

Christian M. Stracke (Ed.)

The Future of Learning Innovations and Learning Quality

How do they fit together?



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Learning Innovations and Learning Quality: Relations, Interdependences, and Future

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Abstract: 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 by combining the three dimensions learning history, learning innovations and learning standards. Only their mix 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 across all sectors in learning, education and training, all communities, educational and training systems and societies in Europe and worldwide.

Keywords: Learning quality, learning innovations, learning history, learning standards, quality development, education and training systems, 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 in particular due to the two main changes covering all sectors, branches and levels of the society:

1. Globalisation and
2. worldwide internet establishment

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.

The European Union has identified the challenges and opportunities by these global changes and published several communications and framework for the future European society and its learning, education and training: Based on the Lisbon Declaration, the vision of the Information Society called i2020 and the established Bologna Process (European Commission 2005), the European Commission and Council have reviewed and analysed the impact of the globalisation, the internet and the information technologies in general leading to current new communications and policies: The Digital Age for Europe, EUROPE 2020 and Education and Training 2020 are reflecting these movements with special emphasis on the potentials for the European citizens and communities (European Commission 2010a and 2010b, European Council 2009).

In the international discussions about the 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 opportunities. Theories and experts are claiming brand new and extraordinary chances, sometimes promising new learning eras and paradigmas. 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.

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, without them not fitting we are not fitting to the changing times of globalisation and worldwide internet as well as to the new digital generation, the so labelled "digital natives". We call this discussion the (learning) innovation strand.

On the other hand, there is a long-term discussion with huge tradition (since the beginning of our culture) about the learning quality covering a broad range of topics like quality of learning design, objectives, materials, input as well as learning processes, outcomes and the achieved knowledge, skills and built competences. Many theories were developed in the past dealing directly or

implicitly with the question how to ensure or to improve the learning quality. We call this debate the (learning) history strand even if 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, are not interconnected and not reflecting each other. It seems that the supporters of learning innovations do not want to refer to theories of the past and that the authors of learning history do not want to recognise global changes vice versa. That leads us to an important question that requires urgently 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:

1. Learning history should not and cannot be ignored.
2. Learning innovations are mainly technology-driven.
3. Learning is not completely changing.

First of all, it has to be stated clearly that the worldwide changes by globalisation and internet for all through world wide web and social media and communities do not justify to withdraw or ignore all theories from the past. They are resulting from many discussions across societies, cultures and centuries leading to learning experiments, evaluations, failures as well as successes and finally to the improvement of both, the learning opportunities as well as the learning theories themselves. Modern innovation theories ignoring this treasure of expertise from the history are losing a well-proven underground for basing their argumentation (even if contradictory) that is providing a huge variety of different concepts (e.g. cf. for extremes the theories of cognitive development by Piaget (1953) and the systems theories by Luhmann (1995 and 1998) and Maturana/Varela (1992)). Moreover they cannot convince by such ignorance because without definition of their relation to the historical strand they claim to jump out of nothing (see figure 2 below) and start from the scratch (what is evidently not the case).

Second, the currently claimed learning innovations based on the effects of new internet opportunities, services and social media are only dealing with technological changes and chances: Of course we can realize diverse learning scenarios and (digital) communities, services and systems today that were not available several years ago (like social communities, MOOCs, blogging). But these technological inventions and changes are offering only new options and pre-

conditions. They cannot be successful by themselves, they still require an appropriate learning design and setting with an attractive and motivating learning environment.

Finally learning is not completely different and changing only due to the globalisation, new technologies and network opportunities. The new technologies and global changes are providing challenges and chances to establish new ways to base, present and integrate learning processes within education and training and learning groups including new options for self-regulated learning. But these new modes and types of access and interactions in learning processes do not change completely the way how people learn. The style how to use, consume and reflect learning opportunities and materials may change through increasing speed and multi-tasking and lower attention but that is only increasing the requirements for learning designers, educators and teachers.

What is most important for the success of learning processes is the learning quality. Learning opportunities have to meet the need of the learners and to provide the appropriate quality to fulfill their requirements. That can sometimes mean a simple learning course with teacher-centered education and sometimes a complex sophisticated learning environment with learner-oriented group work enriched facilitated by an educator as moderator, tutor or enabler and with new learning technologies and innovations including social media and communities. That means that learning quality cannot pre-defined but have to be adapted to the given situation and learners. In this sense, learning history and learning innovations are two different approaches and points of view that are interdependent and cannot be reflected solely but have to be analysed in conjunction for achieving the best and appropriate learning opportunity and success. Next to them, standards are building the third source for planning and designing the best learning opportunity and quality (see figure 1) what will be explained more in detail below.



Figure 1: The three dimensions of learning quality

This overall objective for the continuous improvement of learning quality can be called quality development: Quality development has to combine the relevant and appropriate approaches, concepts and elements from all three dimensions that are basing the learning quality: History (by learning theories and traditions), innovation (by new learning options) and standards (by consensus building on learning).

As shown in the following figure 2, there could be three alternatives and options in theory: To focus only on the learning innovations only (1.), to focus only on the history of learning traditions and theory (2.) or to arrange the mix between both approaches (3.). As already explained above, it is not possible to argue that the only focus on learning innovations can succeed by jumping out of nothing as it cannot be argued and proven how such a jump can take place by ignoring the learning experiences and theories. On the other hand, future learning opportunities have to reflect the changes in society and chances by innovations and would also fail by ignoring them. Therefore only the mix of learning innovations and history based on learning experiences and theories from the past is promising and convincing as shown in figure 2.

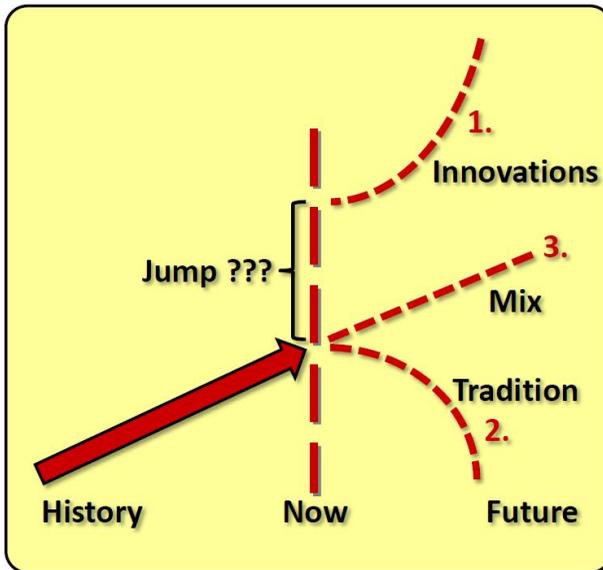


Figure 2: The potential three options for future learning quality

Thus, we can say: Quality development is the crucial task for learning, education and training.

In the past, a long-term debate has focussed the quality development in general regarding the different quality issues, aspects and approaches (cf. Deming 1982; Juran 1951 and 1992; and for an overview Stracke 2006a). Quality development in its broad sense can be defined as follows (cf. Stracke 2006b):

Quality development covers every kind of strategy, analysis, design, realisation, evaluation, and continuous improvement of the quality within given systems.

Quality development can be described formally by the chosen scope. Quality is not a fixed characteristic belonging to subjects or systems but depends amongst others on the point of view and scope. The following differentiation of the scope into three quality dimensions has become widely accepted:

1. Potential dimension: What are the potentials for the quality development in the future?
2. Process dimension: How can the processes be described and optimized for the purpose of quality development?
3. Result dimension: How can the quality development be supported regarding given results and systems¹?



Figure 3: The dimensions for defining quality in general

Quality development requires a long process to be established and integrated throughout a whole organisation and in particular the society. Once started, it has to become a continuous improvement circle to be finally successful (Crosby 1980; Deming 1986). Quality cannot be described and fixed by a simple definition, because in itself quality is too abstract to have any impact. Therefore, quality has to be defined and specified according to the given context and situation considering the perspectives of stakeholders involved (Donabedian 1980). It is important to identify the relevant aspects and to specify the suitable criteria. It is necessary to find a consensus amongst the different views and

¹ Cf. Donabedian 1980, for the whole long-term debate on the quality issues, aspects and approaches cf. Deming (1982 and 1986) and Juran (1951 and 1992).

perspectives to gain a common understanding of quality for the given context and situation due to different and sometimes contradictory needs and definitions of quality by all stakeholders (for detailed explanations on context determinations cf. Crosby 1980; Deming 1986; Donabedian 1980).

In this way quality awareness is the basic requirement for the adoption of quality development by all stakeholders from any organisation. But quality awareness will also be raised by the implementation of quality development on the other hand. To come to a sustainable integration of quality development within the whole organisation and to ensure the involvement of all stakeholders it is crucial to build a quality strategy and to integrate the quality objectives into the educational and business processes. Also the stakeholders' needs and responsibilities need to be integrated into the overall quality development.

The process of the adoption, implementation and adaptation of quality development can roughly be divided into three steps based on three different levels that need to be covered and addressed for a sustainable and long-term quality development according to the concept of the introduction of quality development within organisations (see figure 4, for the three level concept of the introduction of quality development cf. Stracke 2006b and 2009):

1. Level of the individual persons
2. Level of the organisations, communities, education and training systems and societies
3. Integration of quality development involving all stakeholders

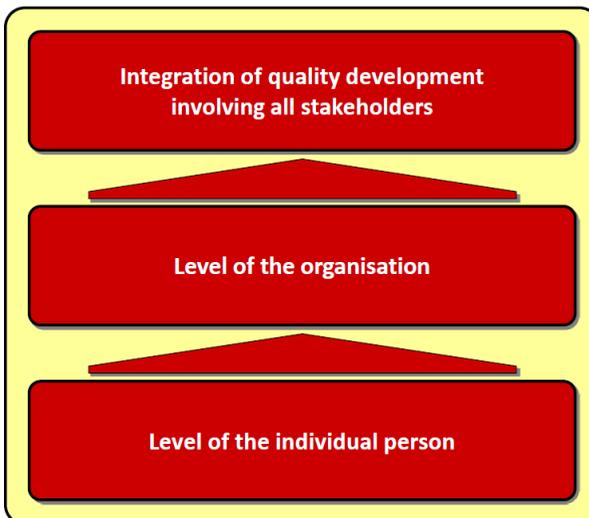


Figure 4: The three levels of quality in general

Currently, two major projects funded by the European Commission are focusing such a broad and sustainable introduction of quality development within learning, education and training across Europe²:

1. Open Discovery Space (ODS) with a focus on the school sector involving more than 2,000 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
2. ARISTOTELE addressing the learning processes within organisations with a specific focus on enterprises and the relation between working places and (organizational) learning

Finally, the following short section is focusing and highlighting the role of standards for learning, education and training as the dimension of standards is the most under-estimated one from the three sources and inputs for the learning quality (see above and figure 1). Quality standards are offering specific benefits for organizations, processes, and products. The quality standards themselves cannot guarantee high quality and success: it is always a question of the implementation and adaptation. Users of a quality standard will gain sustainable and significant advantages for their business if they are implementing and adapting the quality standard in a correct, appropriate, and long-term way that lives the idea of the quality standard.

Quality standards have got an impact in particular on seven main factors: The following figure lists these factors together with the main benefits of quality standards at a glance that can be identified in general related to these seven factors.³

² Both projects are presented more in detail in the chapter on European projects of this book, for further information see for ODS at: <http://www.opendiscoveryspace.eu/> and for ARISTOTELE at: <http://www.aristotele-ip.eu>.

³ For a detailed introduction of the seven factors and related benefits cf. Stracke 2009.



Figure 5: The seven main benefits of quality standards

In a short summary, quality standards have got the potential to improve the organizations, processes, and products leading to high quality and business excellence. The benefits of standards for learning, education and training could be characterised only in brief here.

A real first success story was proven by the first ISO quality standard for learning, education, and training (ISO/IEC 19796-1)⁴ that was developed by the ISO standardization committee ISO/IEC JTC1 SC36/WG5⁵ and approved and published in 2005. It has been adopted by the European standardization committee CEN TC 353 as European Norm (EN ISO/IEC 19796-1)⁶ in 2009 as well

⁴ For more details cf. Stracke 2009.

⁵ The abbreviation stands for: "International Organisation for Standardization (ISO)/ International Electrotechnical Commission (IEC) Joint Technical Committee 1 (JTC1) - Information Technology - Subcommittee 36 (SC36) - Working Group 5 (WG5) Quality Assurance and Descriptive Frameworks"; cf. <http://www.iso.org/jtc1/sc36> and <http://www.sc36.org/>. Members of SC36 are National Bodies, i.e. national delegations of appointed experts, and Liaisons Organizations without voting rights.

⁶ The abbreviation stands for: "European Committee for Standardization (CEN) Technical Committee (TC) 353: Information and Communication Technologies for learning education and training", cf. http://www.cen.eu/issc/TC_353. Members of CEN TC 353 are National Bodies, i.e. national delegations of appointed experts, and Liaisons Organizations without voting rights.

as by more than 60 countries worldwide as national standard (including all EU member states, China, Russian Federation, Japan, Korea, Canada, and USA).

A similar success story can be expected from the new ISO metadata standard Metadata for Learning Resources (MLR = ISO/IEC 19788-1) that was developed by the ISO standardization committee ISO/IEC JTC1 SC36/WG4 and approved and published in 2011. It is compliant with the international metadata standards Dublin Core (ISO 15836) and OAI from the Open Archives Initiative and will work as a successor of IEEE LOM (Learning Object Metadata).

Finally a new Portuguese standard (NP 4512) was developed and published in 2012 by the National Body of Portugal IPQ with the support of the European consortium Q-Cert-VET. This Portuguese standard is now under submission to the international (SC36) and European (CEN TC 353) standardization committees. Q-Cert-VET deals with development and publication of such a quality standard and initiates the development of required tools for professional quality certification. In this context the Q-Cert-VET consortium hopes to contribute to the ongoing development in the area of learning innovation and quality.

Summary

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. Only a mix of history from learning experiences and theories and current innovations combined with international consensus on learning standards 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 across all sectors in learning, education and training, all communities, educational and training systems and societies in Europe and worldwide.

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Learning innovations and learning quality are crucial for the success in learning, education and training: Both objectives are current challenges in the changing times of globalisation and increasing internet usage and mobility leading to worldwide communication, exchanges and markets. People, enterprises and societies are coming and growing together, also demonstrated by the success of social communities and media.

However, learning innovations and learning quality are often discussed solely and separately without any references and relations to each other. In particular there is a tendency for a too narrow focus on new technologies and enabled functionalities today forgetting the benefits and traditions in learning design from the past.

This handbook presents scientific articles addressing the needs for a combined approach and opening the debate on the question:

How do learning innovations and learning quality fit together for successful education and training in the future?

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