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# The need for Change in Education

Openness as Default?



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International LINQ Conference 2015**

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by the International Community for Open Research and Open Education (ICORE)

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*Open-Minded*



**Christian M. Stracke, Tatiana Shamarina-Heidenreich (Eds.)**

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# The Need to Change Education towards Open Learning

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**Abstract:** The need to change education is discussed and Open Learning Concept is presented and adapted for improving school education. Open Learning aims at the balance between learning innovation and quality for modernizing learning, education and training. Learning innovation and learning quality are very often addressed separately and solely. But in fact they are interdependent and have to be reflected both for achieving the best learning quality: This article discusses how to achieve the best appropriate learning quality as the core objective in learning, education and training. Only their mix can ensure to meet the learners' needs and to provide the best and appropriate learning opportunities and learning quality: The presented Open Learning concept aims at modernizing and opening up education for fitting to the given situation and for a long-term and sustainable improvement across all sectors in learning, education and training, all communities, educational and training systems and societies in Europe and worldwide.

**Keywords:** Open Learning, change, quality, innovations, learning history, quality development, school education, lifelong learning, digital age, ICORE.

## 1 Introduction: Why Open Learning?

In this article discusses the need to change education and the opportunities provided by Open Education: The concept of Open Learning will be introduced and adapted to school education.

The Open Learning theory answers the question how to improve the quality in learning, education and training to address the need for change in education due to the digital age and revolution. Open Learning is the theoretical and generic framework and long-term vision for the modernization of Learning,

Education and Training (LET) and for the required changes in all educational sectors, from kindergarten to lifelong learning. Open Learning combines learning innovations and learning quality to achieve a balanced and appropriate solution adapted to the given learning objectives, needs and situations.

An innovative and structural change in particular within the school education is required due to the general and global challenges by the digital age: As an example the adaptation of Open Learning to school education will present how to integrate learning innovation for modernizing education in schools.

## **2 Challenges by the Digital Age**

Learning innovations and learning quality are important and reflected topics for a very long time from the beginning of discussions and theories about learning processes: In Europe, Plato's Allegory of the Cave is one of the earliest examples. Their debate continued during the introduction of the first universities in the Middle Age and of the school systems in the 18th century. During the last years and the upcoming so called "digital age", many discussions took place (also in the fields of school and higher education, learning for work and at workplaces as well as non-formal and informal learning) due to the two main changes covering all sectors, branches and levels of the society: first, globalisation and second, establishment of the worldwide internet.

These two factors are leading to global markets, worldwide networking, communication and competition, as well as to the digitalisation of services and systems with the introduction of internet-based services, hardware and software within all parts of our lives. They were and are still changing all societies and in particular the learning, education and training in schools, universities, at work and online.

International and European policies are already addressing these challenges such as the OER Paris Declaration by UNESCO (2012) and the Opening Up Education policy by the European Commission (2013).

## **3 Discussions and Myths of Learning Innovations**

In international discussions about the need to change education and about future learning, education and training from theory, research and politics but also from press, individuals and social communities, the main focus is currently

on the technological innovations and their new opportunities. That is valid for learning opportunities and in particular for lifelong learning.

Theories and experts are claiming brand new and extraordinary chances, sometimes promising new learning eras and paradigms (Stracke 2014): e. g., the theories of connectivism by Siemens (2005) or of Social Learning by Hart (2011). Even the arrival of fundamental new ways of learning are promised under the label of learning 2.0 / 3.0 in analogy to the terms web 2.0 / 3.0 (Downes 2005, Karrer 2007, and for an overview Redecker 2009). Finally new concepts and descriptions of our world as a 'flat world' are leading to predictions that 'to learn how to learn' will become the most important asset for all workers due to all the changes and faster innovation (Friedman 2006). It is claimed that is this a new movement and progress however it has been clear and evident in pedagogy for several hundreds of years (if not longer) that 'to learn how to learn' is most important for learning processes and progress and for the development of personality and competences (Dewey 1966, Piaget 1953, Rousseau 1968 [originally published 1762], Vygotsky 1988).

We call this discussion the (learning) innovation strand: From this special perspective, it seems that learning innovations are the only path and road map for a better future education and training. The underlying (and often hidden) argument is that through them we are earning many new chances to learn, and without them we are not matching the changing times of globalisation and worldwide internet as well as the new digital generation, the so labelled "digital natives" (Prensky 2001, cf. for a general criticism of this term Schulmeister 2008).

On the other hand, there has been a long-term discussion with a longstanding tradition (since the beginning of our culture) about learning quality covering a broad range of topics, like the quality of learning design, objectives, materials, input as well as learning processes, outcomes and the achieved knowledge, skills and built competences.

We call this debate the (learning) history strand: In the past, many theories were developed dealing directly or implicitly with the question how to ensure or to improve learning quality (cf. for an overview Stracke 2006a). Many theories were developed in the past of the educational (learning) history whereas some of the topics like quality management for education and training are less than 100 years old.

Surprisingly, both discussion strands, the new innovation and the old history, were not interconnected and did not reflect each other (Stracke 2014). It seems that the supporters of learning innovations do not want to refer to theories of the past and that vice versa the authors of learning history do not want to

recognise global changes. That led us to an important question that requires urgent attention and an answer in our changing times: What is the relation between learning innovations and learning quality?

Our answer is based on three hypotheses of the current learning situation (for their detailed discussion and arguments cf. Stracke 2013):

1. Learning history should not be ignored: Modern innovation theories cannot ignore the treasure of expertise from history without losing a well-proven foundation for basing their argumentation.
2. Learning innovations are mainly technology-driven: They cannot be successful by themselves, they require an appropriate learning design and setting with an attractive and motivating learning environment.
3. Learning is not completely changing: The new modes and types of access and interactions in learning processes through new technologies do not change completely the way how people learn.

Therefore we direct our focus on the learning quality beyond new technologies: Learning quality was, is and will be the key for learning success and outcomes (Stracke 2012). Learning opportunities have to meet the needs of the learners and to provide the appropriate quality to fulfill their requirements. In this sense, learning history and learning innovations are two different approaches and points of view that are interdependent and cannot be reflected upon alone but have to be analysed in conjunction for achieving the best and appropriate learning opportunity and success.

Therefore only the mix of learning innovations and history based on learning experiences and theories from the past is promising and convincing to meet the need to change and improve education. Thus, we can say: Quality development is the crucial task for learning, education and training.

The question is now: How can quality development be addressed and improved in learning, education and training in our times of the digital age? The concept of Open Learning tries to provide a theoretical framework for the improvement of the learning quality through the integration of learning innovations leading to opening up the education.

## 4 The Theory of Open Learning

Open Learning tries to provide an answer on the given challenges of globalization for the modernization of learning, education and training. Open Learning combines the two major dimensions to meet the current requirements and the right balance between learning innovations and tradition achieving high quality in learning:

1. Suitable and **open learning styles** and designs
2. Suitable and **open learning scenarios** and environment

Open Learning introduces the open movement into all educational sectors: Under the umbrella of the term "Open Education" many different approaches are currently summarized. The use of Open Educational Resources (OER) and the design of Open Educational Practices (OEP) are often promoted for all educational sectors based on the definition by UNESCO (2002). As a theoretical and generic framework and long-term vision for the modernization of Learning, Education and Training (LET) and for the required changes in all educational sectors, from kindergarten to lifelong learning, Open Learning has always to be adapted to the specific situation, target group, learning objectives and needs.

Technology-enhanced learning can play a key role in the future improvement of learning quality in education: Not only formal, but also non-formal and informal learning can be facilitated by technology-enhanced learning, e. g., through social learning for working smarter and social workplaces (Hart 2011 and Cross 2010, for general criticism cf. Davenport 2005). In addition the support and tracking options offered by the used technologies can provide substantial basis for data collections, measurements and evaluations of all learning and working activities to assess changes in the performance and assigned competences.

## 5 Open Learning in Practice

In the following we will provide a first adaptation of Open Learning for the school education as well as an introduction into the key European Initiative Open Discovery Space.

## 5.1 Adaptation of Open Learning for school education

Open Learning can be adapted as **Open School Learning** for the school sector as the combination of:

1. Open Education (innovative education with technologies)
2. Creative Classrooms (collaboration with moderation)

Open School Learning introduces the concept of Open Education within schools by improving the variety of learning styles, amongst others through the use of e-Learning and Open Educational Resources. Open School Learning establishes the vision of Creative Classrooms where teachers are continuously changing their roles according to the scenarios and students are cooperating, amongst others through developing a network of communities across Europe.

Currently, two major projects funded by the European Commission is focusing such a broad and sustainable introduction of Open School Learning and technology-enhanced and competence-based learning within school education across whole Europe.

## 5.2 Open Discovery Space for Open Learning in schools

Open Discovery Space (ODS: [www.opendiscoveryspace.eu](http://www.opendiscoveryspace.eu)) with its focus on the school sector and teachers as main target group addresses more than 3,000 schools and offering training for over 10,000 teachers in all 27 EU member states: ODS introduces innovative learning designs and scenarios into K-12 schools through the support by technology enhanced learning and social communities.

Based on its ODS Innovation Model, the initiative focuses on the required modernisation of school education, based on the combination of Open Education and Creative Classrooms through the concept of Open School Learning. Open School Learning introduces and uses innovative scenarios, open educational practices and resources and can be realized through de-centralized and technology-enhanced communities. ODS cooperates since 2012 in a first of its kind effort with all school stakeholders to create a pan-European e-learning environment to promote more flexible and creative ways of learning. The project follows a unique approach to learning at school: supporting the development of self-esteem, an increased "sense of belonging", and an improved perception of

one's own capacity to solve problems. In this approach, ODS addresses teachers as main target group and develops regional hubs, instruments and online services, which facilitate and improve Open School Learning and contribute to the "construction of the surrounding community" (Stracke et al. 2013).

The ODS project has established de-centralized regional communities through the introduction of technology-enhanced learning within the national European school systems including the provision of a portal for Open Educational Resources and the development of learning scenarios and services for the long-term improvement of school education by innovative pedagogical planning and learning. The Inspiring Science Education (ISE: [www.inspiringscience.eu](http://www.inspiringscience.eu)) project will benefit from these developments and transfer all achieved results in the fields of science education for further support and innovations for and by teachers.

## 6 The Future of Learning

The introduction of Open Learning requires a complete change and paradigm shift of learning in the future: The paradigm shift from input to outcome orientation in learning is moving the focus from knowledge (as learning input), which can more and more quickly become outdated, to competences (as learning outcomes), including abilities to transfer and act successfully in an unknown situation. Today we have to learn during our entire lifetimes to fulfil lifelong learning in order to be prepared for future jobs and tasks that do not yet exist, which are still unknown and cannot even be thought about (Davenport 2005, Friedman 2006, Keeley 2007).

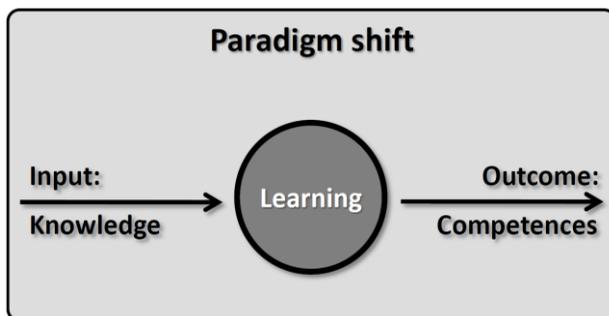


Figure 1: Paradigm shift in learning

However the term "competence" is defined in many different ways: The historical development lines of the term "competence" in different science disciplines demonstrate the variety and complexity of meanings and views on the term. In psychology, White (1959) has used the term "competence" very early (already in the year 1959) to designate skills developed by self-organization and required for performance. In semantics and only a few years later in 1962, Chomsky (1962) defined competence as the self-organized ability to construct and understand a potentially unlimited amount of sentences using a limited set of vocabulary and thus, to manage speech acts as a competent speaker. And based on these concepts, two different schools of thought were developed in different directions: the first line continued the Chomsky's ideas by broadening them to a human being's acting in general; the second line used the term for societal criticism and combined it along with "coping", in particular with the generation of social situations.

Today, the concept of competence (which is traditionally combined with successful acting in unknown situations in the Central European tradition) offers a theoretical basis for the development of strategies, methods and means for solving the current tasks (Weinert 2001). In addition, the needs for personal and organizational development have to be identified, and training and change management methods have to be introduced (Keeley 2007).

Thus, initiatives are taking place at the European (European Commission (2010), European Parliament/ European Council (2006) and European Parliament/ European Council (2008) and international level (Stracke 2011 and ISO/IEC 20006-1:2012) to harmonize the whole competence field on the basis of the requirements from all stakeholders, educational systems and societies. This paradigm shift towards competence-oriented learning, education and training is not only needed for facing current and future challenges but also for the broad introduction of Open Learning.

## **7 The Vision of Open Learning**

Efforts towards Open Learning through innovations like online cooperation, MOOCs and technology-enhanced learning have achieved broad awareness and agreement through the support of new policies such as Opening up Education launched by the European Commission. Nevertheless, investment in education and training is decreasing in many countries despite general recognition of its importance. Innovation and e-Learning can foster new ways of learning, however many contributions currently focus exclusively on technological opportunities.

But it is evident that educational change through Open Learning and refined pedagogies is extremely important to achieve the highest learning quality possible.

ICORE, the International Community for Open Research and Open Education ([www.ICORE-online.org](http://www.ICORE-online.org)) was established with this objective in 2013 and launched at the international LINQ Conference in Rome in order to promote open education and its connections with open research. ICORE is collaborating with leading European and international organizations motivated by a common vision, joining efforts for future strategies and activities which facilitate innovative learning in schools, universities, societies and at work.

ICORE promotes, supports and enhances Open Research and Open Education worldwide. Main objectives of ICORE are the recognition, progress and application of Open Research and Open Education: ICORE wants to bridge both worlds of Open Research and Open Education. The goal is the mutual re-usage of their results and outcomes, e. g. through the usage of digital resources from Open Research in Open Education.

Hopefully ICORE and all other stakeholders joining and interested in opening up learning, education and training will facilitate the required changes and realize Open Learning for improving school education, lifelong learning and societal impact. A first step was the discussion and approval of the "Declaration of Crete" (ICORE 2014) that is requesting the re-establishment of openness as default what could facilitate and improve the introduction of Open Learning worldwide.

## 8 Conclusions

Learning innovation and learning quality are very often addressed separately and solely. But in fact they are interdependent and have to be reflected both for achieving the best learning quality: The best appropriate learning quality remains the core objective in learning, education and training and can be achieved by combining the three dimensions learning history, learning innovations and learning standards. Learning innovations can increase the learning quality but require a basis provided by the learning experiences and theories from the past. On the other hand learning traditions have to be enriched by innovations, in particular facing the current worldwide challenges of globalisation and worldwide internet establishment. Together with the third dimension, the learning standards, learning history and learning innovations are building the

basis and potential inputs for planning and design learning opportunities. A suitable mix of history from learning experiences and theories and current innovations combined with international consensus on learning standards is required.

The Open Learning concept was introduced to fulfil these challenges and requirements: It has been roughly adapted to the school education as Open School Learning. In general Open Learning can ensure to meet the learners' needs and to provide the best and appropriate learning opportunities and learning quality fitting to the given situation and for a long-term and sustainable improvement. In the future it has to be demonstrated that Open Learning can also be adapted across all sectors in learning, education and training, all communities, educational and training systems and societies in Europe and worldwide.

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Nakabayashi, Kiyoshi (Japan)	Zhiting, Zhu (China)

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## LINQ 2015 Keynote Speakers

**Professor Dr. Grainne Conole** (Bath Spa University, UK)

**Professor Dr. Alexander Khoroshilov** (Officer-in-Charge for UNESCO IITE)

**Bodo Richter** (Deputy Head of Unit– Innovation in Education, European Institute of Innovation and Technology and Marie Skłodowska-Curie actions, European Commission)

**Dr. Yves Punie** (Senior Researcher at the European Commission Institute for Prospective Technological Studies (JRC IPTS), leading its research and policy activities on “ICT for Learning, Skills and Open Education”)

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<http://2015.learning-innovations.eu/category/linq-2015-speakers/>

## LINQ 2015 Conference Committee

The programme committee of the International LINQ Conference 2015 is composed of the following experts:

<b>Conference Chairs</b>	Christian M. Stracke ( <i>LINQ, University of Duisburg Essen; Germany</i> )
<b>Conference Managers</b>	Tatiana Shamarina-Heidenreich ( <i>University of Duisburg Essen; Germany</i> ), responsible for the paper, project, and workshop submissions Natalja Nillmaier ( <i>University of Duisburg Essen; Germany</i> )
<b>Conference Communication</b>	Sebastian Engel-Vermette ( <i>University of Duisburg Essen; Germany</i> )
<b>Technical Support</b>	Markus Ortel ( <i>University of Duisburg Essen; Germany</i> )

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