

LLLight'in'Europe



LifeLong | Learning | Innovation | Growth & Human Capital | Tracks in Europe

Final Research Plenary 2015

# LLLight'in'Europe: Lifelong Learning, Innovation, Growth and Human Capital Tracks in Europe

## Final Results Conference

Residence Palace | International Press Center

Brussels - September 22, 2015

FINAL PROGRAM



## The Project

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LLLight'in'Europe investigates the relevance and impact of complex problem solving skills and lifelong learning on innovation, productivity and employability. Against the background of increasingly complex tasks and jobs, understanding how complex problem solving skills impact individuals and organizations, and how such skills can be supported, has important policy implications. LLLight'in'Europe is based on a unique instrument to test complex problem solving skills, thus allowing for the first time evidence-based insights into the development of professional and learning paths of employed individuals and entrepreneurs and into the role that cognitive skills play.

The analyses of these skills are enhanced through the contribution of 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 of lifelong learning in general; innovation researchers have been tracking the relationships between problem solving skills, lifelong learning and innovation at organizational level in the highly-dynamic industry of agribusiness.

The result is a multi-disciplinary analysis of the process of learning and problem solving in its different nuances and of the levers which can support the development of these elements for both those who are already in jobs, and for those who are (re)entering the labor market.

## The Key Outcomes

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During the conference researchers from the project will illustrate and discuss with selected relevant stakeholders the main findings from the research efforts on lifelong learning, innovation and human capital:

- LLLight established how the skill of Complex Problem Solving (CPS) is related to innovativeness and entrepreneurship;
- LLLight established how CPS can be measured in a practical and efficient way;
- LLLight piloted training methods for developing CPS skills, also for adults and late-career professionals;
- LLLight showed that the wage return to skills is on average 17% in Europe for every level of proficiency achieved;
- LLLight analyzed the returns to skills across Europe and showed that they are almost twice as large in Germany and Ireland as in Sweden and the Czech Republic, for example;
- LLLight created a ranking of skills performance for NUTS I and II regions in Europe;
- LLLight demonstrated how skills performance can be fostered through strategic HR in companies;
- LLLight portrays the success factors for effective policy formation for lifelong learning public action.

## Contacts and sign up

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Sign up: [www.lllightineurope.com/conference](http://www.lllightineurope.com/conference)

September 22, 2015 (Tuesday)

- 08:30 – 09:00 Attendees arrival, sign in
- 09:00 – 09:20 **Key note by Philippe Keraudren, PhD**  
DG Research, Deputy Head of Unit, Unit B6 Reflective Societies
- 09:20 – 09:40 **Key note by Mr. Joao Santos**  
DG Employment, Acting Head of Unit, Unit C5 Vocational Training and Adult Education
- 09:40 – 10:00 **Key note by Mr. Michael Schleupen**  
CEO of Audicon GmbH
- 10:00 – 11:00 **Presentation of key LLLight'in'Europe results**  
Presentation by Peer Ederer, LLLight researchers  
Follows Q&A
- 11:00 – 11:30 *Coffee Break*
- 11:30 – 12:30 **Monitoring European adult learning systems  
for evidence-informed policy**  
Presentation by Mantas Sekmokas, DG Empl Unit C5  
Follows panel with LLLight researchers and Q&A
- 12:30 – 13:30 *Lunch Break*
- 13:30 – 14:30 **Five parallel thematic workshops**  
WS1: CPS Skills and Innovation, led by Luxembourg University  
WS2: Entrepreneurship and Skills, led by Wageningen University  
WS3: Skills Strategies and Policies, led by Aarhus University / IFSAS Institute of Bratislava  
WS4: Economics of Skills, led by Zeppelin University / Ifo Institute  
WS5: Policy Trails and Adult Education, led by Nottingham University
- 14:30 – 16:00 **Four parallel country-specific workshops**
- 16:00 – 16:30 Conclusions



## 09:00 – 10:00 Key notes

Philippe Keraudren, PhD, DG Research; Mr. Joao Santos, DG Employment, Social Affairs and Inclusion; and Mr. Michael Schleupen, CEO of Audicon GmbH, will introduce the participants to the topics of the conference with three key notes. They will share their insights on skills, adult education and innovation from a policy resp. private company perspective.

*Room: Maelbeek*

## 10:00 – 11:00 Key LLLight'in'Europe results

During this session, Peer Ederer – director of the project – presents to the audience the key outcomes of the research and their relevance for policy making. Colleagues Thomas Lans, Ulrik Brandi and John Holford provide details from the respective research perspectives. A session of Q&A completes the presentation and offers time for open discussion with the guests.

*Room: Maelbeek*

## 11:30 – 12:30 Monitoring European adult learning systems for evidence-informed policy

On the occasion of the conclusion of the Study on the Analysis of Adult learning policies and their effectiveness in Europe, commissioned by DG Empl, dedicated to supporting and improving the effectiveness of adult education policy interventions, during this session key findings of the report are presented and their policy implications are discussed.

Besides providing a systematic literature review on the outcomes of adult learning and policy interventions to promote adult learning, the key aim of the study was to design an analytical framework for adult learning policy monitoring. This framework should form a basis for an on-line analysis tool for policy makers, to be used for evidence-based cross country analysis, as a knowledge base for adult education policy development and evaluation and to inspire the design of national or regional policy monitoring systems.

The results of the study and a reflection on the policy implications of study findings are presented by Mr. Mantas Sekmokas (DG Empl). A panel with LLLight'in'Europe researchers Samuel Greiff and Haizheng Li follows to provide research insights on the topic of measuring and monitoring adult skills; a Q&A session with the plenum concludes. The session is moderated by Silvia Castellazzi.

*Room: Maelbeek*

## 13:30 – 14:30 Five parallel thematic Workshops

During these five parallel sessions our researchers present findings from their discipline and research and discuss with the audience and selected discussants the policy implications of the research outcomes.

### Workshop 1: CPS Skills and Innovation

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#### COMPLEX PROBLEM SOLVING - DEVELOPMENT, ASSESSMENT AND RESULTS

**GOAL.** We present and discuss research results on the basis of a newly developed assessment instrument that enabled us to directly and easily assess complex problem solving skills (CPS), which is a good recorder of LLL activities by individuals, and a foundational skill for the acquisition of non-routine high value job specific skills.

**TOPICS.** With this instrument at hand we examined:

1. How is CPS distributed in different occupational samples?
2. Does CPS relate to measures of occupational success?

#### RESEARCH RESULTS.

1. Knowledge workers in technology-rich environments were the top-performers in these CPS tests. This could reflect the advantage of technology-rich jobs whereby employees have the opportunity to train their CPS skills on a daily basis.
2. CPS was found to incrementally explain and predict employees job level and salary beyond the influence of intelligence. This suggests that CPS is an independent and relevant skill in 21<sup>st</sup> century jobs.

**DISCUSSION.** Can individuals, enterprise and countries increase their human capital by the facilitation of CPS skills and how?

The workshop is facilitated by Prof. Dr. Samuel Greiff and research assistants André Kretzschmar and Jakob Mainert, all University of Luxembourg.

*Room: Club*



## Workshop 2: Entrepreneurship and Skills

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*Discussant:*

**Ms. Maria Podlasek-Zieger**, European Commission  
Directorate General for Education and Culture

**GOAL.** Based on a performance assessment, we explored specific entrepreneurial competencies (i.e. opportunity identification and evaluation) on an individual, group and organizational level within higher education and companies from the agricultural, food, and fiber sector. Opportunity identification and evaluation are recognized as crucial entrepreneurial competencies in the initial steps of the entrepreneurial process, and are considered of increasing importance for workers of the 21<sup>st</sup> century.

**TOPICS.** During the workshop, we will elaborate on the following topics:

1. Generic skills (i.e. CPS) versus context specific competencies (i.e. opportunity identification competence)
2. Workplace learning, HR and employee driven entrepreneurship
3. Entrepreneurship education: stimulating 21<sup>st</sup> century skills

### **RESEARCH RESULTS.**

1. The first empirical results suggest that those who excel in identifying opportunities seem to share core characteristics with high-level complex problem solvers.
2. Organizational learning and job design have a significant impact on employee-driven entrepreneurship. High levels of autonomy, job complexity, and interaction with colleagues are examples of job characteristics that predict employees' entrepreneurship
3. The performance assessment, as developed in one of the LLLight studies, showed that opportunity identification and evaluation are separate abilities, which has consequences for individual and team learning activities in entrepreneurship education

**DISCUSSION.** What is the role of specific entrepreneurial competencies for students and workers, and how can those competencies be fostered and developed on the individual, team and organizational level?

The workshop is facilitated by Prof. Dr. Thomas Lans, Prof. Dr. Harm Biemans and research assistant Yvette Baggen, all Wageningen University.

*Room: Magritte*

## Workshop 3: Skills Strategies and Policies

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### LIFELONG LEARNING STRATEGIES – WE HOLD THE KEY TO SUCCESS

Description: Value creation is unique to every enterprise, yet learning capacity is ubiquitous. In this workshop we will explore key findings from our enterprise-level research, highlighting the keys to success we can grasp in our strengthening of value creation for enterprises.

#### TOPICS:

- Enterprise key: the impact of skill development, work design and learning systems and incentives
- Policy key: the impact of lifelong learning policy across contexts
- Value creation key: enhancing enterprise learning capacity

**DISCUSSION:** How lifelong learning strategies at different levels - micro, meso and macro - impact the learning capacity and the success of European enterprises?

This workshop will be facilitated by Ulrik Brandi, Associate Professor of Organisational Learning in the Lifelong Learning Programme at Aarhus University, Rosa Lisa Iannone, Research Fellow at Aarhus University and Ivana Studena, PhD from the Slovak Academy of Sciences.

*Room: Passage*



## Workshop 4: The Economics of Skills

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*Discussant:*

**Marco Paccagnella, PhD – OECD,**  
Directorate for Education and Skills

### THE IMPORTANCE OF COGNITIVE SKILLS AND LEARNING

**DESCRIPTION.** Why do certain groups of people earn so much more? Traditional human capital measures tell only a part of the story. Using the most recent evidence, we will look at how much skills earn across the world and how earnings are affected by skill mismatch. If skills are so important, what determines them? In the second half of the workshop we will talk about job complexity and its effect on skill formation induced by the choice of jobs and locations.

**TOPICS.** Human capital analysis starts with the assumption that human capital is in large part acquired through activities such as schooling, training, or learning on the job. While the number of acquired years of schooling is certainly related to human capital and has been shown to be economically relevant, it nevertheless might be a poor approximation of effective human capital. For example, the quality of schooling might change over time and might vary across countries.

Direct measures of cognitive skill are likely to be more reliable proxies for effective human capital. However, existing evidence on returns to cognitive skills surprisingly limited. Only recently, a new large-scale assessment of the skills of the adult population was conducted, the Programme for the International Assessment of Adult Competencies (PIAAC). Based on these new data, the workshop will show how employers value cognitive skills in 23 countries covering almost 75% of the GDP worldwide.

However, PIAAC only assesses rather general skills. The research on the returns to specific skills is even in an earlier stage than the research on the returns to general skills because specific skills are even more difficult to measure and compare than general skills. A specific type of cognitive skills that is gaining in importance in modern economies is the so-called complex problem solving skills.

**DISCUSSION.** In the workshop, we will discuss how complex problem solving skills relate to wages and employment in eight different countries, and what are potential implications for policy making.

The workshop is facilitated by Prof. Dr. Peer Ederer, Zeppelin Univ., Dr. Ljubica Nedelkoska, Harvard University, Dr. Simon Wiederhold, Ifo Institute, and Alexander Patt, Leuphana University.

*Room: Maelbeek*

## Workshop 5: Policy Trails and Adult Education

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### EXAMINING HOW POLICY WORKS ACROSS ACROSS EUROPE

**TOPICS.** Lifelong learning in Europe is “transversal”: it relates to many different policy areas, many different kinds of institution, and all citizens. LLLight’in’Europe research using the policy trail method has enabled us to explore and deepen understanding about how policy “works” across a range of locations. Starting with enterprises, we have investigated how these interact in key lifelong learning policy areas with a range of different stakeholders. We have been able to see how policy travels “downward” (e.g. from EU policy-making bodies and national governments) and “upwards” (from various stakeholders in the economy and civil society), and how these directions of policy interact – sometimes strengthening policy outcomes, sometimes weakening them.

**DISCUSSION.** Discussion in workshops will cover:

- How can enterprises, individual employers and employees, governmental organisations and other stakeholders contribute most effectively to policy processes?
- What tensions exist between their contributions? How can these be resolved?
- How can enterprises, other agencies and citizens identify the opportunities policies present to them? How can policies be designed to maximise positive engagement in them by relevant enterprises, agencies and citizens?
- How do different policy areas (e.g. health, training, labour market) interact within enterprises? What opportunities and constraints does this imply?

*With a contribution by Dr. Alexandra Dehmel, CEDEFOP*

### ADULT LEARNING: A SHARED RESPONSIBILITY! LESSONS FOR POLICY-MAKING AND IMPLEMENTATION

Adult learning covers the whole range of formal, non-formal and informal learning activities, general and vocational, and is delivered by a wide range of institutions. Responsibilities for setting and implementing policies lie with multiple stakeholders. It is a diverse and fragmented field. While the diversity of adult learning is important in ensuring relevance of learning to the needs of the economy and society, it poses major challenges as regards transparency, quality and coordination.

The idea of adult learning as a shared responsibility and active commitment of all stakeholders, including increased collaboration, need to be promoted. Looking at one particular strand of adult learning – continuing vocational education and training (CVET) – it will be shown why this is important and how it can be fostered. What does this imply for policy-making and implementation?

The workshop will be facilitated by Prof. John Holford and Dr. Susana de Melo, Nottingham University.

*Room: Salon*



## 14:30 – 16:00 Four parallel country-specific Workshops

During these four parallel sessions our researchers will present findings related to dynamics, performance and outlooks in specific countries. Drawing on results from CPS and PIAAC analyses, from policy trails descriptions and rankings of skills, the participants of the workshops will be able to discuss latest findings and interact with experts and national policy officers on the implications and the potential for skills development that each Member State has.

Some of the key findings to be discussed include:

- On average, going up one (out of five) PIAAC proficiency levels in cognitive skills is associated with an 18 percent increase in hourly wages
- Wage returns to cognitive skills differ markedly across 23 sampled countries (22 OECD and Cyprus)
- Returns to skills are largest in the U.S., Ireland, Germany, and the U.K.
- Returns to cognitive skills are twice as large in the U.S. as in the Nordic countries (Finland, Denmark, Norway, Sweden), Cyprus, Italy, and the Czech Republic
- Early career returns to cognitive skills grow 30 percent by prime working age
- Returns to cognitive skills are not significantly different for males and females
- Lower returns are associated with higher union density, stricter employment protection, and larger public sectors

In addition to regional PIAAC scores, we provide a score of regional complexity of occupations as a proxy for the utilization of human capital, and a score of youth unemployment as a proxy for the quality of the labor market and by extension the productivity of the human capital employed. This results in a ranking of European NUTS I and II regions. This ranking can be compared to GDP per person of the region, and to created clusters of regions with similar propensities. The resultant benchmarking can be used to identify regions which seem to make better or worse use of their human capital. The slides will highlight those regions relevant to the three countries in the workshop.

### Country combinations:

WS1: Austria, Germany, Italy

*Room: Maelbeek*

WS2: UK, Ireland, Portugal

*Room: Salon*

WS3: Denmark, Sweden, Spain

*Room: Passage*

WS4 : Netherlands, Belgium, France

*Room: Magritte*

## How to reach the venue

### Résidence Palace – International Press Center

155, rue de la Loi – Blok C

1040 Brussels

Tel.: 02 235 21 11

Fax: 02 235 21 10

[info@residencepalace.be](mailto:info@residencepalace.be)

### Getting there by car

GPS coordinates: (latitude and longitude: 50° 50' 33" & 4° 22' 50" or 50,8427 & 4,3808)

The entrance to the car park is at Etterbeeksesteenweg 25, 1040 Brussels. The car park is open Mondays to Fridays from 6:30 to 22:00.

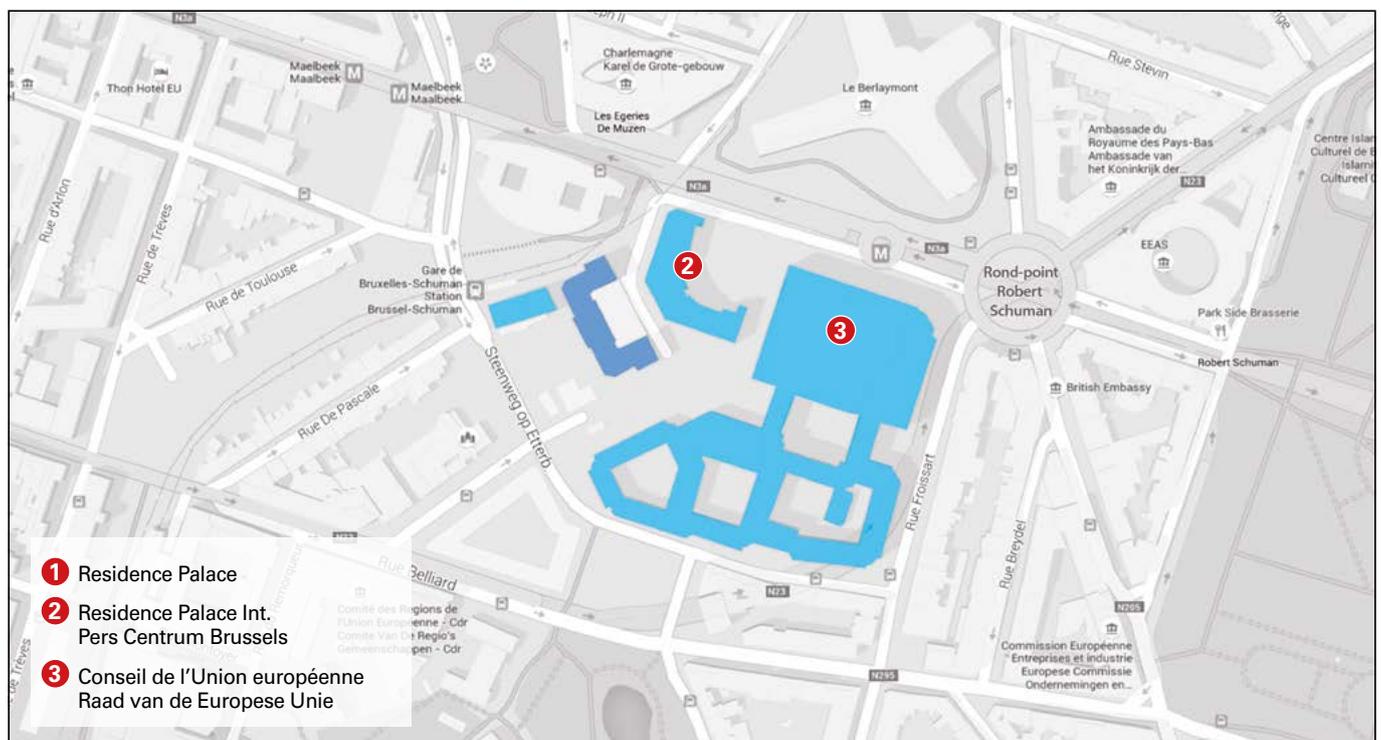
### Getting there by public transport

#### By train

The Résidence Palace is right above Schuman station. This makes rail the most convenient way of getting to the International Press Centre. Follow the signs saying 'Résidence Palace' in the station and leave by the Wetstraat exit. This brings you right opposite the main entrance to the International Press Centre.

#### By metro

Take lines 1 or 5 to Schuman station. This station is just below the Résidence Palace. Follow the signs saying 'Résidence Palace' in the station and leave by the Wetstraat exit. This brings you right opposite the main entrance to the International Press Centre.



Source and further information:

<http://www.presscenter.org/en/page/how-to-get-to-the-residence-palace>



## Speakers and Contributors



Philippe Keraudren holds a PhD in political science and a "Habilitation à diriger des recherches" in political science from the Institute of Political Studies in Paris. He specialised in the area of public sector innovation, notably at the European Institute of Public Administration in Maastricht, before joining the Commission at DG SANCO, working on consumer protection in services of general interest. He then occupied several posts in DG RTD and is now deputy Head of Unit at DG RTD in Unit B6 ("Reflective Societies") where he supervises the integration of social sciences and the humanities (SSH) across Horizon2020, the international dimension of SSH as well as the impact of the SSH European programme on science, society and policies.

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Joao Santos is Acting Head of Unit in the Directorate General for Employment, Social Affairs, and Inclusion at the European Commission in Brussels. The Unit is responsible for Vocational Training, and Adult education, as well as for the Erasmus programme in these policy fields. From 2009 to 2013 he was posted at the EU Delegation to China and Mongolia as a diplomatic Counsellor dealing with bilateral trade and investment issues. He had previously worked at the Directorate general for Employment and Social Affairs. In the same DG he worked on international relations covering the employment and social affairs dimension of the EU bilateral cooperation with China, the USA, and Canada, as well as on multilateral cooperation within the United Nations framework, on issues related to the Social Dimension of Globalization and the Decent work Agenda.

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Michael Schleupen is the CEO of the German company Audicon GmbH. He studied management sciences at the Scientific Applied University for Business Management (WHU) in Koblenz, Germany. After his degree he was responsible for the Schleupen Computersysteme GmbH in Austria. In 1994 he founded the Audicon GmbH in Stuttgart and has been since then managing director responsible for the product development.

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Mantas Sekmokas is an assistant policy officer, responsible for evidence informed policy making and analysis for the European vocational training (VET), adult learning and skills policies in DG EMPL. His responsibilities include coordination with Eurostat to ensure the policy relevance of statistical surveys within European social statistics and the development of European indicators and benchmarks for the VET, Adult learning and Skills policy fields. He also coordinates cooperation with OECD, particularly in the scope of Programme for International Assessment of Adult Competencies (PIAAC). His academic background includes a MSc in Cognitive and decision sciences as well as a MSc in International administration and management. Prior to joining the Commission, he acquired substantial experience working for the private sector, being responsible for business intelligence and analytics.

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## Speakers and Contributors



Maria Podlasek-Ziegler joined the European Commission in Brussels in 2007 after Poland – her home country – became a member of the European Union. She has been managing European Union funding programmes for the benefit of small businesses crossing borders and the non-formal learning sector (learning through personal experience outside schools) as well as working on policy development in the field of youth with the focus on entrepreneurship.

Before working at the European Commission, Maria founded and managed a Polish-German publishing company based in Warsaw for 13 years; she also translated several German books into Polish and published articles in various Polish newspapers and magazines. Maria holds a master degree in German philology from the Jagiellonian University in Cracow, Poland, and a postgraduate degree in journalism from the Warsaw University.



Marco Paccagnella is an Analyst in the Directorate for Education and Skills at the Organisation for Economic Co-operation and Development (OECD).

He holds a PhD in Economics from Bocconi University and a MSc in Economics from the London School of Economics. His primary fields of interests are the Economics of Education, Labour Economics and Applied Microeconometrics.



Dr. Alexandra Dehmel joined the European Centre for the Development of Vocational Training (Cedefop) in 2010 and works as an expert in the field of adult and work-based learning. She holds a Diploma degree in Vocational Education and Training and Business Studies from the University of Munich, a MSc degree in Comparative and International Education from the University of Oxford, and a Doctorate in Economic Sciences from the University of Paderborn. She has conducted various national and international research projects and published widely in her field of expertise. She is a member of the European Commission's Working Group on Adult Learning.



## Researchers' Profiles



Prof. Dr. Peer Ederer is a scientific entrepreneur and an entrepreneurial scientist. He researches, publishes, teaches and practices on the link between human capital formation, economic growth and innovation.



Laura Comincini is affiliated with Leuphana University. She has been collaborating with the LLLight'in'Europe project since summer 2014. Her work focuses on skills, and human capital in general, across EU countries.



Alexander Patt is a research fellow at Leuphana University. His research interests are focused on understanding the relation between job complexity, career choice and lifelong learning.



Silvia Castellazzi is affiliated with Zeppelin University, DE, and with Innovation and Growth Academy, NL. She has been researching and consulting on training and education topics, and has submitted a PhD on corporate social responsibility and access to training.



André Kretschmar has been PhD student of Prof. Dr. Samuel Greiff at the University of Luxembourg since 2012. His interests are intelligence and research integrity. In LLLight'in'Europe he is responsible for the assessment of complex problem solving skills.



Jakob Mainert has been PhD student of Prof. Dr. Samuel Greiff at the University of Luxembourg since 2013. He dedicates his research to training and transfer of cognitive abilities and is responsible for complex problem solving skill assessments within LLLight'in'Europe.

## Researchers' Profiles



Prof. Dr. Samuel Greiff leads the computer-based assessment group at the University of Luxembourg. His research focuses on educational large-scale assessments, problem solving and intelligence. He authored multiple research publications in his field.



Prof. Ulrik Brandi, PhD, is research leader of the Lifelong Learning programme at Aarhus University. He researches, lectures and consults on learning, knowledge and innovation in workplaces and organisations.



Rosa Lisa Iannone is a research assistant at Aarhus University and a member of the Lifelong Learning research programme. She researches and lectures on organisational and workplace learning.



Prof. Haizheng Li is Professor at the School of Economics, Georgia Institute of Technology; he received his PhD in economics from the University of Colorado-Boulder. He is a specialist in applied econometrics, labor economics, development economics and the Chinese economy.



Yvette Baggen is a PhD candidate at Education and Competence Studies, Wageningen University. In her research project, Yvette looks at the relationships between opportunity identification competence of employees, organizational learning, and the innovative performance of organizations.



Prof. Thomas Lans, PhD, is an assistant professor at Education and Competence Studies, Wageningen University. His research interests include entrepreneurship education and (situated) entrepreneurial learning. Furthermore, he is actively involved in entrepreneurship awareness and acceleration programmes.



## Researchers' Profiles



Prof. Harm Biemans, PhD, is associate professor at the Education and Competence Studies group of Wageningen. He carried out and supervised many projects in learning and instruction, competence-based education and training, professional development, and organisational learning.



Dr. Simon Wiederhold is Senior Researcher at the Ifo Center for the Economics of Education in Munich, Germany. His main research focus is on the role of cognitive skills for labor-market outcomes.



Susana Melo, PhD, is a Research Fellow at University of Nottingham U.K. since January 2014, when she joined the LLLight'in'Europe project. Her research interests revolve around the political economy of (particularly higher) education, sociology of knowledge and spatial ethnography.



Ljubica Nedelkoska holds a PhD in Economics of Innovation from the Friedrich-Schiller-University in Jena, Germany. In the past, Ljubica worked as a post-doctoral researcher and a coordinator of the Economics of Innovation Research Group in Jena, and as a research fellow at the Zeppelin University in Germany. Ljubica's research focuses on the areas of regional structural change, transferability of skills across jobs and occupations, learning on the job and capital-labor relations.



# LLLight'in'Europe



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