

Quality Literacy — Competencies for Quality Development in Education and e-Learning

Ulf-Daniel Ehlers

University of Duisburg-Essen, Universitaetsstr. 9, 45141 Essen, Germany
+49-(0)201-183-4403 // ulf.ehlers@icb.uni-essen.de

ABSTRACT

The article suggests that stakeholders involved in quality development need a specific competence, called quality literacy, in order to successfully improve learning processes. We introduce and describe quality literacy as a set of competencies that are needed for professional quality development. Quality literacy emphasises the importance of professionalism as a necessary component for quality development, in addition to structural quality management models. We argue that quality development is a co-production between learners and their learning environment. This means that the educational process can only be influenced and optimised through participation and not steered externally. Quality strategies cannot, therefore, guarantee a high quality of learning processes but rather aim at professionalisation of the educational process and stakeholders. This article suggests participation and negotiation between educational stakeholders (clients and providers) as a main condition for quality development. In addition, we present a quality model that conceptualises quality as a potential that can only be achieved through interaction.

Keywords

Quality literacy, Participatory quality development, Professionalisation, Co-production, Educational quality, E-learning

Introduction

Quality in e-learning has become a leitmotiv in educational policies, an imperative for practitioners, and a huge demand for learners. Achieving high quality is a much debated and sought-after goal in all segments of education. It is, however, not so much characterized by its precise definition but rather by its positive connotation. The word quality (from the Latin word *qualis*) means “composition” or “characteristic.” In everyday language, however, the term is used to distinguish a characteristic of an object as being of a higher calibre than that of another object. We can observe that the debate is not characterized by empirically accurately defined and operationalized ideas, but is made up of a dense bundle of a broad range of arguments, objectives, convictions, and procedures.

The search for quality in e-learning and education is often addressed in the way of finding a suitable approach for controlling or steering the pedagogical process. Yet, this view ignores the fact that the relation between cause and effect in the field of pedagogical practice is rather open and insecure (cf. Fink, 2003; Moslehian, 2003; Taylor, 2004). It is one of the few secured results of educational research so far that pedagogical practice is much more characterized by insecurities and situational interpretations than through systematic cause-effect relations (cf. Oelkers, 1982). Because of this reason, Luhmann and Schorr (1982) attribute to pedagogy a “technological deficit.” In particular, psychologically oriented e-learning research tried for some time to determine the exact cause-effect relation between e-media attributes (screen colours, length of dynamic learning objects, etc.) and learners’ learning progress in order to derive consequences for the design of learning environments. (For an overview of these attempts see Ehlers, 2004). However, such research designs proved to be too complex, and we can conclude that, not the media characteristics alone, but rather the underlying learning methodology and instructional arrangement facilitate learning success (cf. Russel, 1999). Today it is clear that knowledge, information, and learning media do not have an inherent learning quality but rather carry a quality potential, which has to be released in co-construction processes during the learning phase. This process is highly influenced by the learners themselves (cf. Friend-Pereira, Lutz, & Heerens, 2002). In this article, we therefore argue for a new understanding of quality development in education and e-learning.

Quality development should not rely solely on structural models and strategies but take into consideration the professionalization of quality development — especially in light of its technological deficit. The main assumption of this article is that there are certain competencies for professional-quality development, and that these apply to both the learner/client side and the teacher/provider side. Quality development in education is viewed as the result of quality competence of the involved stakeholders. This competence is termed *quality*

literacy. It is viewed as a critical factor for success of every quality-development activity in education. The concept builds on earlier work (cf. Ehlers, 2005) and develops a theoretical foundation based upon educational theories and terminology for the concept of quality literacy. The scope, the validity of described concepts, and the reach of this concept have to be understood within this theoretical framework. Quality development is defined, from an educational point of view, as a co-production and a participative concept. Evidently, a theoretical contribution with this focus has restrictions in scope: Economic and/or technological models are not integrated into the argument.

Next section describes the context and conditions for the concept of quality literacy by using a categorization of the term “quality” taken from the sector of service quality. It is argued that education has to be conceptualized in form of a pro-sumption rather than a production-consumption relationship, and takes place in participation. Building on this thought, the section introduces the notion of participative quality development as a pre-condition for educational quality development (See the section on participation and co-production as conditions for educational quality development). We stress that the ultimate goal of quality development processes has to be the incorporation of new or changed procedures, rules, and values of the educational actors.

Section three introduces and elaborates upon the concept of quality literacy. First we give the general background and scope of the concept as well as the methodology used to derive the concept from already existing theoretical works and conceptual backgrounds. Moreover, we describe in detail a set of competencies that are necessary to perform improvement processes based on the outlined conditions for quality development in education. We emphasise that quality literacy is much related to the concept of total quality management. It is defined as the individual ability needed to develop and implement a culture of quality as an ongoing improvement process.

Section four relates quality literacy to a model of interactive and participative quality development. It is taken from the field of service quality development and adapted to the field of educational quality development. The concept of quality literacy is described as the basic competence to perform the necessary actions that are suggested and described for both providers and clients within the presented quality model.

The conclusion (**section five**) suggests that the result of an educational process cannot directly be influenced and optimized like a production process. It is argued that quality strategies, therefore, cannot mechanistically guarantee high quality of learning processes but should aim rather at a professionalization of the pedagogical process — for both clients and providers. The quality literacy concept is a step in the direction of professionalizing quality development in this sense. Finally, some research issues are suggested which can be seen as desiderata in the frame of the formulated concept.

Although e-learning is the general context in which the concept of quality literacy has been developed, we do not distinguish between education and e-learning in this article. The term we use is “education.” We believe that e-learning is an educational innovation and has a number of specific challenges to it (cf. Seufert & Euler, 2002). When introduced to educational scenarios, it often functions like a magnifying glass and reveals immediately deficits in pedagogical planning or teaching/learning organization. However, the concept is of a generic nature and addresses quality development issues from their very core — and thus does not make a distinction between “e”-learning as the field of quality development and “non-e”-learning. Although there are a number of specific challenges which differ between e-learning and non-e-learning, it is argued that the concept of quality literacy addresses issues that are the same in both fields. In this sense, the concept is a generic concept and is equally applicable to the field of e-learning vs. education as well as to the different educational sectors.

Section two: Quality in education

In this section the main conditions for quality development in education are described. It is suggested that quality development is a constant negotiation process in which all stakeholders should participate in a common effort to define and implement quality in a continuous, improved way. It is this specific characteristic of educational quality as a *relation* rather than a *product*, and connected to it, the ever-present debate and fundamental question about the relation of “imparting” education vs. self-organization of educational processes (cf. Fink, 2003; Taylor, 2004) that demands a specific competence in the quality development process. In order to empower the individual actor in the educational process — be it as teachers or learners — and to orient every educational interaction towards improvement, the actors have to be *quality literate*.

In this section, two characteristics of educational quality development are described: the multidimensional nature of quality in education, and the need for rethinking quality as a participatory process that must be facilitated as a co-production between educational stakeholders. Both aspects emphasise that continuous improvement processes in education are of an unforeseeable and dynamic nature, which demands a certain ability of the involved actors to respond to these challenges. This ability is described as a competence rather than as a reproducible knowledge. (See **Quality literacy: Competencies for quality development** for elaboration of this distinction.)

Quality as a multidimensional concept

Quality in education is a multidimensional concept (cf. Donabedian, 1980; Ehlers, 2004). Therefore, different approaches to define quality are available (cf. Quartapelle & Larsen, 1996). Berkel (1998) suggests a three-dimensional scheme, originally for service quality, which has been adapted to the field of educational processes in the following description. It locates quality within three poles (ibid., p. 19):

- objective vs. subjective: This dimension addresses the question of who is defining quality criteria and values. If the quality value is defined only through the performance indicators of a product, Berkel (1987) terms it objective quality. The quality characteristics then have to be a part of the respective good, which is only partially true for the field of education. For education, the quality characteristics are usually defined through individual persons or committees in a subjective way. The definition of quality requirements through clients or learners is a subjective quality definition.
- inherent vs. instrumental: This dimension relates to the questions of where quality can be observed and when it becomes explicitly measurable. Inherent quality relates to the quality of a product that can be observed as lasting and innate. If quality reveals itself only through a service process, and thus the participation of clients, we refer to it as an instrumental quality. Often objects with inherent quality characteristics (e.g., Learning Management Systems, learning materials, etc.) are used in an instrumental way.
- endogenous vs. exogenous: If organizational processes and structures are taken into account when evaluating and/or assuring educational quality, we say they are of endogenous quality. If the educational institutions or organizations are not part of a quality evaluation, we say they are of exogenous quality. The quality evaluation of education requires an active process. Endogenous and exogenous can be used to distinguish between quality assessments that are either directed to the surface structure (exogenous) or to the deep process structure (endogenous) of an educational service.

According to Berkel's (1998) distinction, the quality of education is subjective, instrumental, and endogenous. It reveals that quality in education is a client-oriented concept in which the quality requirements are defined in participation between clients and providers. The quality of education is therefore constituted only through mutual interaction of learners with their learning environment (cf. Brindley, Walti, & Zwaki-Richter, 2004), and the evaluation of quality is influenced by organizational processes within which the educational process takes place (endogenous).

Participation and co-production as conditions for educational quality development

Classical service theory conceptualises the interactive relationships between the actors of people-oriented services and the categories "production" and "consumption" (cf. Gross & Badura, 1977). It is argued that education is a symbolically mediated, productive-active interaction as well as a production process. This process involves learners together with other actors (learners, teachers, etc.). It therefore has to be conceptualized in the form of a pro-sumption rather than a production-consumption relationship (cf. Martens & Prosser, 1998). The addressees of educational services are therefore conceptualized as active "co-producers" and not as passive receptors. According to Meyer and Mattmüller (1987), services are thus not defined by an absolute quality, but rather by their quality potential, and can only release this potential through the active involvement of the client. Le Preau (2005) even stressed that quality can only be defined through taking into account the view of as many stakeholders as possible. He refers to the stakeholders of education as quality experts.

A parallel can be drawn here to newer approaches of change management in organizations. Doppler and Lauterburg (2005) describe the importance of flat hierarchies in organizations and the importance of individual empowerment and competence development of the organizations' actors for constant adaptation processes to a changing environment. Hiatt and Creasey (2003) and Champy (1995) emphasise in their approach the role of the individual actor for change processes in organizations. It has to be noted that in all these approaches, the ability of individuals to competently engage in and self-organise change processes is emphasised as strongly as

structural management issues (cf. Hall & Hord, 2001). Organizational change and learning thus relies on individual change (cf. Boyce 2003).

For the design of high-quality learning environments, this view bears some consequences: Learning environments — a term that is used here in the broad sense, referring to the sum of all processes that constitute the learning opportunity and including all resources and persons that are part of it — have to be designed in a way that makes it possible for learners to express their demands and preferences as part of the construction process. Only then can learners bring forth their experience, backgrounds, and demands, thus enabling providers to design learning environments in a way that allows active learning, problem solving, and competence development oriented towards the learners' individual needs. The assurance of quality exclusively reached through predefined, static frameworks (e.g., standard evaluation questionnaires) often does not sufficiently address this particular necessity of co-production in educational settings (cf. Baijnath & Singh, 2001; Freesen, 2002). From this perspective, it is important that the development of quality strategies takes into account an active negotiation process as a specific condition of quality development and supports it proactively. Quality management concepts therefore have to include a negotiation component. This requires an extended understanding of process-oriented quality-development models, and asks for competence development and staff professionalization components within quality strategies.

From a socio-structural point of view we can moreover observe that clients' identity structures change and standard biographies become more and more heterogeneous, and therefore lose their prognostic value for planning educational processes (cf. Beck, 1986). Quality concepts that are still based on concepts of traditional biographies are losing their analytic powers over educational processes. If the described necessity of individualization of educational processes is taken seriously, then it is difficult to formulate fixed and prescriptive quality standards for progressively heterogeneous situations. They have to be compared to flexible negotiation frameworks that allow consideration of the learners' situation and perspective in a co-productive process (cf. Pruitt & Carnevale, 1993). To use a participatory quality strategy means to support or hinder negotiation processes but not to substitute them through management processes any longer.

Section three: Quality literacy — competencies for quality development

The concept of quality literacy is based on the assumption that quality in education is the result of competent behaviour of stakeholders involved in an attempt to develop quality. The scientific approach that is used to derive the concept of quality literacy builds on the concept of Total Quality Management as described by Horine and Lindgren (1995) and applies the concept of Media Literacy as formulated by Baacke (1996) to the field of quality development. This application is done on the theoretical basis of the concept of action competence relating to elaborations of Weinert (1999) and van der Blij (2002) and also taking into account the connection between knowledge, skills, and competence according to North (1998, 2005). In this section we describe the theoretical background of the concept and the methodology that has been used to construct the concept of quality literacy. We define a set of skills that are necessary to perform quality development processes. The concept is embedded in the view that quality has to be defined in a participatory way (see section two).

Theoretical Background and approach of a new Concept

Quality literacy is a concept that is much related to the philosophy of total quality management. Within this approach, quality is seen as a continuous improvement process, involving all stakeholders in the process of a permanent assessment and quality improvement (cf. Horine & Lindgren, 1995). One element is of key importance — the introduction and development of a quality culture into an organization. This has two dimensions (fig. 1). First, a managerial dimension that is of a rather technocratic nature and deals with implementing tools and instruments to measure, evaluate, enhance, and assure quality. This is usually facilitated through a top-down process. Second, a dimension of quality commitment focuses on an individual level. It relates to the individual commitment to strive for quality, using tools and instruments for quality development. First and foremost, however, it focuses on changing attitudes and values, and developing new skills and competencies in order to make a permanent improvement of quality possible. Individual abilities, attitudes, and values add up to a collective level, which in turn leads to a quality competent organization. This dimension relates to a bottom-up process.

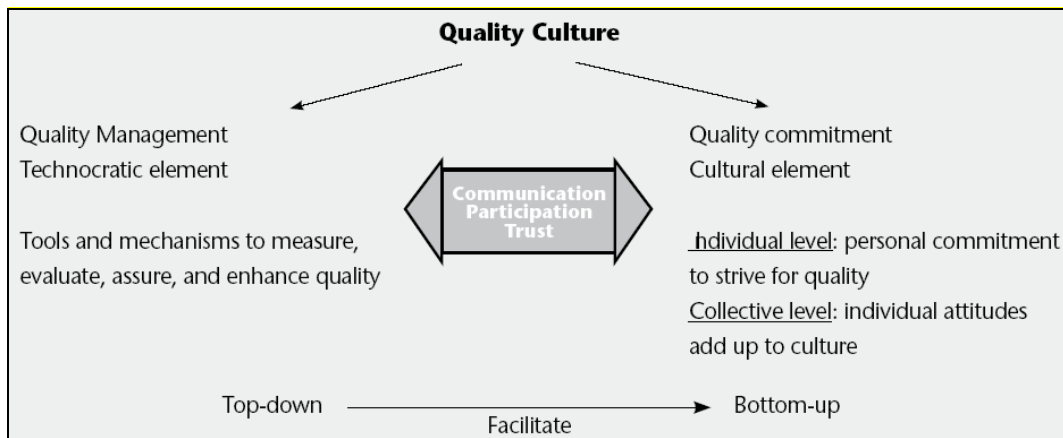


Figure 1. Quality culture (European Universities Association, 2006)

The ability for an individual to competently use, modify, and further develop existing tools, instruments, and strategies, or to introduce them or develop them new in order to pursue a permanent quality orientation in an educational setting shall be called quality literacy. Quality literacy is not a free-floating concept, but can be rooted in and connected to many already long-existing theories and approaches. We derive the term originally from the concept of media literacy as it was formulated by Baacke (1996). Baacke suggested conceptualizing media literacy as an ability with four dimensions: media knowledge, media critics, media usage, and media design (ibid.). As a concept, media literacy describes the abilities that individuals need to act competently in a world mediated through media. From a methodological point of view, we transfer the four dimensions of media literacy and reformulate them for specific application in the field of quality development. Quality literacy thus describes the abilities that individuals need to act competently in quality-development processes. The use of a conceptual transfer methodology from one field to another demands clear definition of the related concepts and a comprehensive description of the fields they apply to.

In an organizational context, quality literacy is a set of skills that enables individuals to take part in the development of a quality culture. For individual learners, the same set of skills enables them to pursue permanent improvement processes of their own learning and development processes, using quality instruments and concepts. Quality literacy thus applies to both sides — actors on the providers' side of educational processes (teachers, tutors, media designers, or administrative staff) and actors on the clients' side of educational processes (learners). It is a set of generic skills that applies in both contexts and has to be adapted to the specific situation.

This concept is comprehensively introduced in this article for the first time. It is based on the belief that quality improvement is the result of the (quality) competent action of individuals. It is of complementary nature to external organizational quality strategies that are seen as an important but not sufficient component for achieving high quality in education. Quality literacy manifests itself in the ability of actors of an organization or of an individual learner to use quality strategies and tools, and incorporate the changed and new beliefs and values they inherently carry into their everyday professional behaviour and procedures. Only then will educational quality development be successful.

A set of individual competencies necessary for this purpose can be described and are captured in the concept of quality literacy. Although the concept is fairly new, it has counterparts in other areas that follow a similar pattern. For the field of organizational learning, for example, Peter Senge (1990) describes a set of five competencies that he introduces as important for all forms of organizational learning. He stresses that not only must external strategies, procedures, and rules be implemented into organizational change processes, but that the actors have to take on new ways of thinking and acting and thus have to become competent facilitators of change.

The concept is entitled quality "literacy" because not only does it relate to *knowledge* about quality but goes beyond this, towards the concept of *competencies*. It goes back to the theoretical approach of action competence, which is defined as the ability of self-organization in a specific educational or professional context (Weinert, 1999). One important assumption in this model is that competencies can be learned and developed through practical activity. The necessity of an active, self-organized learning process is stressed, and competencies cannot be taught through a purely instructional approach. Van der Blij (2002) stresses the importance of knowledge, skills, and attitudes for competencies: "Competence is defined as the ability to act within a given

context in a responsible and adequate way, while integrating complex knowledge, skills, and attitudes.” Wildts (2006) adapts the concept of Competence Steps of North (1998, 2005) to show the link between knowledge, skills, competence, and professionalism (fig. 2).

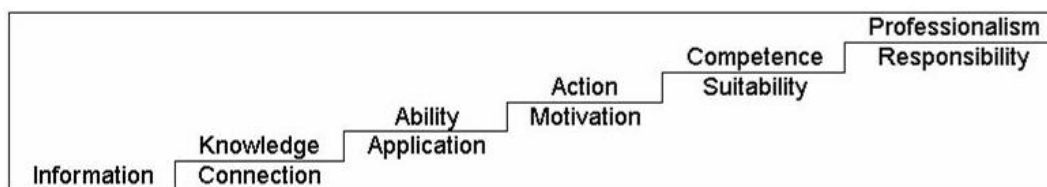


Figure 2. Steps to professional competence (adapted from Wildt 2006)

Quality Literacy in this sense is seen as a basic prerequisite to acting professionally in quality development contexts. On the first step, information about quality and quality development or related fields is interconnected and linked to knowledge. On the second step, they are applied and result in abilities. This is the step where individuals have practical experiences with applying or using quality strategies, tools, or instruments. These abilities are transformed in activities through motivation and will. Competence, however, demands an additional evaluation about whether the performed activity is suitable in a given context. For this, an individual usually needs standards against which he or she can assess whether something is suitable in a specific context. For quality development, these can be societal norms, legal rules, criteria that are agreed on in the specific organizational context, or set of standards for individual behaviour. Wildt (2006) extends North’s concept by including the step professionalism, which relates to the responsibility towards clients and society. Quality literacy, therefore, is more than knowledge or abilities.

In general, it has to be noted that quality literacy applies to all forms of knowledge, information, and learning of technology-related educational concepts, such as e-learning, blended learning, and presence courses. There are commonalities and differences between “traditional” educational scenarios and e-learning. Concerning quality development, however, we have to note that it is a process of negotiation with the goal of providing successful education in both educational fields. For e-learning, we additionally have to deal with the specific field of technology. Of course, additional areas of knowledge apply here. In principle, however, quality development requires the same competencies.

In conclusion, we can state that the concept of quality literacy builds upon existing concepts and aims to describe skills that enable individuals to perform quality development competently. Sometimes these situations are very complex (e.g., when it comes to restructuring whole organizational processes). Sometimes, though, there is little complexity when only one specific quality instrument is applied to perform quality assurance (e.g., a questionnaire at the end of a program or course). Quality literacy, moreover, is a concept that cannot exclusively be learned by means of books or training, but requires experience and practice. It is a concept that is subject to constant change, as the means and forms of technology-enhanced education change as well.

The four dimensions of quality literacy

Quality literacy (fig. 3) can be seen as a set of four central competencies that contribute to carrying out successful quality development in education. They do not constitute distinct factors of quality literacy, but rather differentiate the inner structure of the concept of quality literacy. A more precise description of the inner structure and coverage of the concept is presented and elaborates upon the four dimensions the concept contains.

Dimension one: Quality knowledge

This dimension addresses the “pure” knowledge about the possibilities of today’s quality development and up-to-date quality strategies in e-learning and education. The term “quality strategies” refers to all guidelines, structures, rules, tools, checklists, or other measures that have the goal of enhancing the quality of an e-learning-scenario. There are two sub-dimensions to quality knowledge: informational and instrumental, which go back to Ryle’s (1949) classification of “knowing that” and “knowing how.”

- a) **informative:** The informational dimension refers to information and knowledge about quality systems, tools, and procedures. It is about having access to information resources, primary as well as secondary, and understanding the system of quality development. Typical examples of this are questions such as: What is a quality approach? What is evaluation? quality management? quality assurance? quality development?
- b) **instrumental:** The instrumental dimension refers to the knowledge of how to use and apply a specific tool, such as an evaluation questionnaire, or how to use a list of criteria or guidelines for a specific context. The

instrumental dimension answers questions such as the following: How can an evaluation questionnaire be applied in an educational context such as a classroom? How can a set of benchmarks be used to compare my system to another one? The instrumental dimension does not, however, relate to the competence of implementing a quality system with a certain intention, such as reducing a course's drop-out rate. That is covered through the dimension of quality experience.

Dimension two: Quality experience

This dimension describes the ability to use quality strategies with a certain intention. It is based on the experiences that actors have with quality development and with applying quality measures and strategies to educational scenarios. It can be differentiated from the instrumental knowledge dimension because it refers not only to the pure application of quality strategies or tools but also covers the processes of feedback analysis and initiating improvement. That means that, in addition to the instrumental knowledge of quality strategies, this dimension also carries with it an intention and a goal. Quality experience refers to the ability to use (existing) quality strategies (e.g., guidance and consulting concepts) to generate data about educational processes in order to improve them. It answers questions such as: How can I use quality strategies in a certain way to improve the educational process?

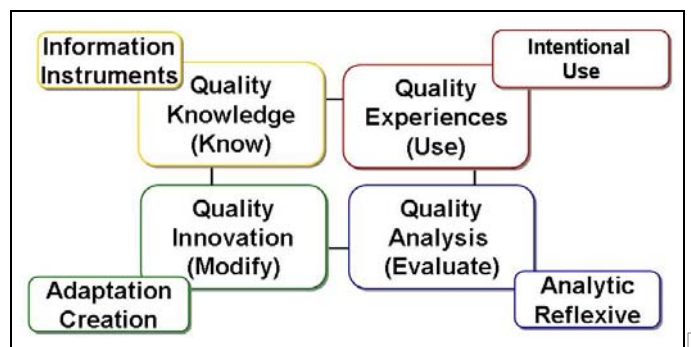


Figure 3. Dimensions of quality literacy (QL)

Dimension three: Quality innovation

This dimension relates to the ability that goes beyond the simple use of existing instruments and strategies. It refers to the modification, creation, and development of quality strategies and/or instruments for one's own purpose. An innovative and creative aspect is important for this dimension. Within this dimension, "adaptation" and "creativity" mean further development and reorganization of existing quality strategies within a given context. "Innovation" means thinking up and developing new strategies for quality development.

- a) **Adaptation:** This sub-dimension refers to the ability to adapt an existing quality strategy or tool to one's own context. It goes beyond the pure usage of an existing tool, requires deeper understanding of it within the given methodological framework, and demands creativity. A typical question is: How can a certain quality management concept be extended to a number of processes and categories in order to adapt it to the organization's specific needs?
- b) **Creation/innovation:** The creation/innovation dimension describes the ability to think beyond existing strategies and go further than just modifying them. It also describes the ability to invent a complete new quality system. Such self-developed systems are often used for an organization's internal purposes when existing approaches do not cover the specific goals and requirements. An example would be the development of a new evaluation questionnaire for the assessment of a course when existing tools fail to analyse the desired aspects. Also, it could be the development of a new method of consultation with learners before a course starts in order to assess their needs and goals.

Dimension four: Quality analysis

Quality Analysis relates to the ability to critically analyse the processes of quality development in light of one's own experiences and to reflect upon one's own situation and context. It enables actors to evaluate different objectives of quality development and negotiate between different perspectives of stakeholders. To critically analyse means to differentiate between and reflect upon existing knowledge and experiences in light of quality-development challenges. For learners, this means being aware of their responsibility for quality in education as a co-producer of learning success. For providers, this means enabling flexible negotiation processes in educational offerings and respecting individual objectives and preferences as well as societal contexts and organizational structures in their definition of quality objectives for education. Two sub-dimensions can be differentiated: analytic and reflexive.

- a) **Analytic Quality Analysis:** The analytic dimension covers the process of analytically examining the meaning and the debate of quality in education in general. It is the ability to move within the framework of quality discourse, to contribute analysis, and to understand the different influences, starting from the market perspective and business models, taking into account technical aspects, and not forgetting the pedagogical aspects. Analytic quality analysis answers the question: What is the state of quality discussion and what are important developments in the debate?
- b) **Reflexive Quality Analysis:** The reflexive dimension is directed towards the analysis of one's own situation. It is the ability to set quality goals for one's own individual or organizational context, and to position oneself in the quality debate. The reflexive dimension emphasises the ability to understand future challenges in educational quality development, rethinking one's current quality situation, and developing a strategy to meet future challenges. A typical field of the reflexive quality analysis competence is the development of future goals, leitmotivs, and strategies either for oneself as the individual learner or for an organization.

Table 1 summarizes the different components of quality literacy and gives an overview of the questions that they relate to.

Table 1. Overview of different components of quality literacy

Quality Literacy Dimension	Questions/Examples
Dimension 1: Quality Knowledge	
Information	What is a quality approach? What is evaluation? quality management? quality assurance? quality development?
Instrumental/Qualification	How can an evaluation questionnaire be applied in an educational context, such as a classroom? How can a benchmark be used to compare one system to another?
Dimension 2: Quality Experience	
Intentional Use	How can I use quality strategies to improve the educational process?
Dimension 3: Quality Innovation	
Adaptation	How can a certain quality management concept be extended to a number of processes and categories and adapt to the organizations' specific needs?
Creation/Innovation	Create an evaluation questionnaire for the assessment of a course when existing tools fail to analyse the desired questions. Create a new method to consult with learners before a course starts in order to assess their needs and goals.
Dimension 4: Quality Analysis	
Analytic Quality Analysis	What is the state of quality discussion and what are important developments in the debate?
Reflexive Quality Analysis	Development of future goals and strategies for either oneself as an individual learner or as an organization.

Section four: Participative model for quality development

In the following section, we present a quality model that shows the interactive nature of quality development in education (fig. 4). It is a model of Meyer and Mattmüller (1987) that is taken from the field of service quality and adapted to the context of education. The above-described characteristics of quality development and the suggested concept of quality literacy are connected to this model. The model shows that quality is at first only a potential that has to be realised through mutual negotiation and stocktaking of providers and clients. It combines the quality process distinction from the work of Donabedian (1980) with concepts from Grönroos (1984), and divides quality into three processes: potential, process, and outcome quality. These are each differentiated for the provider side and the client side. In figure 4 the model is extended by adding phase categories: a) needs analysis, b) realisation, and c) incorporation. For each phase, the concept of quality literacy applies in a different way.

Potential quality/needs-analysis phase

In this phase, the need for quality, situation, and context of the educational scenario is subject to examination. The potential quality of the provider is characterized by the capacity of its staff and the potential of its equipment, materials, and infrastructure. The specification potential is the provider's ability to react to the client's individual needs and preferences in order to provide the appropriate educational environment. The contact potential is the ability to enter into a negotiation process with the client. It relates to expertise in the field of pedagogic-diagnostic abilities and also covers the means of communication and contact possibilities. The contact potential aims at building trust with clients and establishing the basis for negotiation of the educational provision. All in all, the potential quality of the provider is about its capacity to interact with clients and react to their needs.

The model also sees a potential quality on the side of the client: The term integration potential points to the ability of clients to assess their needs and their capacity to self-reflect and analyse. What this means is that the model allocates to the client part of the responsibility for the quality of educational processes. It gives importance to the fact that clients/learners have to be aware of their own needs and preferences in order to enter into a high-quality learning opportunity created in collaboration between themselves and the provider. A precise exploration of the integration potential by the provider can influence the educational provision enormously. Furthermore, the interaction potential describes the client's abilities to contribute his or her part to a constructive negotiation process and to become part of a participative definition of educational quality. The client's background, former experiences, and abilities to express his or her needs are influential categories for this potential.

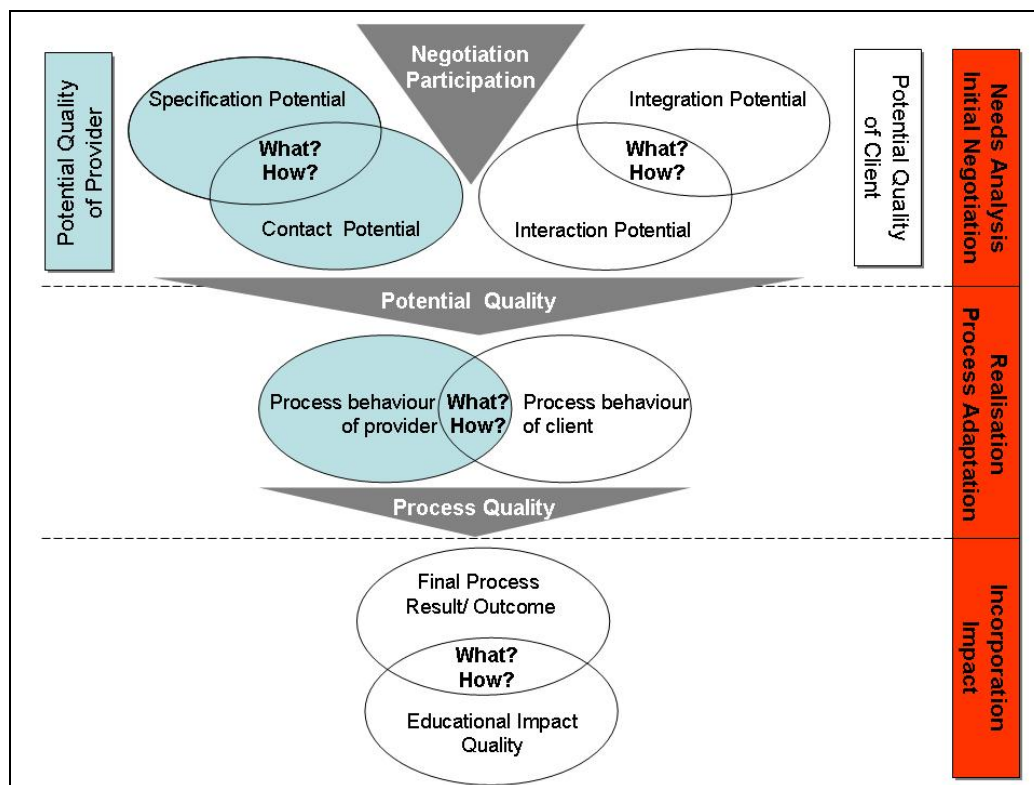


Figure 4. Participative model for quality development (adaptation of Meyer and Mattmüller, 1987)

Stakeholders who are involved in these processes need the capacity to evaluate and define the needs of all stakeholders involved in the educational scenario and negotiate among themselves to achieve a high-quality learning environment (Quality Analysis). Additionally, knowledge about the possibilities of quality development and about quality strategies or good practice examples could be of help in the needs analysis phase.

The needs analysis phase leads to a decision for a quality strategy. For this, Quality Knowledge is needed. If none of the available strategies meet the identified requirements, a new quality strategy has to be developed. For this, two competencies are especially important: quality knowledge and quality analysis. When it comes to

developing an individual strategy, the ability of quality innovation (i.e., creatively and innovatively developing a fitting quality strategy) gains importance.

Process quality/realisation and process adaptation phase

In the realisation phase, a quality strategy that corresponds to the analysed needs is implemented into an organisation and continuously adapted to the organisation’s specific needs. The process quality is the result of interaction between the clients and the learning environment. The model (fig. 4) shows that each partial quality is divided into two parts. This model relates back to the work of Grönroos (1984), who differentiates between “what” the client and the provider co-construct and “how” they co-construct it. An interesting notion of Grönroos’ concepts is the emphasis that, apart from the purely functional process of providing a service, for all partial qualities the emotional, that is, the human service quality, is an influential factor. However, this is difficult to conceptualize into an operational model. Also, Lethinen and Lethinen (1991) refer to these qualities and name them “physical quality” and “interactive quality.”

In the realisation phase, quality instruments and tools can be used. The usage of models and instruments for quality development tools such as checklists, process descriptions, and/or evaluation questionnaires, requires a high number of quality experiences. The adaptation of these instruments and models demands a capacity for innovation and modification and is conceptualized in the dimension of quality innovation. Critical analysis and assessment form an integral part of this phase. Quality analysis thus becomes important.

Outcome Quality/ Incorporation and Impact Phase

Quality development — in the end — is always directed toward the modification of the behaviour of individual actors of an organisation, its tutors or teachers, or the course authors, etc. The incorporation phase relates to the actual impact, that is, the outcome of quality development. In the quality model (fig. 4), the resulting quality represents the educational impact evoked through the process of co-construction of the educational opportunities. Meyer and Mattmüller (1987) subdivide this quality component into one part, which is immediately recognizable, and another part, which is the long-term impact quality. For educational processes this division into two types of results is important because often the long-term results are more valuable than the short-term effects (e.g., the competencies that can be used when the employee is back to his or her workplace).

This phase concentrates on the actual effect of quality strategies. “Incorporation” in this context means that the new values, norms, and concepts that are inherent in newly introduced quality concepts have to be incorporated by the actors who use them. They have to have an effect on the actors’ everyday professional behaviour. For example, it is not only important that an evaluation questionnaire has been selected and distributed, and that the feedback has been analysed, it is equally important that the results have an impact on the educational process. In the incorporation phase, therefore, we examine whether the changed processes and new values suggested through a new quality strategy are incorporated into the activity patterns of the stakeholders. Critical analysis skills and evaluation experiences are necessary for this phase. Quality Analysis is therefore crucial in this phase.

Table 2 gives an overview on the relevant questions that are addressed for each of the partial qualities.

Table 2: Description of partial qualities of the participatory model for quality development (adapted from Meyer and Mattmüller, 1987)

Potential Quality of Provider	Specification Potential	<ul style="list-style-type: none"> - Which learning opportunities and boundaries does the educational offer contain with regard to the individual situation and preference of the client? (Is it possible to choose time, place, teachers, learning groups, learning environments?) - How is the educational environment adapted to the individual characteristics and preferences of the client?
	Contact Potential	<ul style="list-style-type: none"> - How can clients specify their learning needs? (e-communication means, office hours, educational counselling offers, etc.) - How competent are the contact persons? (diagnostic abilities, flexibility, communicative competencies, etc.)
Potential Quality of Client	Integration Potential	<ul style="list-style-type: none"> - What are the expectations and needs of the client? - What is the client’s attitude and preference towards the educational experience? - What does the educational experience mean for the client?
		<ul style="list-style-type: none"> - How good is the client’s capacity to integrate/communicate his or her

	Interaction Potential	needs into the educational context? (communicative abilities, self-reflection processes, self-diagnostic abilities, etc.) - What is the client's situation and background? - Can the client enter into a beneficial educational process?
Process Quality	Process Behaviour of Provider	- How is the educational experience structured? - How is the educational environment realised? - Where are strengths and weaknesses in the educational provision?
	Process Behaviour of Client	- How can the client benefit from the provided educational opportunities? - Where are the client's strengths and weaknesses in the educational process? (learning problems, misunderstandings, etc.)
Final Process Result	Final Process Result	- Which procedures are used to determine the final process quality? - How are these procedures applied?
	Educational Impact	- What is the educational impact for the client (e.g., in the workplace)? - Is there guidance/tutoring provided even after the course has ended?

The questions reveal that all partial qualities require differentiated competencies in order to be realised. The quality of all phases is then the result of quality-competent behaviour. The presented quality model is of heuristic value. It combines the different partial qualities with the phases of introducing a quality strategy and helps to differentiate them from each other. The model, which is originally constructed for the field of service quality, has been adapted to the field of educational provision. This adaptation shows that it can combine the different concepts mentioned before: co-construction, participation, and quality literacy, within one model.

Conclusion

Quality development in e-learning aims to improve educational processes. These are the result of a co-production between learners and their learning environments, and in principle cannot be defined prescriptively. This means that in the end, the result of an educational process cannot directly be influenced and optimised like a production process (this relates to the technology deficit of education mentioned in the introduction). Quality strategies therefore cannot guarantee high-quality learning processes but should rather aim to professionalise the quality development process, both on the client's side and on the provider's side.

This paper emphasises this aspect and identifies a set of competencies that are relevant for such a professionalisation of quality development processes:

- a) **Quality knowledge:** This dimension addresses the "pure" knowledge of the possibilities of today's quality development and up-to-date quality strategies in e-learning and education.
- b) **Quality experience:** This dimension describes the ability to use quality strategies with a certain intention (e.g., to decrease the drop-out rate of a university program). It is based on the experiences that actors have with quality development and the application of quality strategies to educational scenarios.
- c) **Quality innovation:** This dimension relates to the ability to create and develop quality strategies and/or instruments for one's own purpose. It goes beyond the simple use of existing instruments and strategies.
- d) **Quality analysis:** Quality analysis relates to the ability to critically analyse the processes of quality development in light of one's own situation and to reflect upon one's own objectives and context.

The interactive nature of quality development is reflected in the presented quality model (see section 4), which subdivides quality into three partial qualities: the potential quality, the process quality, and the outcome quality. The potential quality of the provider and the client has to be realised through interaction and negotiation. Potentials are then turned into (educational) processes. The process quality in turn leads to results, and the outcome quality aims to have a long-term impact. This threefold structure is directly connected to a typical quality development process with a needs analysis phase, a realisation/adaptation phase, and an incorporation/impact phase. Quality literacy is suggested as a set of abilities that give specific support to all phases. In conclusion, we would like to stress that quality development runs the risk of remaining a purely technocratic process when it is not linked to a process of professionalisation of the stakeholders.

The quality model relates to theoretical work that has been done in the field of service quality and combines it with concepts of negotiation, participation, and co-production. However, a comprehensive empirical validation

of the described concepts has so far not been undertaken. Therefore we suggest developing empirical research questions in the following fields:

1. Exploration of suitable negotiation and participation methods to involve clients and providers in the development of quality strategies. Who can be involved into negotiation processes? What can be objects of negotiation? What are the quality standards in negotiation processes?
2. Exploration, validation, and formulation of the concept of quality literacy within the framework of total quality management concepts. Quality literacy has to be validated as a concept that enables stakeholders to formulate their own positions and to select and apply suitable quality strategies against the background of their own personal goals as well as their organisation's quality goals.

In an educational setting, quality literacy is a prerequisite for quality development for both the client and the provider. The described competencies allow clients and providers to act in a competent way in the field of quality development and to enter into a process of stimulating a quality culture with the aim of continuous improvement. Enhancing competence is a move toward professionalisation of the quality debate.

References

- Baacke, D. (1996). Gesamtkonzept Medienkompetenz. *Agenda*, 12–14.
- Bajjnath, N. & Singh, P. (2001). Quality assurance in open and distance learning. In N. Bajjnath, S. Maimela, P. Singh (Eds.), *Quality assurance in open and distance learning*, Roodepoort: University of South African and Technikon South Africa.
- Beck, U. (1986). *Risikogesellschaft: Auf dem Weg in eine andere Moderne*, Frankfurt a. Main: Suhrkamp.
- Berkel, I. (1998). *Die Rolle der Organisationsentwicklung im Dienstleistungsqualitätsmanagement: Dargestellt am Beispiel einer Kundenbefragung im Privatkundengeschäft*, Munich: Hampp, Mering.
- Boyce, M. E. (2003). Organizational Learning is Essential to Achieving and Sustaining Change in Higher Education. *Innovative Higher Education*, 28, 119–136.
- Brindley, J. E., Walti, C., & Zawaki-Richter, O. (2004). *Learner Support in Open, Distance and Online Learning Environments*, Oldenburg: BIS.
- Champy, J. (1995). *Reengineering Management: The mandate for new leadership*, London: HarperCollins.
- Donabedian, A. (1980). *Explorations in Quality Assessment and Monitoring*, Ann Arbor: Sage.
- Doppler, K., & Lauterburg, C. (2005). *Change Management: Den Unternehmenswandel gestalten*, Frankfurt a. Main: Campus.
- Ehlers, U.-D. (2004). *Qualität im E-Learning aus Lernalternsicht. Grundlagen, Empirie und Modellkonzeption subjektiver Qualität*, Wiesbaden: VS Verlag für Sozialwissenschaften.
- Ehlers, U.-D. (2005). A Participatory Approach to E-Learning-Quality: A new Perspective on the Quality Debate. *Journal for Lifelong Learning in Europe*. XI.
- European Universities Association (2006). Quality Culture in European Universities: A Bottom-up Approach. Report on the Three Rounds of the Quality Culture Project 2002–2006, Retrieved May 10, 2007, from http://www.eua.be/fileadmin/user_upload/files/EUA1_documents/Quality_Culture_2002_2003.1150459570109.pdf.
- Fink, L. D. (2003). *Creating Significant Learning Experiences*, San Francisco: Jossey-Bass.
- Freesen, J.W. (2002). Quality in Web-supported Learning. *Educational Technology*. 42 (1), 28–32.
- Friend-Pereira, J. C., Lutz, K. Heerens, N. (2002): *European Student Handbook on Quality Assurance in Higher Education 2002*, Retrieved May 10, 2007, from <http://www.esib.org/projects/qap/QAhandbook/QAhandbook.doc>.

- Grönroos, C. (1984). A service-oriented approach to marketing of services. *European Journal of Marketing*, 18 (4), 36-44.
- Grönroos, C. (1990). *Service Management and Marketing*, Lexington: Wiley.
- Gross, P., & Badura, B. (1977). Sozialpolitik und Soziale Dienste: Entwurf einer Theorie personenbezogener Dienstleistungen. In: Ferber, C. v., Kaufmann, F.-X. (Eds.), *Soziologie und Sozialpolitik*, Opladen: Westdeutscher, 361-385.
- Hall, G., & Hord, S. (2001). *Implementing Change: Patterns, Principles and Potholes*, Boston: Prentice Hall.
- Hiatt, J., & Creasey, T. J. (2003). *Change Management: The People Side of Change*, Loveland: Prosci.
- Horine, J., & Lindgren, C. (1995). Educational improvement using Deming's profound knowledge. *New Era in Education*, 76 (1), 6-10.
- Le Préau (2005). *Which quality model for e-learning*, Retrieved May 10, 2007, from <http://www.preau.ccip.fr>.
- Lethinen, U., & Lethinen, J.O. (1991). Two Approaches to Service Quality Dimensions. *The Service Industries Journal*, 11 (3), 287-303.
- Luhmann, N., & Schorr, K.E. (1982). *Zwischen Technologie und Selbstreferenz. Fragen an die Pädagogik*, Frankfurt a. Main: Suhrkamp.
- Martens, E., & Prosser, M. (1998). What constitutes high quality teaching and learning and how to assure it. *Quality Assurance in Education*, 6 (1), 28-36.
- Meyer, A., & Mattmüller, R. (1987). Qualität von Dienstleistungen. Entwurf eines praxisorientierten Qualitätsmodells. *Marketing ZFP*, 9 (3), 187-195.
- Moslehien, S. M. (2003). *A glance at postmodern pedagogy of mathematics: Philosophy of mathematics education*, Retrieved May 10, 2007, from <http://www.ex.ac.uk/~PERnest/pome17/contents.htm>.
- North, K. (1998). *Wissensorientierte Unternehmensführung, Wertschöpfung durch Wissen*, Wiesbaden, Gabler.
- North, K. (2005). *Kompetenzmanagement*. Wiesbaden: Gabler.
- Oelkers, J. (1982). Intention und Wirkung. In: Luhmann, N., Schorr, K.E. (Eds.), *Zwischen Technologie und Selbstreferenz. Fragen an die Pädagogik*, Frankfurt a. Main: Suhrkamp, 139-194.
- Pruitt, D.G., & Carnevale, P. J. (1993). *Negotiation in social conflict*, Belmont: Taylor & Francis.
- Quartapelle, A., & Larsen, G. (1996). Kundenzufriedenheit. Wie Kundenzufriedenheit im Dienstleistungsbereich die Rentabilität steigert. Berlin.
- Russel, T. L. (1999). *The No Significant Difference Phenomenon*, Retrieved May 10, 2007, from <http://teleducation.nb.ca/nosignificantdifference>.
- Ryle, G. (1949). *The concept of mind*, Chicago: University Of Chicago Press.
- Senge, P. (1990). *The Fifth Discipline: The Art & Practice of the Learning Organization*, New York: Currency.
- Seufert, S., & Euler, D. (2002). *Virtuelle Lerngemeinschaften: Konzept und Potenziale für die Aus- und Weiterbildung*, Bonn: Ergebnisbericht des Bundesinstituts für Berufsbildung (BIBB).
- Taylor, M. (2004). Generation NeXt Comes to College. *A Collection of Papers on Student and Institutional Improvement*, 2, 19-23.
- Weinert, F. E. (1999). *Konzepte der Kompetenz*, Paris: OECD.
- Wildt, J., (2006). Kompetenzen als Learning Outcomes. *Journal Hochschuldidaktik*, 17 (1), 6-9.