

**INNOVATION AND LEARNING IN ENTERPRISES**

Cedefop workshop
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Thessaloniki

Cedefop study**ADULT LEARNING IN THE WORKPLACE:
SKILL DEVELOPMENT TO PROMOTE INNOVATION IN ENTERPRISES****Background information: Content and research design of the study**

This ongoing study explores how skill development can support innovation in enterprises. In particular, it identifies and reviews policy frameworks and programmes that foster innovation in enterprises, in which business development and skill development are closely linked. In relation to innovation and business growth, special attention is paid to the introduction of work organisation processes in enterprises that can best stimulate business performance and innovation, while enabling employees to develop their skills on-the-job. The general review of policy initiatives coupling innovation in enterprises and skill development of employees is completed by an in-depth analysis of 10 examples of good policies and programmes in different countries (case studies). The need and rationale for conducting this study as well as the policy context are outlined in detail in the background paper to the workshop.

The study encompasses:

1. Desk research on the contributions of skill development to innovation in enterprises:

A literature review (using research and policy documents) on the contributions of skill development to innovation in enterprises (including adopting technological developments, new production and working processes and changes in work organisation) is undertaken to set up the context of the analysis. The literature review also considers work organisation practices that contribute to innovation in enterprises, improved business performance and skill development of staff on-the-job.

2. Identification and analysis of policy initiatives and publicly-funded/tripartite programmes that foster innovation in enterprises by closely linking business and skill development:

The study provides an overview and analysis of trends related to policy initiatives and publicly-funded/tripartite programmes to businesses that foster innovation in enterprises, at national, regional and sectoral level, in which business development and skill development of employees are closely linked, covering EU 27 and Norway. Special attention is paid to initiatives that support innovation in SMEs.

3. In-depth analysis of 10 examples of good practice (case studies):

The review of policy initiatives coupling innovation in enterprises and skill development of employees is completed by an analysis of 10 examples of good policies and programmes in different countries (case studies). The pool of practices includes some examples of policy initiatives that support enterprises to transform their work organisation into one that promotes learning, innovation and increased business performance.

Research design:

Based on an extensive literature review, an appropriate methodology has been developed for identifying relevant policy initiatives and programmes, and for elaborating an analytical overview and conducting in-depth analyses. Core elements are:

a) Clustering of countries:

For the purposes of the study, a holistic approach has been taken, and the three core phenomena (learning-oriented work organisation, workplace learning, and innovation¹) have been analysed regarding their interrelations.

Findings of the European Working Conditions Survey (Eurofound, 2010), the 3rd continuing vocational training survey (CVTS3, Eurostat 2006) and the Innovation Union Scoreboard (IUS, InnoMetrics 2010) have been used to do a cluster analysis. The outcomes of this analysis suggest that there seem to be five clusters of innovation cultures in Europe, combining styles of work organisation with types of learning infrastructures. The five clusters show the following characteristics:

- The cluster called **‘advanced’** scores high in all three dimensions: Very learning-intensive forms of work organisation go along with high prevalence of workplace learning and high innovation performance. Country examples are Denmark and Germany.
- The cluster called **‘follower’** scores similar, with only moderate values for workplace learning and moderate to high scores for innovation. Country examples are Belgium and the Netherlands.
- The first of the **‘intermediate’** clusters – called Moderate 1: High learning, moderate innovation – combines high values for work organisation and medium values for workplace learning with moderate innovation performance. Country examples are Malta, Norway and Estonia.

¹ The design and understanding of this study is based on a work-integrated perspective of workplace learning . Workplace learning refers to learning during the process of working – the place of learning and working coincide so that the learning content as well as the learning tasks are identical with the working tasks and requirements. Thus, the employee has to deal with the conditions of the real working environment and learning. Learning typically proceeds by watching, imitating, helping and through simulating the observed procedures and therefore occurs on the one hand through the direct involvement in working tasks and working requirements, and on the other hand through a repetition of the given tasks as well as through explorative action. Learning-oriented work organisations foster workplace learning.

- The second of the ‘**intermediate**’ clusters – called Moderate 2: Low learning, moderate innovation – shows very similar innovation performance as compared to Moderate 1, but here combined with much lower scores for work organisation and workplace learning. Country examples are Italy and Spain.
- Finally, the cluster ‘**catching up**’ scores low on all variables. Country examples are Bulgaria and Romania.

In the study, these five clusters are used to examine the links between workplace learning and innovation in more depth, and to examine the policy frameworks and programmes that foster innovation in enterprises by linking business development and skill development. Two to three “indicator countries” per cluster are selected for in-depth analyses; it is assumed that in these countries, there are “*ceteris paribus*” conditions regarding policy frameworks. In these countries, case studies of programmes will be conducted.

The programme portfolio, however, is analysed for all 28 countries. This portfolio is described according to types of programmes as related to aspects of innovative ability addressed by the programme. These types are:

- **Type 1:** The programme or service is directly focussed on investment in human capital, e.g. (vocational) education and training.
- **Type 2a:** The programme or service might be dedicated to workplace organisation and design with – among other aspects – regard to learning potentials of the workplace.
- **Type 2b:** The programme or service is focussed on organisational innovation and business development, with KSC development also addressed in some way.
- **Type 3:** The programme or service is focussed on clusters / cluster building, bringing together industry, research, educational and other public institutions.
- **Type 4:** The programme or service is focussed on Technological Research, Development and Innovation (R&D&I), with KSC development also addressed in some way.
- **Type 5:** Other programmes outside the scope of this study, e.g. general investment in R&D infrastructure, access to finance.

b) CATI-Interviews with programme managers

For the purpose of the study, relevant institutions that are responsible for policy frameworks or programmes that foster innovation in enterprises by closely linking business and skill development have been identified in all 28 countries and asked to participate in CATI (Computer Assisted Telephone Interviews) interviews. The CATI comprises of three parts:

1. **Part I** of the interview covers basic descriptors of the respective programmes under investigation.
2. **Part II** of the interview seeks to assess expectations and results of the programmes as regards knowledge, skills and competence development. The analysis of effects on

organisational and individual learning follows a conceptual grid proposed by Alwert², distinguishing three dimensions of intellectual capital (human, structural, and relational capital) that influence the innovative capacity of enterprises. This concept of human, structural, and relational capital as components of intellectual capital has been used as a framework for the development of a tool for assessing gains in organisational competence (IndiGO - Indicators of Gains in Organisational Competence).³ For the purpose of this study, IndiGO has been adapted and used to generate items for the CATI-Interview.

3. **Part III** of the interview comprises an assessment of perceived learning effects on the individual. For this purpose, core dimensions of the FLMA (Fragebogen zu lernrelevanten Merkmalen in der Arbeit - Questionnaire on Workplace Characteristics relevant for Learning)⁴ (covering e.g. items in work autonomy) have been used.

c) Case-studies

Ten examples of good policies and programmes in different countries (case studies) are conducted. The case studies are used to gain further insights into the link between innovation and learning / changes in the work organisation that lead to learning. Beyond a programme level analysis, they also cover the project level and put the example in a country-specific context. Among the cases are the Swedish programme 'Management and Work Organisation Renewal', the 'Lean Business Offer' in Ireland and the Dutch programme 'Innovation Performance Contracts'.

² Alwert, K (2005): Wissensbilanzen für mittelständische Organisationen – Entwicklung und prototypische Anwendung einer geeigneten Implementierungsmethode. Produktionstechnisches Zentrum Berlin (PTZ).

³ Indicators of Gains in Organisational Competence.

⁴ Richter, F. & Wardanjan, B. (2000). Die Lernhaltigkeit der Arbeitsaufgabe. Entwicklung und Erprobung eines Fragebogens zu lernrelevanten Merkmalen der Arbeitsaufgabe (FLMA). Zeitschrift für Arbeitswissenschaft, 54, 175-183.