

# Distance Learning and E-learning Quality for SMEs – State of the Art<sup>2</sup><sub>[1]</sub>

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## Introduction

SMEs represent more than 99 percent of EU companies before the inclusion of the new member states. The expansion of EU has increased rather than decreased the proportion of SMEs and also increased the need for education and training of European SME employees. Less than 25 percent of SME employees participate in vocational training courses, and less than 60 percent of employers provide any type of training for their staff.

The European Council held in Lisbon in 2000 decided on the objective that by 2010 the EU should “... become the most competitive and dynamic knowledge-based economy in the world...” Reaching this goal implies a challenging programme for modernisation, not least education and training systems. The transformation of European education and vocational training systems involves both the development of e-learning as a means to increase quality of learning as well as a need to increase the quality of e-learning itself.

It is an agreed belief in European policy that to reach the ambitious goal of the Lisbon strategy there is a need to actively support development and adoption of e-learning throughout Europe, at all levels of education and training for business and industry, not least among SMEs.

There is no doubt that online distance learning and e-learning can be a good alternative for competence development of SME employees. E-learning of high quality can be efficient and cost-effective. E-learning allows for just-in-time updating as it can be organised for anyone, anywhere and at any time. E-learning may also be cost-effective because the learner does not have to leave work to participate in courses that require presence and often imply both travel and accommodation expenses. The training can be tailored to the individual learner's exact needs, learning style and time available. E-learning may require a minimum of ICT-literacy, but when participating in e-learning, the learner also develops ICT skills preparing for efficient work and future career development in the knowledge society.

It seems today that most employers and managers, not least in SMEs, do not realize the potential of e-learning. Many managers know little about e-learning and quality of e-learning and often require strong evidence that e-learning works. Today, there is no doubt that e-learning has demonstrated its potential for high-quality and cost-effective learning.

The purpose of this book is to demonstrate that e-learning works and that e-learning quality measures up well against other types of education, teaching and learning forms.

## E-Learning – what is it?

According to the European Commission (2001) and the *The eLearning Action Plan* e-learning is defined as: “*The use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration.*”

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<sup>2</sup> An extended version of this article is available at:  
[www.nettskolen.com/in\\_english/elq-sme/ELQ-SMEStateofArt.pdf](http://www.nettskolen.com/in_english/elq-sme/ELQ-SMEStateofArt.pdf)

This expression actually indicates a belief that e-learning does **improve learning through the use of new multimedia technologies and the Internet** and that it **facilitates access to resources and services** and also implies **remote exchanges and collaboration**.

In principle e-learning includes both solutions where the learner works individually on a computer with an interactive learning programme often based on theory and traditions from programmed instruction and/or computer based (or supported) teaching (CBT) and solutions involving tutor support and learner services organised by an educational organisation. The second type of e-learning solutions has developed from distance teaching and is often described as online education. Online learning can be organised in different ways, from programmes that emphasise individual flexibility on one side of a continuum to programmes that emphasise group work and collaborative learning.

## Quality in learning

*Quality* is most often defined as *'fitness for purpose'* related to the needs of the user/customer (Juran 1988), which indicates that quality depends upon a subject's view of what is the purpose of that phenomenon. In education, the customer is not always easily identified. In public education, the government pays, the immediate user is the student; secondary users are employers (e.g. SMEs) etc. Quality, thus, is a value judgement interpreted by different stakeholders; government, teachers, administrators, students, employers etc. On the other hand, to assure and assess quality we must have a clear notion of what it is. For an SME, quality would mean that the educational product fits the purpose of the company, i.e. competence development of its employees, and that the employees as learners experience the learning process as motivating, and that it leads to the expected learning results. Further, learning outcomes must be regarded as cost-efficient relative to other types of training and also as giving sufficient return on investment, i.e. that the company and the employee are better off after the learning, taking financial costs and time invested into consideration.

## Quality in e-learning

As mentioned, e-learning has developed from two main origins, programmed computer-based/supported learning and distance education. Both types of education have a long tradition in securing quality through different mechanisms of quality assurance, both through testing of educational products during development and field testing, and evaluation of the product in the first phase of its life and in ordinary use.

Distance education has since its very start always represented an alternative to traditional forms of education and training, and therefore has had to battle for recognition and consequently developed procedures for demonstrating quality early on. Distance education quality has in many countries been assured through specific legislation, through state control, voluntary accreditation, agreed national or international quality standards, and not least through heavy emphasis on research and evaluation directly related to practice.

The need for quality assessment has increased with the introduction of e-learning. As Greville Rumble (researcher at the British Open University) (2000) states: *"one of the problems facing distance education at this time is a concern that new providers are more interested in profit than quality service ... successful operators will need to adopt service management approaches to deliver a quality product"*.

Questions and challenges concerning quality management and quality assurance in education in general and specifically in distance education and e-learning have been focused on both by international organisations, national authorities, institutions and consumers during the last 10 to 15 years. A magnitude of quality approaches have been developed based on different purposes

and intentions. Quality systems may be developed and used for international comparisons, national accreditation, and internal institutional quality assurance and quality management, for information to users and for consumer protection. Wirth (2005) has made an attempt to systematize quality approaches in e-learning:

### **1. Approaches to Quality (Management) Planning**

There are three main organisations that drive the development of quality management approaches, namely the [European Foundation for Quality Management \(EFQM\)](#), [International Organisation for Standardisation \(ISO\)](#) and [Deutsche Institute für Normung e. V. \(DIN\)](#). These organisations have reacted to controversies concerning transferring quality management models to the educational sector, and developed approaches that focus on education and e-learning. These systems are used to secure quality in e-learning materials and e-learning learning processes and to provide confidence of the customer that the products match agreed standards. The European Association for Distance Learning (EADL 2003), for instance, transferred the EFQM Excellence Model to distance education when developing their Quality Guide for distance education.

### **2. Best and good practise, examples/guidelines, benchmarking**

These approaches focus on the realisation of e-learning solutions using continuous assessment against best and good practise examples known as benchmarking. A large variety of recommendations, guidelines and criteria catalogues can be found. One example is the [French Code of Practice in E-Learning](#) developed by Association Française de Normalisation (AFNOR). The [Quality Standards](#) of the Norwegian Association for Distance and Flexible Education (NADE) also belong to this category. Another example is the [Institute for IT training at the University of Warwick](#) that for institutional purposes has developed a number of “best practice” documents, such as [Code of Practice for E-learning Providers](#) and even a [Charter for e-learners](#) to inform learners of what to require from an e-learning course.

### **3. Quality certification and accreditation at different levels**

These are formal quality assessments executed by external accreditation or certification bodies as discussed above specifically in connection with European higher education. Valid evaluation methods and clear quality criteria indicators are crucial elements. Approaches in this category can be divided in three subgroups:

**Accreditation and certification mainly of institutions** for instance the [Distance Education and Training Council](#) in the US (DETC) with its [accreditation system](#). Another example is the [British Quality Assurance Agency for Higher Education \(QAA\)](#) with the general Code of Practice for Higher Education and the Guidelines on Quality Assurance of Distance Learning (QAA 1999).

**Accreditation and certification of management-oriented education**, for instance The [European Foundation for Management Development \(EFMD\)](#): The European Quality Improvement System (EQUIS), which is claimed to be the leading international accreditation system for business schools. EFMD has also developed a specific scheme for e-learning accreditation, [EFMD CEL – eLearning](#).

**Accreditation and certification of e-learning products and services**, for instance [eQCheck](#) by the private EQCHECK Company with its branch in Europe (UK) offering accreditation of e-learning products based on the Canadian Recommended eLearning Guidelines (Future Ed. 2002).

### **4. Quality competition and Awards**

These approaches do not evaluate products according to defined criteria, but compare solutions according to competitiveness or other defined aspects of a product. The competitive ranking is supposed to effect the development of high quality services and products. These approaches are intended to stimulate top achievements rather than evaluate against minimum criteria, as is normally the case with certification and accreditation approaches. A number of IT, computer and e-learning organisations award prizes for outstanding e-learning solutions, for instance the [European eLearning Award](#) and many others award prizes nationally and internationally.

Another way of characterizing quality approaches may be to view them mainly as either *input-oriented* models focusing on the resources utilized for achieving objectives, *output-oriented* models that examine ex-post-facto to what extent goals are met, *process-oriented* models on the potentials within the organisational structure of the educational institution, and *participant-protective and demand-oriented* models that provide results of product tests or criteria for demand-related evaluation of products on the market (Reglin 2006).

There can be no doubt that for an SME planning to use e-learning for competence development, it is important that the supplying institution can prove credibility through reference to its quality management and/or quality assurance system. However, the most important quality indicator is whether the e-learning programme is cost-effective and leads to the defined competencies of the learner. This means that the supplier should be able to demonstrate that the product is tested and evaluated, that it has proved to lead to the promised learning result and also results in the expected return on investment of time and money.

### E-learning quality as a subjective characteristic related to the learner's needs

Ehlers (2004) argues that of all the dimensions and aspects of e-learning quality the perspective of the learner is probably the most important. Education differs from other products in that learning is not a product that the consumer buys, "...learning rather constitutes a process that they (the learners) have to carry out by themselves." This means that a customer, in our case an SME, may buy an e-learning product for its employees, but the SME cannot buy the competence or the desired learning outcome. Learning is the result of the learner's (often hard) work, and learning is dependent on the motivation of the learner and the learner's ability and willingness to study and carry out the learning activities supported by the e-learning programme. Thus, the learner's needs and learning style greatly influence perceived and experienced quality of an e-learning programme. Learners have different preferences, and the main question becomes which quality aspects, dimensions and criteria are most important to the individual learner. According to Ehlers (ibid.) e-learners' subjective quality requirements can be sorted into seven fields of quality, i.e. different learners have different preferences of what constitutes good quality within each field:

**Tutor support:** Includes two-way communication and interaction between the learner and the tutor, the degree of active moderation of the learning process by the tutor, the tutor's relative emphasis on learner-oriented or content-related communication, the degree of individualized interaction related to the individual learner's support needs and interests, and the degree of attention to the individual learner's personal development or to the stated course goals. Learners also differ in their preference for traditional communication media (telephone, fax, mail), synchronous communication media (video/audio conferencing, chat) or asynchronous media (e-mail, discussion forums).

**Cooperation and communication in the course:** The online e-learning course can focus on social interaction through discussions, or focus on discourse of controversial topics and knowledge creation in argumentative and collaborative settings.

**Technology:** The e-learning platform may have the possibility of adapting to the users' settings and provide the possibility of starting where the user finished his last learning period. The platform may have the possibility of synchronous communication and the content may be available in different formats and the learner may be able to save course materials on his/her own computer.

**Costs – expectations – value:** The cost and effort the learner has to invest in the course relative to benefits and outcomes are important. Expectations towards online learning may be that it is flexible in time and individualized in course structure regarding content and support. Non-economic costs relate to the effort it takes to learn and to concentrate on the course within an individualized learning scenario. Financial costs of taking the course might be seen as the most important quality criterion. The user might be interested in the course primarily because of the technology – online learning and the use of the Internet.

**Information transparency:** Counselling and advice before entering the course can be an important dimension of quality. It may also be of importance to learners to be able to access information about the course, the tutors and the institution that provides the course. Another important dimension for learners is access to detailed information about the course.

**Course structure:** This field contains the learner's requirements concerning the structure of an e-learning course. Some learners see presence (face-to-face) periods (blended learning) as important, while other learners prefer pure online learning. The field includes the possibility of presence introduction to the course and the possibility of taking exams and tests during presence phases.

**Didactics:** This field contains dimensions such as preference for access to background materials related to the e-learning course content, and also the use of multi media and several types of enrichment media. Other quality dimensions are whether the course is structured in a goal-oriented way, whether it includes support in gaining learning literacy (learning to learn) and life-long learning skills, whether tests and exams are integrated in the learning materials and whether the learning tasks are designed to fit the individual learner's needs.

The main point is that the individual learner will have personal preferences that decide whether the e-learning course actually has the expected quality. Of the above fields, it seems that a large majority of learners agree that tutor support is very important for learners in general regardless of their other preferences. The importance of tutor support was also demonstrated in an empirical study among e-learners by Rekkedal & Qvist-Eriksen (2004), where the following aspects of e-learning quality were examined. The aspects are presented in order from pre-course information, a guidance and counselling phase, through the introduction phase, learning phase and examination/completion phase. The numbers in parentheses represent the relative importance of the aspect for e-learning quality from 1 (most important) to 17 (least important).

Support element	Relative importance for e-learning quality
Feedback on assignments submitted	1
Tutor access	2
Possibility to contact tutors via e-mail telephone etc.	3
Information regarding course or module content	4
Information regarding course availability	5
Information regarding the programme to which the course belongs	6
Possibility to contact the institution by phone, e-mail etc.	6
Online tutorials	8
Information regarding pricing	9
Access to real-time technical support services	10
Information regarding online learning techniques	11
Support regarding registration issues	12
Advice on accreditation, certification and further study	13
Information on the web on registration, access etc.	14
Discussion forums/bulletin boards	15
Information relating to course costs, grants etc.	16
Possibility to contact other students via e-mail, telephone etc.	17

**Table 1. E-learning students' rating of the importance of support elements in the e-learning course.**

As shown in the table above, the three most important quality aspects relate to individual access, contact and feedback from the e-learning course tutor. The next three most important quality aspects relate to information and guidance before starting on the course.

From the understanding that e-learning quality is related to individual preferences, one might conclude that the most important quality characteristic of an e-learning course is that the course is designed to adapt to the needs and preferences of the individual learner. According to the research of Ehlers referred to above, e-learners can be grouped into four different target groups that differ in their demands for communication and tutor support as well as in interest in group activities and social contacts in the e-learning course. These groups are:

- The individualist: Prefers individualistic learning scenarios and self-directed learning, is content focused and not interested in presence courses, communication and interaction.
- The pragmatic: Oriented towards personal needs, information and advice and tutor support on factual matters, non-financial costs important.
- The result-oriented: Learning integrated with work, oriented towards instrumental purposes, learning and media/technology literacy, not interested in presence courses.
- The avant-gardist: Interaction-oriented/communication, learner oriented tutor support, virtual learning groups, media and technology vanguard and interested in rich didactic solutions.

## Conclusions – e-learning quality for SMEs

To reach the goal of the Lisbon strategy of Europe, to be the most competitive knowledge based economy in the world, a major transformation of European educational and training

systems in all areas and levels has to take place. In business and industry it is a necessity that small and medium-sized enterprises are not lagging behind in competence development of their employees. While larger companies often have the resources to develop and/or purchase e-learning solutions for their employees, this is out of reach for most SMEs. It also seems that many SME employers and managers are not sufficiently informed about availability, possibilities, quality and cost-efficiency of e-learning. It is a fact that e-learning may be more efficient, cheaper and more practical than many presence courses for competence development, in-service training and life-long learning for employees in SMEs. Most SMEs will have the possibility of finding e-learning solutions on the market that may suit their needs and requirements. SMEs are often members of a national or international organisation together with other companies having the same or similar training needs. In such cases it may be possible to cooperate within a branch organisation in developing e-learning courses for use by its members. It is important that SMEs, managers and employees are informed about the possibilities of e-learning so that they can make decisions about whether e-learning may suit their needs, and also that they are able to judge quality when searching for e-learning solutions.

Important criteria for judging the quality of e-learning programmes are:

**1. Credibility of the institution offering e-learning:** Is the institution's reputation acceptable; is the institution, the e-learning programme and/or the course accredited according to national standards?

**2. Quality assurance or quality management systems:** Does the institution have acceptable formal systems for quality management and for quality control of the e-learning courses?

**3. Pre-enrolment information and guidance:** Is the information about the e-learning courses sufficient for deciding whether the course is suited to the needs of the company and needs of the learner?

**4. Course costs:** Is the cost of the course, including price and non-economic costs in accordance with expected results and benefits for the learner and the company?

**5. Support for the e-learner:** Does the course include subject related, social and/or technical learner support? Is the support provided sufficient for satisfying learners' needs and for reaching the course objectives?

**6. Individual preferences:** Is the e-learning course designed to allow for different learner preferences concerning structure, communication and learning styles?

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