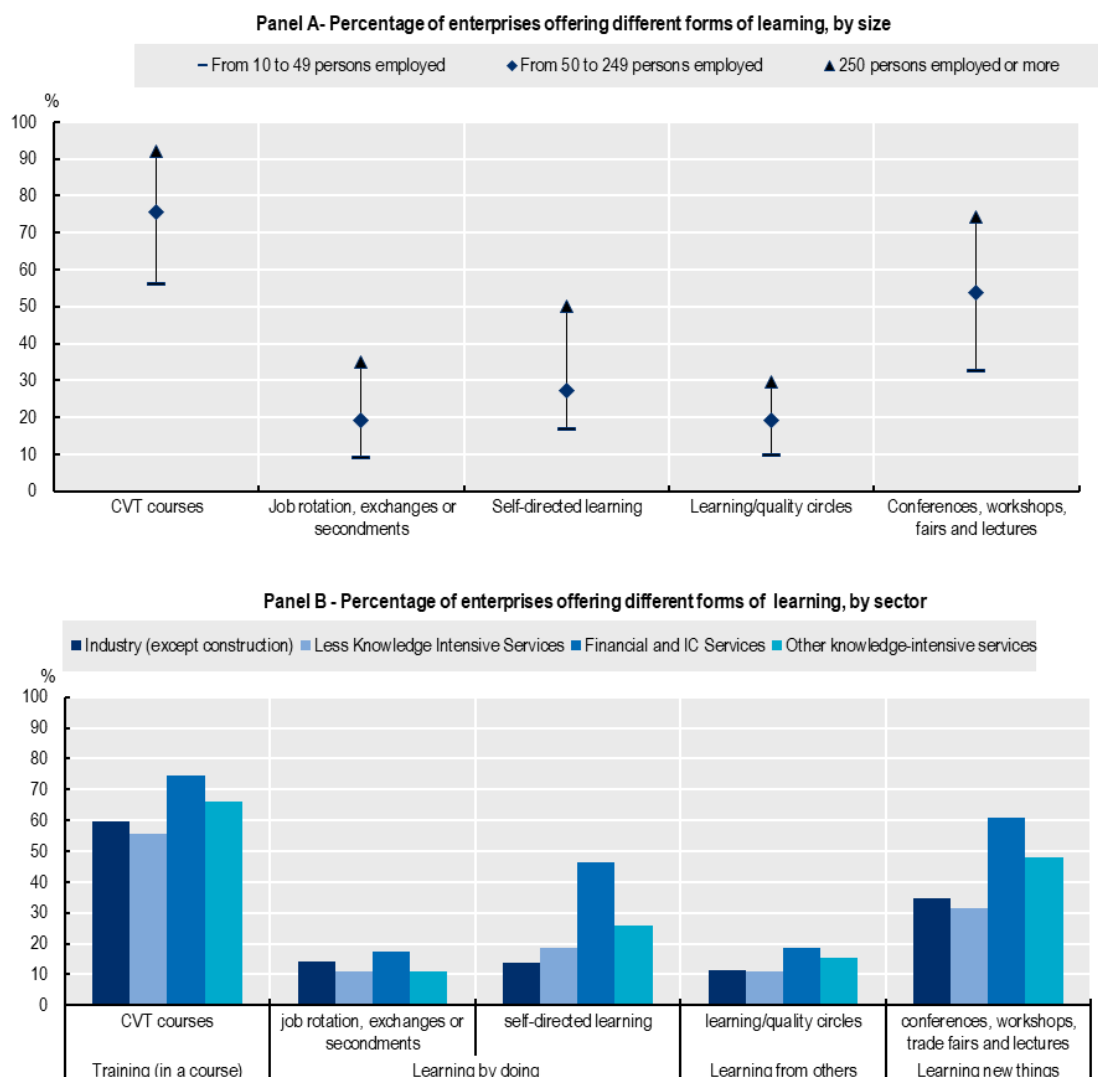
Recently, the psychology literature has also started emphasising the importance of **online resources** in fostering informal learning. Technology tools and applications, which are often combined in a learning management system, allow on-demand access to learning materials and can foster exchange among colleagues (Gegenfurtner, Schmidt-Hertha and Lewis, 2020<sup>[24]</sup>). As for online training, several commentators and practitioners have pointed out that the adoption of such resources could accelerate during the COVID-19 crisis (Standage, 2020<sup>[19]</sup>). However, the evidence on the incidence and drivers of adoption of online resources to foster informal learning remains limited.

#### *Evidence from firm-level surveys*

When looking at the results from the CVTS, informal learning does **not seem to be as prevalent** as the psychology and economic literature would suggest. Data from the CVTS suggests that **informal learning is less common** than training courses. The CVTS includes information on a wide range of informal learning opportunities, including learning by doing through job rotation, exchanges and secondments and self-directed learning, learning from others through learning and quality circles, and keeping up to date through conferences and workshops (see Figure 2.5). None of these forms of informal learning is as common as training courses, across enterprises from different size-classes and sectors.

To some extent, the **mismatch** between the CVTS and the results from the academic and psychology literature might reflect the **emergent nature of informal learning**. Informal learning is not offered by enterprises, but happens through spontaneous interactions among employees, that can be nurtured through the creation of learning environment. This implies that asking enterprises, as opposed to employees, what informal learning opportunities are “offered” in their organisation might underestimate the overall incidence of informal learning.

Figure 2.5. Incidence of informal learning in the EU



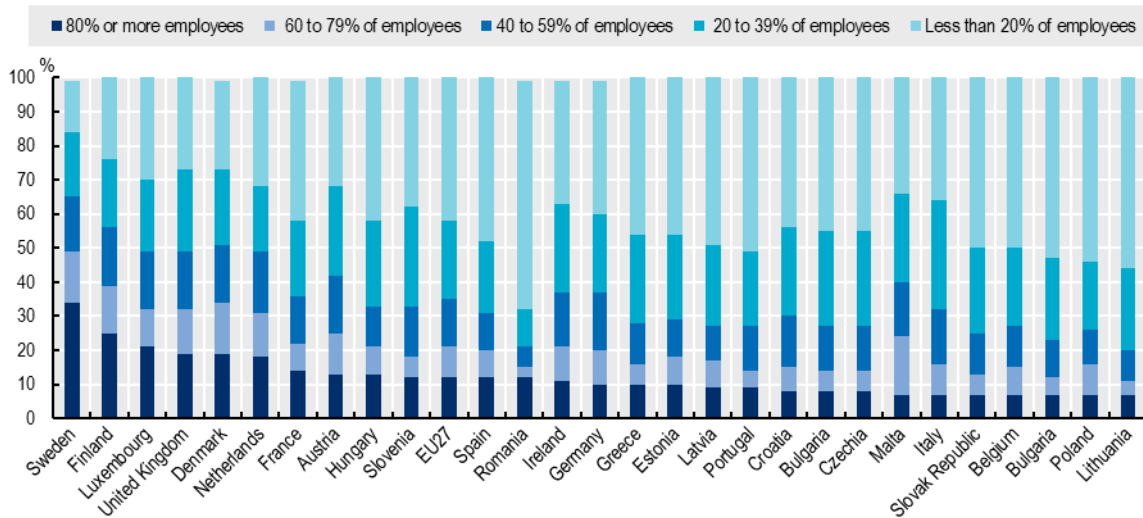
Note: Sample includes enterprises with 9+ employees across all sectors in EU 27 countries.  
Source: Eurostat, CVTS 2015, [tmg\_cvt\_01s, tmg\_cvt\_01n2].

Learning by doing could also happen through exposure to problem solving, in addition to job rotation, exchanges and secondments, and self-directed learning. The ECS shows that **problem solving is not common** (see Figure 2.6). In 42% of establishments across the EU, relatively few employees (less than 20%) have jobs that enable them to find solutions to unfamiliar problems.

There is substantial variation across countries. In Nordic countries, such as Sweden and Finland, less than a third of enterprises offer limited problem solving opportunities. Conversely, in some Central European countries, such as Poland and Lithuania, more than half of enterprises give only very few employees any exposure to unfamiliar problems.

**Figure 2.6. Incidence of problem solving across the EU**

Percentage of enterprises reporting that a given share of their employees engage in problem solving



Note: Data come from the management questionnaire. Managers were asked how often their employees “find solutions to unfamiliar problems”.  
Source: Eurofound, ECS 2019, [comprobs].

Further econometric analysis of the ECS suggests that problem solving is **concentrated in a minority of enterprises**, which seem to be involved at least to some degree in the knowledge economy (see Box 2.5). Enterprises where employees engage more intensively in problem solving are more likely to belong to knowledge intensive sectors, to make use of HPWPs, to have higher levels of technology adoption and to be more innovative. To some extent, these results might also reflect the occupational composition of different enterprises.

### Box 2.5. Enterprise characteristics and intensity of problem solving at work

Econometric analysis of data from the European Company Survey 2019 (see Annex B for an illustration of the results and the methodology) provides additional insights on the relationship between different enterprise characteristics and problem solving intensity at work. The results show that enterprises with the following characteristics are more likely to report have a higher share of employees engaged in problem solving:

- Enterprises in two knowledge intensive sectors, information and communication and professional and technical services, but not in finance and real estate
- Enterprises that adopt HPWPs, as in previous research (Fialho, Quintini and Vandeweyer, 2019<sup>[2]</sup>)
- Enterprises that have recently adopted the use of data analytics and purchased customised software
- Enterprises which have a product market strategy based on developing new products and services or customisation

## New evidence on informal learning

The case studies can enrich the evidence base on i) what informal learning opportunities enterprises offer; ii) how enterprise characteristics affect the adoption of these opportunities; iii) and how enterprises can foster a learning environment.

### *Mapping different forms of informal learning*

Enterprises in the sample offer a wide range of opportunities covering the three dimensions of informal learning discussed in previous OECD research (Fialho, Quintini and Vandeweyer, 2019<sup>[2]</sup>): learning by doing, learning from others and keeping up to date with new products and services (see Table 2.5).

In the case of **learning by doing**, employees of firms in the sample can learn by getting **exposure to unfamiliar problems** in their job, as in the ECS, for instance by working on different projects, with new clients or new technologies. Alternatively, they can learn new working methods and procedures by getting **exposure to tasks and problems in different positions**, via trial or discovery periods, and, as in the CVTS, exchanges and secondments, or job rotation.

Opportunities to getting **exposure to tasks and problems in different positions** exhibit substantial differences in design and objectives. Trial and discovery days, exchanges and secondments, are not mandatory and can be requested by employees. Their objective is both to enable employees to familiarise themselves with new processes and work practices and to form relationships with colleagues in different parts of the business. For instance, in a French medium KIS firm, employees can spend a few days in a different service division that interests them to exchange with their colleagues. Conversely, structured job rotation system are typically mandatory and aim to improve productivity and resilience. For example, in a large low-tech manufacturing enterprise in Estonia employees are requested to rotate across different production zones at pre-defined intervals, according to production needs.

**Table 2.5. Different forms of informal learning in the case studies**

| Learning mode                                     | Form of learning                                     | Typical examples   |
|---|--|--|
| Learning by doing                                 | Exposure to unfamiliar tasks or problems             | Working across different projects, working with new clients, working with new technologies   |
|   | Exposure to tasks or problems in different positions | Trial or discovery periods, exchanges and secondments, structured job rotation system  |
| Learning from others                              | Pairing with more experienced employees              | Buddy schemes, mentoring schemes, working under supervision of an experienced colleague, coaching and tutoring sessions  |
|   | Observing and/or asking colleagues                   | Observing the work of others, asking advice, casual exchange with colleagues, daily feedback chats, asking questions on online forums or platforms   |
|   | Information sharing session with colleagues          | Working groups to address specific challenges, quality circles with experts, team meetings, cross-divisional meetings, seminars/talks to share best practices, online platforms for cross-company exchange |
| Keeping up to date with new products and services | Within the enterprise                                | Monitors displaying relevant information, monthly or quarterly newsletter, monthly or quarterly announcements, internal library, updates on intranet or internal learning platform, all-employee meeting   |
|   | Outside the enterprise                               | Exhibitions or trade fairs, conferences, guided visits of companies or plants  |

Note: During the interviews, enterprises were asked to describe in detail informal learning opportunities they offer. The forms of informal learning were chosen in order to best summarise the information gathered, on the basis of the baseline classification developed by Fialho, Quintini and Vandeweyer (2019<sup>[2]</sup>).

Source: OECD Enterprise training strategies case studies; based on interviews in 100 enterprises in AUT, EST, FRA, IRE, ITA.

When it comes to **learning from others**, employees are able to learn from both supervisors or colleagues in three main ways. Firstly, they can be **paired with more experienced colleagues**. New employees are

often assigned a buddy or mentor who gives them advice and support to better integrate in the company. New employees or employees starting in a new position frequently spend some time working under the supervision of a more experienced colleague. Employees who have already joined the company can receive coaching and tutoring session from more experienced colleagues or from coaches in the HR department. There is wide variation in the scope and organisation of these opportunities. In some enterprises, employees are assigned a buddy, mentor or supervisor, but their duties are only loosely defined. In others, there are specific requirements for the selection of mentors, supervisors or coaches, their responsibilities, and the frequency or format of the sessions, as in an Irish financial services provider.

*Mentees are paired with mentors who are at least 2 levels above them and are outside of their own business unit. Such pairings last for 6 months and mentors and mentees are expected to meet at least once a month during this period to discuss any issue mentees might be facing on their job.*

*Financial services enterprise, Ireland*

Secondly, employees can learn by **observing or asking colleagues**. These learning opportunities are often unstructured. Many enterprises report that employees can learn by observing the work of others or ask directly for advice or help. More structured forms may include daily feedback chats. For example, in a medium Irish LKIS business colleagues have short daily feedback chats where they review what is working well and what could be improved. Online platforms or networks can also play a role in encouraging employees to ask for help and support. For instance, a medium Austrian high-tech manufacturer has set-up a dedicated channel on the Slack application, where employees are encouraged to post question about work issues.

Thirdly, employees can learn through **information sharing sessions with colleagues**. Opportunities in this category include weekly or biweekly team and cross-divisional meetings, but also more specific or ad-hoc events, such as working groups to address specific challenges, quality circles among experts and seminar or talks for best practices. In many firms, these opportunities tend to have well-defined format, frequency and duration. For example, in a medium Austrian KIS enterprise lunch meetings are organised once or twice a month, where colleagues present a project they have been working on. Online platforms and tools can also play a role to encourage information sharing, for instance by enabling employees to share templates for outputs and examples of previous work.

Lastly, employees can **keep up to date** with new products and services, with opportunities both **inside and outside the enterprise**. Within the enterprise, this includes the management distributing information on new industry trends or products in a variety of ways, including newsletters, monthly or quarterly announcements or monitors in lounges. Some enterprises also have their own library with dedicated books and magazines, and share relevant information or learning material within online platforms, as suggested by the psychology literature. For example, a large Italian manufacturing firm uses its internal e-learning platform to distribute articles and studies on new industry trends and products. Team meetings or monthly and quarterly all-employee meetings also provide opportunities to share information on new products or industry trends, as highlighted, for instance, by an Austrian firm.

*The enterprise has a monthly all-employee-meeting, where the management presents all the facts and figures of the company and news about new products and developments.*

*Medium high-tech manufacturing enterprise, Austria*

For opportunities outside the enterprise, in line with the CVTS, firms report that they encourage employees to attend conferences, exhibitions and trade fairs, and sometimes organise visits of other production sites.

### *Patterns in the adoption of informal learning*

The adoption of these learning opportunities is not homogenous among enterprises. Consistent with the patterns in the types of training content above, the adoption of different forms of informal learning



opportunities seems to be driven mainly by **sector**, the **degree of workforce autonomy**, the **education level of the workforce** and the **product market strategy** (see Table 2.6). However, in the case of informal learning, **size** also plays an important role (see Table 2.6).

**Table 2.6. Patterns in informal learning in the case studies**

| Learning mode                                     | Form of learning                                     | Where is the form of learning more common?   |
|---|--|--|
| Learning by doing                                 | Exposure to unfamiliar tasks or problems             | KIS enterprises<br>Enterprises with highly educated and autonomous workforce   |
|   | Exposure to tasks or problems in different positions | Trial and discovery days, exchanges and secondments in enterprises with 1 000+ employees or that are part of a multinational.<br>Structured job rotation systems in high-tech and low-tech manufacturing |
| Learning from others                              | Pairing with more experienced employees              | Enterprises with 1 000+ employees or which are part of a multinational   |
|   | Observing and/or asking colleagues                   | KIS enterprises<br>Enterprises with highly educated and autonomous workforce<br>Enterprises with 50-250 employees and young enterprises (less than 10 years)<br>Market strategy based on better quality  |
|   | Information sharing sessions with colleagues         | KIS enterprises<br>Enterprises with highly educated and autonomous workforce<br>Market strategy based on new product development and better quality  |
| Keeping up to date with new products and services | Within the enterprise                                | No clear pattern emerges   |
|   | Outside the enterprise                               | KIS and high-tech manufacturing enterprises  |

Note: Interviewees were asked to describe in detail informal learning opportunities offered in the enterprise. The forms of informal learning were chosen in order to best summarise the information gathered. Enterprises have a highly educated and autonomous workforce if their workforce is mainly educated at a tertiary level and if more than half of employees have full autonomy in how they execute their tasks.

Source: Semi-structured interviews in 100 enterprises in AUT, EST, IRE, ITA, IRE.

**Sector** seems to be an important driver for offering informal learning opportunities, but its influence is partially due to the **degree of workforce autonomy** and the **education level of the workforce**. As foreshadowed in the section exploring the patterns in training content, KIS enterprises are more likely to have a more autonomous and better-educated workforce. Enterprises with a high degree of workforce autonomy and with a highly educated workforce seem to have a distinct informal learning model, characterised by exposure to unfamiliar problems, opportunities to learn by asking colleagues and information sharing sessions. Work in these enterprises is frequently organised around projects. For example, a provider of advertising services in Austria reports that employees can ask to be involved in different projects and that there is an effort to take their preferences into account to ensure high levels of engagement. These enterprises frequently invest resources in tools to facilitate information and knowledge sharing. For example, a large KIS firm in France has established a catalogue of competences to enable employees to identify colleagues with specific competences and has fostered the creation of product communities where employees can exchange information on specific products.

Enterprises in **manufacturing**, both low-tech and high-tech, are more likely to offer structured **job rotation systems**. The enterprises introducing these schemes seem to have a dual objective: enabling employees to develop new skills, while improving productivity and resilience of the enterprise as a whole. As employees expand their skillset, they become more fungible, allowing the firm to better respond to unforeseen shocks. For instance, a medium high-tech Irish manufacturer reports that a structured job rotation system is crucial to fill gaps caused by sickness or absence of key staff.

**Product market strategy** also plays an important role. Enterprises that strive to provide better quality and enterprises offering new product development are more likely to foster opportunities for information sharing. In these enterprises, information-sharing sessions seem to be an important forum where employees exchange information on good practices or new approaches. For example, a large Estonian firm that strives to provide better quality organises weekly divisional meetings where employees can review how the past week has gone and identify what could be done better. Yet, enterprises that strive to offer better quality, regardless of size, are also more likely to offer opportunities to learn by observing and asking colleagues. This constant exchange can be important to drive constant improvement in products and work practices. For instance, in a medium-sized Irish hospitality business daily feedback chats among employees are useful to review what is working well and what could be improved.

**Firm size** seems to influence the reliance on more or less structured forms of informal learning. Medium-sized enterprises, which are also more likely to be young, seem to rely more on opportunities to observe and ask colleagues. Conversely, the largest enterprises in the sample (1 000+ employees) and enterprises, which are part of a multinational, are more likely to offer trial and discovery days, exchanges and secondments, and pairing employees with more experienced colleagues. In smaller firms, employees are able to establish close working relationships with many colleagues. This attitude was best described by interviewees in a medium French manufacturer.

*Given that the company is small, everyone knows each other and exchanges regularly and easily, creating a climate that allows all employees to be interested in what other employees do.*

*Medium high-tech manufacturing enterprise, France*

As enterprises increase in size, proximity to other colleagues is progressively lost, but the pool of capabilities employees can draw upon grows. Buddies, mentors, supervisors and coaches become more important in channelling soft and hard knowledge to less experienced employees. Exchanges and secondments can become important to gain exposure to other parts of the business and strengthen internal networks.

### *Understanding how enterprises foster a learning environment*

Firm characteristics such as size, sector or the product market strategy are not the only factors influencing the adoption of informal learning. Consistent with the psychology literature (Noe, Clarke and Klein, 2014<sup>[22]</sup>), the cases studies suggest that engagement in informal learning depends on the **existence of a work environment** where learning is encouraged and valued. The case studies show that two drivers are especially important in shaping the creation of a learning environment, which may benefit from tailored policy interventions (see Chapter 5).

First, **management attitudes** are a crucial element of a learning environment. Some enterprises in the sample actively encourage managers to be approachable and co-operative so that employees feel more comfortable and empowered to acquire and exchange knowledge. For instance, in a medium Irish high-tech manufacturing enterprise, the senior management attempts to foster a culture based on a “no such a thing as a stupid question” principle.

*Department managers seek to encourage open questions at all times by modelling a “no such thing as a stupid question” culture, so that people learn from each other’s experience and knowledge, as well as through training.*

*Medium low-tech manufacturing enterprise, Ireland*

These positive management attitudes should not be taken for granted. Some managers might adopt a more hierarchical and less inclusive approach, which might discourage employees from experimenting with new methods and exchanging information. This is the case, for example, in a large Italian high-tech manufacturing firm included in the sample.

*Considering the work environment, there seems to be a top-down orientation, due to the presence of the strong and visionary founder. Such top-down orientation does not seem to actively prompt horizontal exchanges and extremely welcoming practices.*

*Large high-tech manufacturing enterprise, Italy*

Second, enterprises can opt for the **institutionalisation** of some aspects of informal learning opportunities, by establishing clear responsibilities and rules on the roles, the frequency and the duration. For example, a large KIS enterprise in Ireland organises an annual internal careers fair to promote exchanges and secondments and establishes working groups on disruptive trends with a pre-defined scope and duration.

**Firm size** seems to heavily influence the decision to institutionalise some aspects of informal learning opportunities. In line with the previous section, medium-sized enterprises are less likely to adopt rules and responsibilities on the roles, the frequency and the duration of informal learning opportunities. In principle, this decision could be efficient. As remarked by a medium-sized KIS firm in Austria, institutionalisation requires additional resources. Yet, the benefits from these investments might be low in a situation where there is already plenty of knowledge exchange, as observed by the HR director of a medium-sized KIS enterprise in Estonia.

*Employees are working closely besides each other and managers, so no institutionalisation of informal learning opportunities is required in the enterprise.*

*Medium KIS enterprise, Estonia*

However, **some forms of institutionalisation** may help to **foster informal learning** both in medium and large enterprises. Some enterprises set time and money aside for informal learning opportunities. For example, a medium- low-tech manufacturing enterprise in Estonia offers an increase in salary and allocates a specific amount of money for more experienced employees mentoring junior staff, whereas a call centre in Austria allocates 50% of the time of a team to answer questions by other employees.

Yet, enterprises need to make sure that they have the **support of employees**, if they decide to institutionalise informal learning opportunities. Institutionalisation can meet substantial pushback from employees. A case in point is the introduction of structured job rotation systems. Some HR and employee representatives characterise them as a “win-win” outcome, which enables the enterprise to better change job roles and the employees to acquire knowledge that could be valuable in the job market. Others report negative feedback, related to the fear of losing their position or increased stress in the workplace. Due to such concerns, a few companies in the sample have suspended structured job rotation schemes or abandoned plans for their introduction.

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## Note

<sup>1</sup> The CVTS asks some questions about the involvement of formal education institutions, such as higher education or VET institutions, in the provision job-related training, and the use of certifications to assess the benefits of training. Such information does not allow to build a coherent picture of the proportion of training that is formal or certified, but is useful to explore how firms make decisions about training in Chapter 4. The question on the involvement of formal education providers does not allow to assess the overall incidence of formal training among enterprises, because formal education providers may also offer non-formal education opportunities. The question on certification could underestimate or overestimate the share of enterprises that rely on training leading to a nationally recognised qualification or certificate. On the one hand, enterprises might underreport the reliance on certified training, because the question only asks whether they rely on certification to assess the benefits of training, not for other reasons (e.g. regulatory pressures). On the other hand, enterprises might also report that they rely on certification in the case of internal examinations or practical tests that are not nationally recognised. For these reasons, the CVTS data on the involvement of formal education institutions and the use of certification to assess the benefits of training are discussed in Chapter 4.



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