



Non-formal education dominates the circumstances of lifelong learning

POLICY BRIEF
SEPTEMBER 2015

Pavol Babos
Institute for Forecasting, Slovak Academy of Sciences
Slovakia

Martina Lubyova
University of Economics Bratislava
Slovakia

Ivana Studená
Institute for Forecasting of the Slovak
Academy of Sciences
Slovakia

Circumstances
of learning





IMPRESSUM

Copyright by LLLightinEurope Research Consortium

Coordinated by
Zeppelin University
Am Seemoserhorn 20
88045 Friedrichshafen
Germany

Authors:
Dr Pavol Babos
Dr Martina Lubyova
Dr Ivana Studená

Graphics, Design and Layout:
Maren Sykora

Multimedia and Website:
Urs Boesswetter, Spooo Design

Video Production:
Sascha Kuriyama

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 290683.





NON-FORMAL EDUCATION DOMINATES THE CIRCUMSTANCES OF LIFELONG LEARNING

About the authors

Pavol Babos

Dr Babos is a junior researcher at the Institute for Forecasting, Slovak Academy of Sciences and assistant professor at the Department of Political Science, Comenius University in Bratislava. Dr. Babos studied social policy analysis at K.U. Leuven and completed his PhD in political science at Comenius University in Bratislava. Before his academic career Dr. Babos had worked as journalist for several years.

In his past research, Dr. Babos has studied Varieties of Capitalism in Central Eastern Europe and non-standard work. Apart from labour market issues he also published several articles regarding voting behaviour and corruption. His current research interests are political accountability, non-standard jobs and labour market transitions. Dr. Babos teaches mostly methodology and economic courses at the Department of Political Science.

Martina Lubyova

Dr Martina Lubyova is Director of the Institute for Forecasting of the Slovak Academy of Sciences and Lecturer in Social Statistics at the Economics University in Bratislava. Ms. Lubyova holds PhD in Economics from the University of the State of New York and CERGE-EI in Prague, PhD in Statistics from the Economics University in Bratislava, Doctor of Law and M.Sc. in Biophysics from Comenius University in Bratislava. Prior to taking up her current position, she spent more than ten years at the service of the International Labour Organisation, where she worked as the Director of ILO Sub-regional Office for Eastern Europe and Central Asia in Moscow, Employment Specialist at the ILO Office in Moscow, and Employment Development Specialist at the ILO Multidisciplinary Team for South Asia in New Delhi.

Her research interests are focused mainly on labour and education economics, international migration, forecasting, social affairs and development. She has been member of OECD Expert group on Migration (SOPEMI) since 1995 and member of editorial boards of several journals focused on social affairs and development.

Ivana Studená

Dr Ivana Studená is a researcher at the Institute for Forecasting of the Slovak Academy of Sciences. Previously, she worked as a senior policy analyst for the OECD LEED Trento Centre for Local Development based in Italy on design of assessment tools for local development. She has also acquired business experience working in private sector on business development in Prague and Bratislava. Ivana holds a Ph.D. in Economics from the University of the State of New York and CERGE-EI in Prague and a M.Sc. in Computer science from Faculty of Electro-engineering at Slovak Technical University.

Her current research interests include labour and education economics, with special focus on individual and firm level adjustment processes and entrepreneurship development.

Please cite this publication as follows: Babos. P., Lubyova. M., & Studená. I. (2015). Non-formal education dominates the circumstances of lifelong learning. Policy Brief, proceedings of LLLight'in'Europe research project. Retrievable at: www.lllightineurope.com/publications



In the turmoil of economic challenges in EU, lifelong learning is understood as the key response to skills upgrade demands on adult workforce. We are as individuals exposed to complex environments, increased uncertainties and competition from globally liberalized labour flows. Our life, both in terms of work as well personal environment is becoming increasingly complex. New skills are required to deal with challenges of work and daily life situations. In what circumstances are such skills best acquired?

Introduction

New global economic configuration require new structure of individual skills

European economies have undergone major structural changes putting into spotlight individual skills of its labour force. It has become commonly understood that economies need to respond to new global economic environment and European participation in global economic trends cannot be achieved successfully without workforce with upgraded and suitable skills and competencies (Fayolle 2011). Moving towards understanding of what are the ways of achieving improved skills, the role and new scope of education forms are intensively discussed as skills mismatches persist (Flisi et al 2014) accompanied by worrying incidence of youth unemployment and aggravating negative demographic changes.

Key role of lifelong learning in responding to global, and European problem of skills mismatch

It is a generally understood fact that the desired composition of skills has been dramatically changing in past decades. New types of jobs prevailing in European markets are requiring new sets of skills. The demanded skills structure has been shifting from prevalingly required routine and manual tasks towards current emphasis on skills for coping with complex non-routine tasks and collaborative tasks (Levy, Murname 2003). Companies and individuals need to search for best ways how to respond quickly to development of skills all through their life span.

In this brief we outline the pattern of lifelong learning recent practice and connecting circumstances to adult skills enhancement.

The importance of adults in European labour force and the role they shall be assuming in responding to new challenges in life and work has created an important momentum for specific policies and tools targeting adult learners.



The connections between forms of education and skills are crucial for policy recommendations on how to support effectively adult skills development.

Key Observations

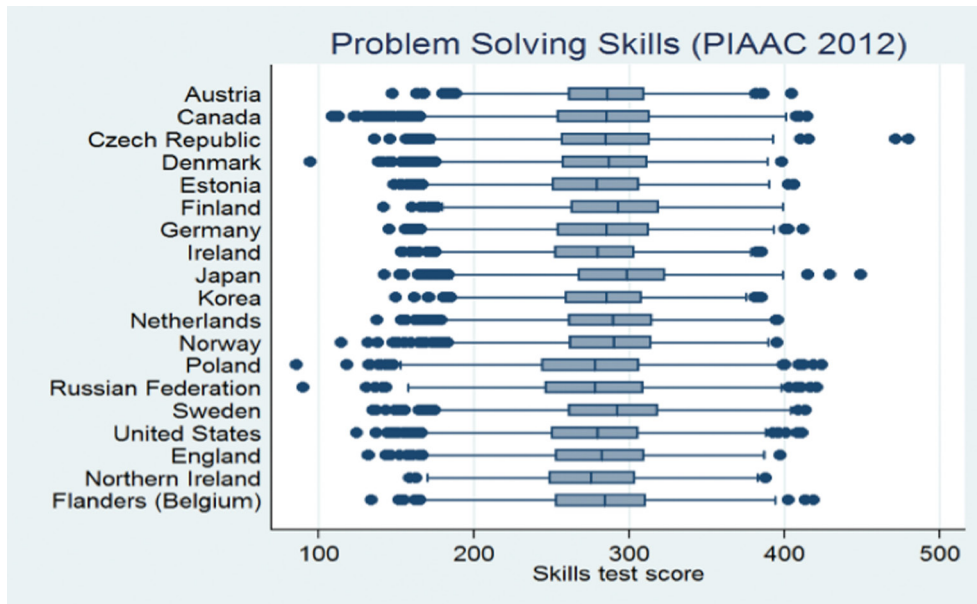
New individual competencies for life and work

Competencies required by new economic and environmental configuration involve mix of cognitive and non-cognitive skills such as critical thinking, problem solving, collaboration, effective communication, motivation, (Pellegrino, Hiltons eds 2012). Those competencies put emphasis on transversal skills because in need of individual capacity to deal with a variety of problems and tasks in diverse and still changing setups and environments. Problem solving skills are in the spectrum of transversal skills most consensually viewed to play crucial role in building individual competencies for life and work.

Problem solving is a key competence in transversal skills

What are the patterns of transversal skills across developed countries including EU? We know from adult skill assessment carried out by OECD (PIAAC) that there are differences in average country score among individually compared countries. Countries with strong overall participation in lifelong learning are also performing well in CPS scores. We have investigated the transversal skills related to dealing with problems in technologically rich environment looking for primary evidence on difference across countries. Analysing the recent round of PIAAC however we cannot confirm difference between the participating countries when comparing them as a set of countries. The distribution of the problem solving test score is, maybe counter the intuition, rather similar. The average score reaches around 280 points and the majority of individuals are scattered around this average in rather surprisingly similar pattern in different countries (Figure 2).

Figure 2: Distribution of Problem solving skills of individuals in EU countries, source: PIAAC microdata, own computations



Which forms
of education
are prevailing?

The differences within countries are large and this variation is again shared across countries. So while comparing selected countries we find differences, there are strong similarities in how the score is distributed within countries when comparing all countries. To move towards understanding of what are the underlying processes that led to observed differences of skills, we analyse how adults have been engaging in different types of education as captured by large European surveys on adult practice in lifelong learning. Adult learning is happening in circumstances shaped by spectrum of individual, social and economic factors. The work environment is one of the crucial conditions in which knowledge and skills are transformed and revealed in competencies. In this process decision-making at employer level is crucial, as employers continually assess competencies of labour as crucial factor of economic performance of underlying economic activity whether it is production of goods, services or even engagement in non-profit activities. Also individual decisions with regards to participation in adult learning closely are linked to results of interaction with workplace requirements.

Non-formal learning is prevailing learning choice connected with skills upgrade at workplace

Therefore information on forms of adult education and trainings carry information on how entrepreneurial environment and individuals observe and assesse education forms mostly effective to skills upgrade and for enhanced competencies for work.

In this context available information on lifelong learning activities reveals following key observations.

1. The lifelong learning practice reflects dominance of non-formal learning activities. Non-formal education (Figure 1)

Figure 1: Types of lifelong learning activities

According to Classification of Learning Activities (CLA) we may structure Learning activities (LA) also along the dimension defined by the intention of an individual learner.

Intentional learning channels:

FED - Formal education and training Intentional learning institutionalized in formal education structures

NFE - Non-formal education and training Intentional learning institutionalized outside of formal educational structures

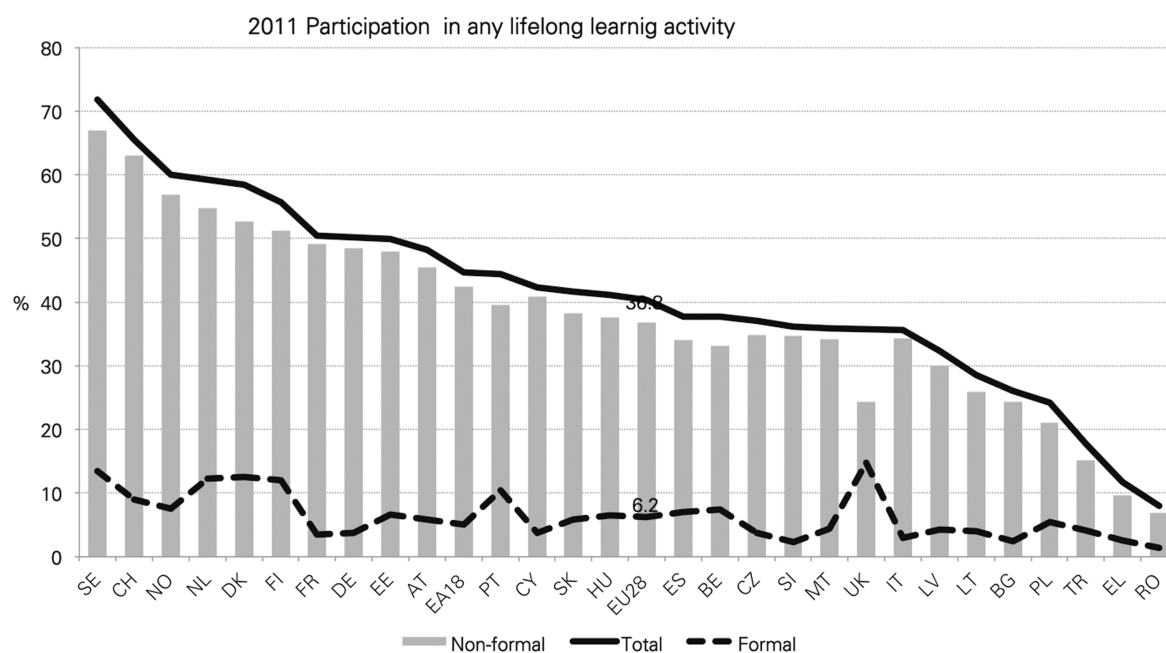
INF - Informal learning

INF is also viewed in CLA as mostly intentional but mainly not institutionalized

Non-intentional learning is rather understood as random learning and happens at different instances and environments of our lives.

represents organized activities that are not provided in formal education structures. In EU on average at least one in 3 European adults undertook (Figure 3)

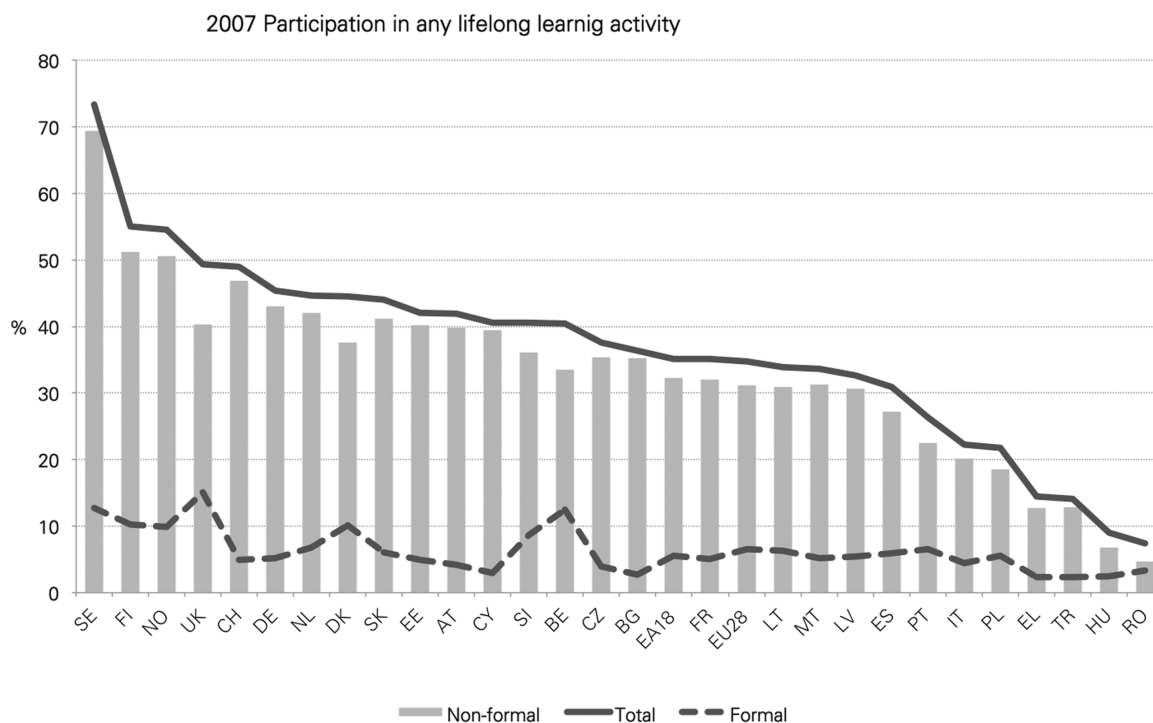
Figure 3: Structure of lifelong learning activities in 2011, any education and training activity in past 12 months, source: AES 2011 online tables, own computations



Skills upgrades are driven by employers

some non-formal learning in 2011 while only about 1 from 15 adults engaged in formal learning activity. Country overall learning participation ranged from more than 60% in leading Sweden to less than 10 % in Romania. Formal learning activity was mostly present in UK when 1 of 6 adults participated in formal training but the share of formal education formal varies across countries and it is not linked with the total lifelong learning. So e.g. only less then 4 from 100 adults undertook some formal learning in Germany while every second adult participated in non-formal learning. Overall pattern in terms of low share of formal on non-formal learning was similar also in 2007 with low share of formal learning activities. (Figure 4)

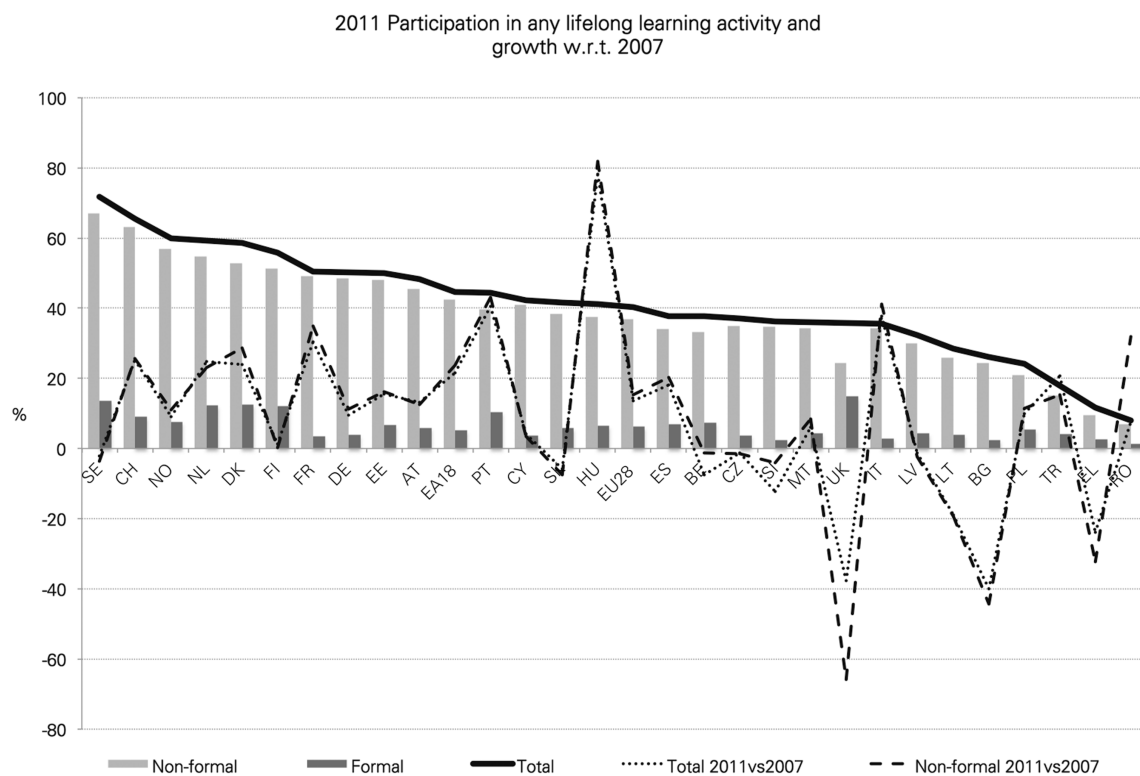
Figure 4: Structure of employment and training activity in 2007, any education and training activity in past 12 months, sources Eurostat AES online tables, own computations



Informal learning on the job via guidance on the job may be the connecting circumstance for skills development when followed by structured trainings

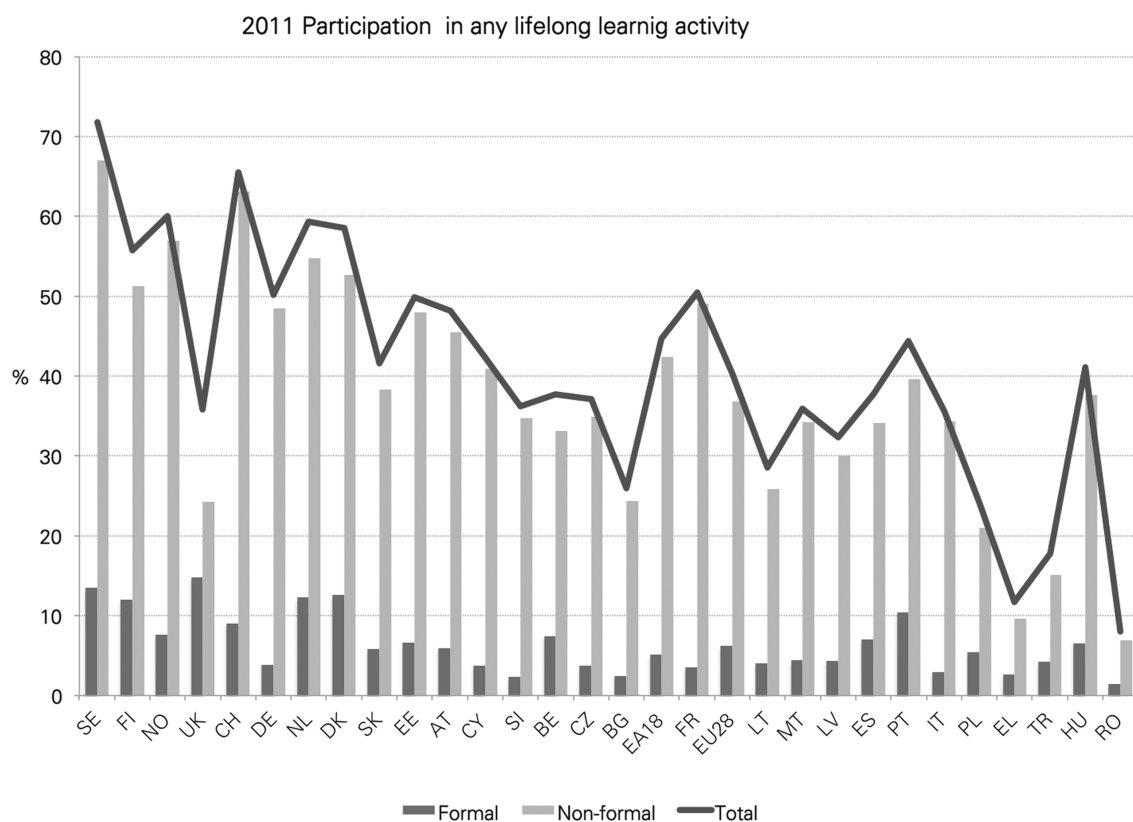
Comparing the two years there have been temporal developments, when overall the participation has at least partially increased in most countries, with some countries that have accounted for sharper increases or falls (Figure 5)

Figure 5: 2011 Participation in any lifelong learning activity by type and temporal development with respect to 2007 of total and non-formal learning activities, source: Eurostat AES online tables, own computations



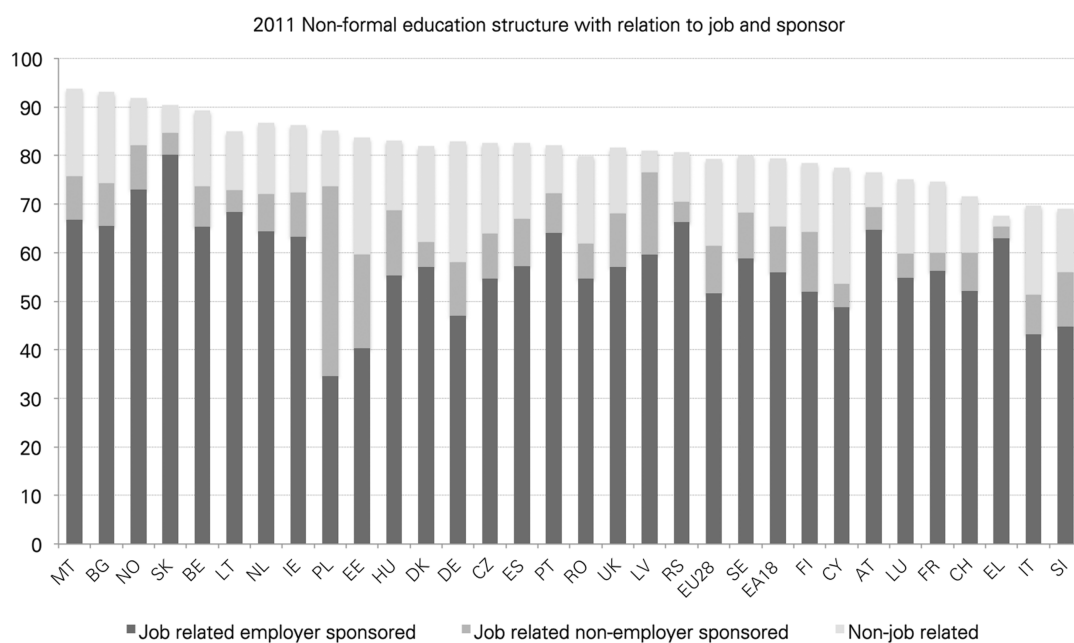
but the share on formal lifelong learning remained low. No clear pattern is observable in connection between the amount of formal activities and overall lifelong learning practice and developments over time, i.e. while overall the participation in lifelong learning has increased in 2011, the individual country developments vary (Figure 6).

Figure 6 2011 participation in any lifelong learning activities, countries ranked in descending order by 2007 participation rates, source: Eurostat AES online tables, own computation



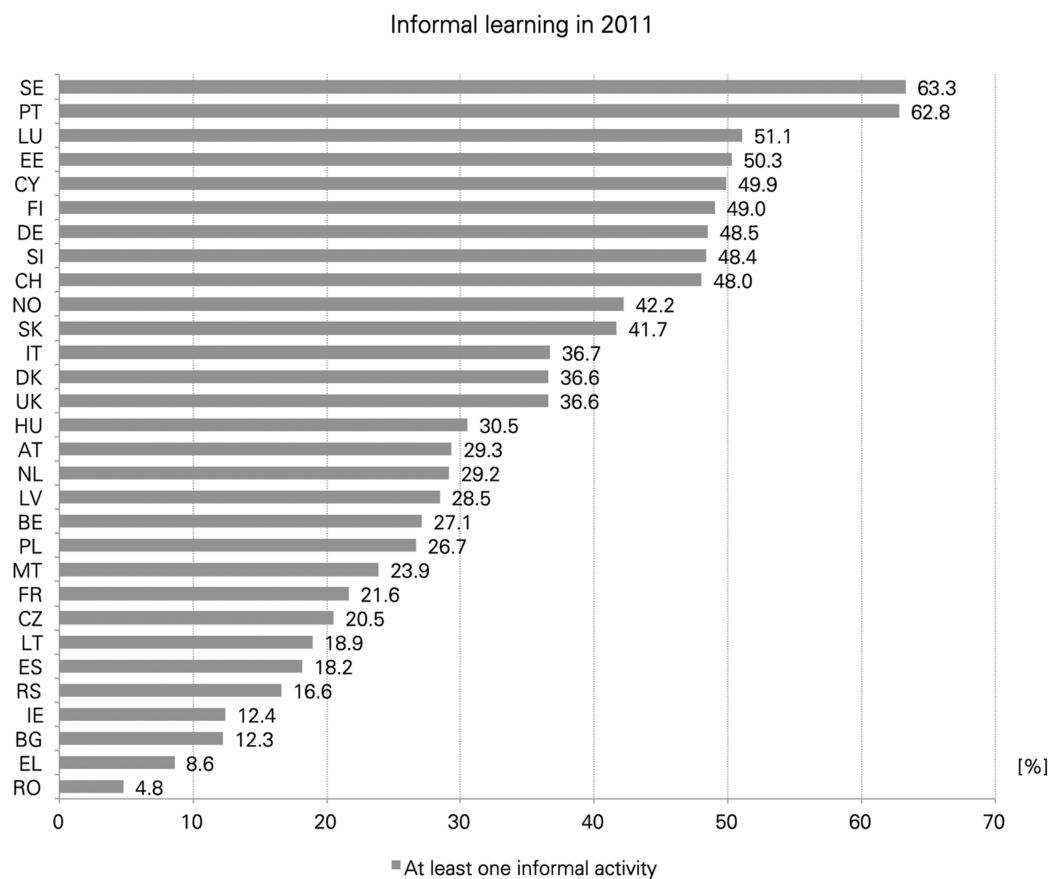
2. The lifelong learning activities are mostly job related and prevalingly sponsored by employers. At EU average, 6 out of ten adults undertakes learning that is related to the job and in most cases the education and training is paid by the employer (Figure 7).

Figure 7: Structure of non formal education 2011, source Eurostat AES online tables



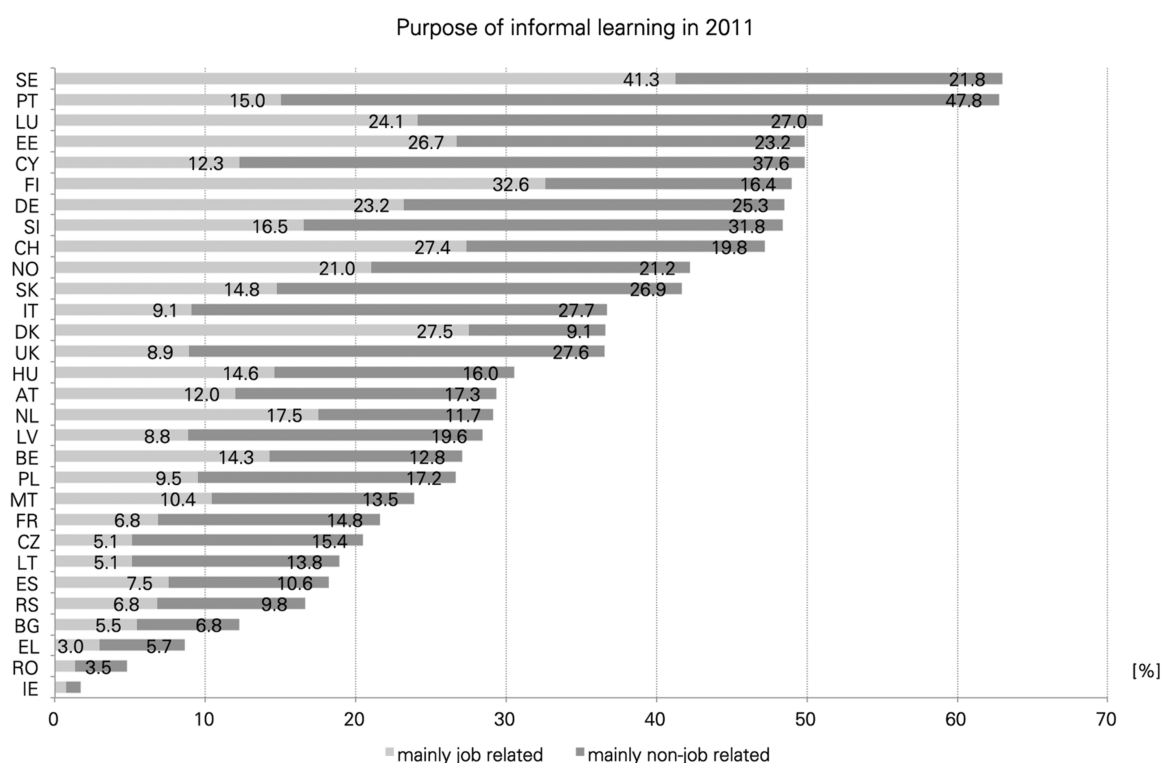
3. Informal learning is important source of learning (Figure 8)

Figure 8: At least one informal learning activity in past 12 months, source: AES 2011 microdata



and it is often connected with job (Figure 9). Also here we observe variation across countries and in this case different labour market performances play role as the share of unemployed respondents corresponds to national aggregate labour market structure. So to some extent this reflects on the structure of informal learning with respect to job relation.

Figure 9: Purpose of the most recent informal learning activity in 2011, source AES microdata

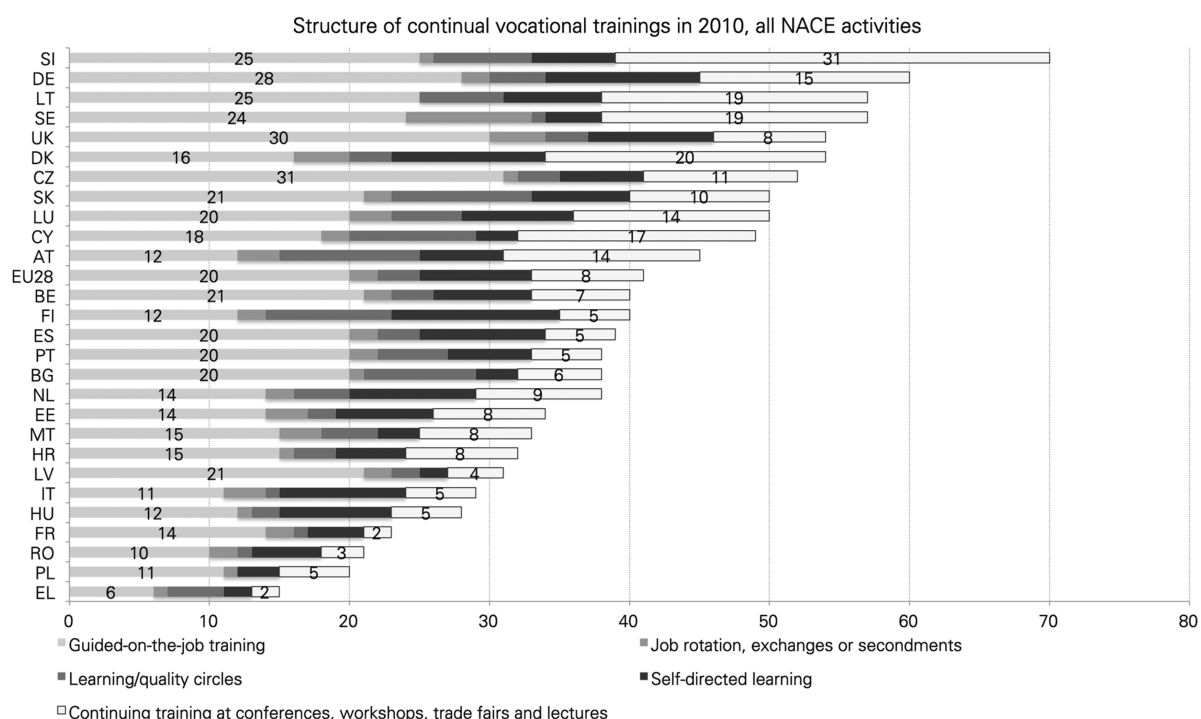


Exposure to solving problems on the job might be a crucial circumstance for enhancement of CPS skills

The information from individuals living in households in 2011 includes also not working or non-active individuals but the amount of learning related to job is systematically high. In countries with strong lifelong learning practice individuals learn more also informally with relation to their jobs.

4. Vocational training is prevailingly composed from two main activities, i) guidance on the job and ii) organised workshops and lectures (Figure 10).

Figure 10: Structure of continuous vocational training, source Eurostat CVTS online tables, own computations



Interesting is confrontation of this result with information collected from information from AES. As guidance on the job is typically informal type of activity, we may suppose that share of informal activities related to job reported in AES are guidance on the job. This is very loose comparison of different data sources but at aggregate national level there are interesting connections. Guidance on the job represents elementary circumstance for skills upgrade also in countries with overall strong lifelong learning practice but in these the training is typically complemented by organised but non-formal education or training events.

The variation in patterns of lifelong learning activities have important implications for policy recommendations. They put emphasis on tailor made country solutions in communication with entrepreneurial sector. Job experience remains crucial initial condition for acquiring competencies for work.

Individual outcomes of lifelong learning activities are linked to workplace specific circumstances

After stock taking exercise of learning circumstances based on AES and transversal skills pattern based on PIAAC, we find that individual data collected from individuals at companies are better fit for investigating links between specific skills, such as problem solving skills, and individual and work environment circumstances. Lubyova, Babos, Neubert, Greif 2014 explore the problem solving skills of employees in LLLight companies. They find that regular exposure of an individual to problem solving at the job is linked with his or her significantly higher CPS score. There are two key suggestions from this evidence. One is that CPS might be enhanced by the character of daily tasks, and regular solving of real problems constitutes a key circumstance for enhancement of individual CPS skills.

As at this stage we cannot confirm the causality in this relationship. It may also be the case that individuals with higher CPS skills are using these skills at their jobs to solve problems more frequently to their colleagues with lower CPS score. This would also imply that individual CPS skills are well recognized at the workplace and individual is matched accordingly to tasks where high CPS is required to deal with unexpected or non-routine problems. It is also likely that we are observing the combination of both and further longitudinal observations on company level are needed in the future to provide further evidence on this crucial connection.

Second key finding of Lubyova et al 2015 is that higher CPS score is connected with more satisfaction with job and income. These results are to be understood as important hints on company level processes that need to be further explored with more robust data, ideally containing longitudinal observations.

Summary

Following up on feasible approaches to analyse linkages between learning and skills development at company level, we find relevant the qualitative work with LLLight companies.

Detailed information has been collected via in-depth interviews with management and employees in addition to CPS scores of employees and background information on company activities. The results have confirmed what is suggested by analysis of large education and skills surveys – the linkage between education and skills may be specific to how lifelong learning is organised, implemented, and supported and valued at company level. For illustration in our case study on a small Slovak SME in Melo et al. (2015) we found a system of non-formal training was in place focused on combination of different forms of learning with strong focus and continuous assessment of learning outcomes in terms of skills enhancement. The learning process in this company is highly interactive and dynamic, what has been successful in one year is not automatically assumed to be best option for the future, new topics and approaches are continuously monitored and acted on. In this process the flexibility of a small company is leveraged fully to the benefits of learning linked with skills enhancement. This company might not differ significantly from other SMEs in company statistics on lifelong learning (e.g. in terms of hours spent on average by employees in non-formal learning), while the learning outcomes and contributions to skills upgrade might differ considerably.

There is a great variation among European countries in relation to the informal and non-formal learning engagement and how much time people invest in lifelong learning. In some countries almost three quarters of adult population had not done a single learning activity.

We confirm that overwhelming majority of people who had undertaken any form of training acknowledges its positive impact on their efficiency and job security.

Non-formal learning forms are mostly sought out linked in learning for skills upgrades. This practice dominant also in countries leading in overall adult learning and organised but not formal education events are important learning form.



Informal learning by guidance on the job is crucial starting element in building adults competencies.

Overall, we find the links between skills and learning are best revealed and addressed within the workplace experience. Complex problem solving skills are highly required and their measurement tools are likely to become an attractive assessment tool at individual and company level.

Recommendations for Policy-Makers

The variation of forms and related circumstances for lifelong learning across countries is large. Lifelong learning happens most in non-formal circumstances, though organised education events are relevant. The workplace experience is not surprisingly crucial element and guidance on the job remains to be building element of adult skills development.

In view of the heterogeneity of country processes it is vital to abstract from uniform and specific adult education policy measures that could fail in different national and organisational setups.

Policy measures for lifelong learning support available to companies often do not allow for company tailor made solutions, which prove to be particularly effective at reaching individual employees. Our in-depth analysis revealed need of companies and their managements for autonomy in relation to decisions about how to support and implement company measures supporting lifelong learning leading to skills upgrade.

Therefore measures supporting lifelong learning at companies need to allow for their autonomy in design and implementation of solutions best fitting the company specific conditions. Tax incentives for lifelong learning support might be suitable. Avoiding burdensome administrative requirements in applying for support measures is critically important for population of European SMEs.

Recommendations for Policy-Makers

The evidence presented in this brief refers to investigation of information contained in LLLight original data collected at selected European companies, OECD micro data on individual adult skills and competencies 2012 (PIAAC), Eurostat micro data on adult education and training 2011 and 2007 (Adult Education Survey, AES) and Eurostat aggregated database on AES and on vocational training (Continuing vocational training survey, CVTS).

LLLight project has worked in close contact with about 50 European companies to collect information on individual problem solving skills of their employees. The pioneering fieldwork has produced original data but sensitivity of measuring CPS of individuals at workplace has proved to constitute a hardship in getting companies and employees on board for actual testing. As a result we have obtained original data set but not yet representative. The results of empirical analyses are to be understood as hints to be further investigate with extensions to current data set with particular interest on adding longitudinal observations.

Literature

Damesin R., Fleury N., Fayolle J., Malaquin M. and Rode N. (2014) Challenges, actors and practices of non-formal and informal learning and its validation in Europe, Brussels, ETUI.

Fayolle J., 2011, New skills for new jobs: Scope for trade union intervention and sectoral dialogue, ETUI Policy Brief, No. 1/2011.

Flisi S., Goglio V., Meroni E., Rodrigues M. and Vera-Toscano E. 2014, Occupational mismatch in Europe: Understanding overeducation and overskilling for policy making, Science and Policy Report by the Joint Research Centre, Brussels, European Commission.

Levy, Murname 2003, „The Skill Content of Recent Technological Change: An Empirical Exploration.
Quarterly Journal of Economics, 118(4), November 2003, 1279-1334.

Melo. S., P.M.Tota, P. Cort, I. Studená, A. Larsson, 2015, “Case Studies Final Report: 14 Lifelong Learning Policy Trails in Europe”, Project: LLLIGHT’in’Europe: Lifelong Learning, Innovation, Growth and Human Capital Tracks in Europe, Project No: FP7-SSH-2011-2, Final report

Lubyova, M., Babos, P., Neubert, J., and Greiff, S. 2015 “Enhancing Complex Problem Solving Skills of Employees in the Lifelong Learning Context: Evidence Based on Microdata”, Submitted to Journal of Economic Psychology.

OECD 2012: Survey of Adult Skills. Microdata available at: <http://www.oecd.org/site/piaac/publicdataandanalysis.htm>; accessed on 29 January 2015

J.W. Pellegrino, M.L. Hiltons eds. 2012, “Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st century”

Project Identity

LLLight'in'Europe is an FP7 research project supported by the European Union, which has investigated the relevance and impact of lifelong learning and 21st century skills on innovation, productivity and employability. Against the background of increasingly complex tasks and jobs, understanding which skills impact individuals and organizations, and how such skills can be supported, has important policy implications. LLLight'in'Europe pioneered the use of an instrument to test complex problem solving skills of adults in their work environment. This allowed for the first time insights into the development of professional and learning paths of employed individuals and entrepreneurs and the role that problem solving skills play. Additionally, LLLight'in'Europe draws on a series of databases on adult competences from across the world to conduct rich analyses of skills and their impact.

These analyses were conducted in concert with different disciplines. Economists have been analyzing the impact of cognitive skills on wages and growth; sociologists have been investigating how public policies can support the development of such skills and lifelong learning; innovation researchers have been tracking the relationships between problem solving skills, lifelong learning and entrepreneurship at the organizational level;. educational scientists have investigated how successful enterprises support their workforce's competences; cognitive psychologists have researched on the development and implications of cognitive skills relevant for modern occupations and tasks; and an analysis from the perspective of business ethics has clarified the role and scope of employers' responsibility in fostering skills acquisition in their workforce. The team has carried out its research and analyses on the value of skills and lifelong learning in EU countries, USA, China, Latin America and Africa.

The result is a multi-disciplinary analysis of the process of adult learning and problem solving in its different nuances, and of the levers which can support the development of these skills for both those who are already in jobs, and for those who are (re)entering the labor market, as well as the development of effective HR strategies and public policy schemes to support them.

Coordinator	Zeppelin University
Project Director	Peer Ederer
EU Project Officer	Monica Menapace
EU Contribution	€ 2,695,000
EU Project #	290683
Project Duration	January 2012 – September 2015

Supervisory Board

Xavier Prats Monné

Director-General, Directorate-General for Education and Culture, European Commission

Andreas Schleicher

Director for Education and Skills, and Special Advisor on Education Policy to the Secretary-General at OECD

Iain Murray

Senior Policy Officer responsible for Policy on Learning and Skills, Educational Policy, and Regional Government and Devolution,
Trades Union Congress (TUC), United Kingdom

Oskar Heer

Director Labour Relations, Daimler AG Stuttgart

Roger van Hoesel

Chairman of the Supervisory Board at Startlife and Managing Director at Food Valley

zeppelin universität

zwischen
Wirtschaft Kultur Politik

Zeppelin University
Germany
Ljubica Nedelkoska



The University of
Nottingham

UNITED KINGDOM • CHINA • MALAYSIA

University of Nottingham
United Kingdom
John Holford



University of
Economics Bratislava
Slovakia
Eva Sodomova



AARHUS
UNIVERSITY
DEPARTMENT OF EDUCATION

Department of Education
(DPU), Aarhus University
Denmark
Ulrik Brandt



UNIVERSITÄT
LUXEMBOURG

University of Luxembourg
Luxembourg
Samuel Greiff



中央财经大学

中国人力资本与劳动经济研究中心
China Center for Human Capital and Labor Market Research

China Center for Human
Capital and Labour
Market Research China
Haizheng Li



WAGENINGEN UNIVERSITY
WAGENINGENUR

Wageningen University
Netherlands
Thomas Lans



ifo Institute
Germany
Simon Wiederhold

Innovation & Growth

Innovation & Growth
Academy
Netherlands
Silvia Castellazzi



Leuphana University Lüneburg
Germany
Alexander Patt



Institute of Forecasting of the
Slovak Academy of Sciences
Slovakia
Martina Lubyova



UNIVERSITÄT
HEIDELBERG
ZUKUNFT
SEIT 1386

Ruprecht-Karls-University
Heidelberg
Germany
Consortium partner in 2012



This policy brief is part of the publication suite of the FP7 Project LLLight'in'Europe. The publication suite consists of 21 policy briefs, 6 thematic reports and 1 synthesis report. The 21 policy briefs discuss findings and policy implications proceeding from the project's research; they are organized along three level of analyses (persons; enterprise; country) and seven topics.

01	Resources of society for learning
02	Institutions of learning
03	Circumstances of learning
04	Role of transversal skills
05	Role of job-specific skills
06	Productivity of skills
07	Outcomes of skills

This policy brief discusses findings related to **Circumstances of learning** at the analysis level **persons**. For further publications and multimedia material related to the project, please visit www.lllightineurope.com