

eLearning Self-Assessment Model (e-LSA)

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Abstract

An eLearning self-assessment model (e-LSA) was developed to evaluate the quality of eLearning in an organization based on Total Quality Management (TQM) and the European Foundation for Quality Management (EFQM) excellence model. The e-LSA can be used by management team and trainers for self-assessment. An e-LSA-Guide model was also developed to help the organizers of evaluation process to select the relevant criteria and statements to be included in their self-assessment tool.

1. Introduction

Quality of learning is a major concern for students, their parents, prospective employer, government, and society, in addition to the academic administrators and teachers. Quality is a condition for the success of products in general and quality becomes essential in the field of education in particular. Qualitative training makes professionals capable to function as competent professionals having good knowledge and at the same time living as good human beings in social life. Learning will contribute to sustainable social and changing economic development [9-10]. Quality of education requires three basic conditions: Ensure real growth in personality and behaviour of the learner, alignment with the needs of society and professional environment, and the availability of qualitative resources and professional management skills of the learning institution.

ELearning is a good opportunity for companies to up-skill their employees to meet the demands of lifelong learning. However to guarantee successful and a high quality learning results and to improve learning outcomes, the eLearning process should be continuously evaluated. Guaranteeing the quality of eLearning process amplifies the need for an effective measurement model that takes into consideration all eLearning process stakeholders' expectations. A measurement instrument is needed to evaluate and improve eLearning quality in organizations.

How to provide these conditions of quality in education and training, and how to control the quality is a management issue of each organisation responsible for the organisation of learning and also of eLearning. A high qualitative educational process is one of its key success factors. Continuous evaluation of the enabling organisation of courses, the learning processes and of using a learning quality system is a necessity to improve the quality of education.

2. Quality of Learning

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How to provide these conditions of quality in education and training, and how to control the quality is a management issue of each body responsible for the organisation of learning and eLearning. A high quality of educational process becomes a key success factor. Continuous evaluation of the enabling organisation of courses, learning processes and using a learning quality system is a necessity to improve the quality of education (Yarmohammadian et al 2011). In higher educational institutes the quality of learning is not only the students' major concern, but their parents, prospective employer, government, and society, in addition to the academic administrators and teachers (Dragut, 2011).

3. Total Quality Management (TQM), excellence and the EFQM excellence model

TQM is the concept of continuous evaluation and improvement of processes, the resulting products or services, but also the people and other resources, and last but not least management (www.benvic.odl.org). TQM has been a major force that has influenced business operations and organizational management since the 1970s (Prenderrgast, et al, 2001). The main characteristic of TQM is the coverage of all enterprise wide activities and all requirements of all stakeholders. TQM emphasizes customer focus, continuous improvement, employee empowerment, and data driven decision-making (Schreurs, et al, 2008).

Regardless of sector, size, structure or maturity, to be successful, organisations need to establish an appropriate management framework. The European Foundation for Quality Management (EFQM) Excellence Model is a practical tool to guide organisations in their evolution to TQM by helping them understand the gaps by measuring where they are on the path to Excellence, and to guide them afterwards to initiate remedial and stimulating actions.

The fundamental concepts or characteristics of excellence (Schreurs, et al, 2008) are: results orientation, customer focus, leadership and constancy of purpose, management by processes and facts, people development and involvement, continuous learning, innovation and improvement, partnership development, and public responsibility.

The EFQM model (Assen, et al, 2009) is based on those fundamental concepts or characteristics of excellence, www.efqm.org. The EFQM Excellence Model was introduced at the beginning of 1992 as the framework for assessing organisations for the European Quality Award. It is now the most widely used in organisational framework in Europe and it has become the basis for the majority of national and regional Quality Awards. This model is a non-prescriptive framework which recognizes that there are many approaches to achieving sustainable excellence. It can be used as a self-evaluation tool for organisations, large and small, public and private sector. It can also be used as a benchmarking tool and can be the case for achieving a quality certificate (Nabitz, et al, 2000).

The EFQM Excellence Model is a framework based on 9 criteria. Five of these are 'Enablers' and four are 'Results'. The 'Enablers' criteria cover what an organisation does. The 'Results' criteria cover what an organisation achieves. 'Results' are caused by 'Enablers' and 'Enablers' are improved using feedback from 'Results'.

The Model's 9 boxes represent the criteria against which to assess an organization's progress towards Excellence (www.efqm.org). Following are the definitions of the nine criteria, explaining their high level meaning.

1. Leadership: is even as important as products and processes are. Management can motivate and stimulate the organizations on their way to continuous improvement.

2. Policy and Strategy: the EFQM is concerned not just with product and service quality but is concerning itself with organizational policy and strategy. Policy deployment is necessary to ensure that the strategy is formulated and is known all over the organization.
3. People: EFQM covers aspects of effective human resource development, teamwork, empowerment, rewards and career planning.
4. Partnership and Resources: suppliers and customers are partners with emphasis on mutual beneficial relationships. Development and use of all kind of resources is a main point for attention, and have to be maintained for capability.
5. Processes: the focus of EFQM is on the key processes necessary to realize the organization's strategy.
6. Customer Acceptance and Appreciation: taking care for customer satisfaction will keep them on board and will also attract new customers.
7. Functioning of People in the Organization: the quality of the functioning of the people will result from their feeling of being responsible and of having high value for the organization.
8. Position in the Society: the company has to establish its social mission and its impact on wider society by being involved in community activities.
9. Company results: quality of all enablers will guarantee qualitative results, and will deliver a successful organization having good financial company results.

To develop the high level meaning further each criterion is supported by a number of sub-criteria parts. Sub-criteria parts pose a number of questions that should be considered in the course of an assessment.

The EFQM model has been adopted here as a self assessment instrument to be applied in the evaluation of the e-learning services.

In most EFQM reference work the following definition for self assessment can be found:

“Self-assessment is a comprehensive, systematic and regular review by an organization of its activities and results referenced against the EFQM Excellence Model. The self-assessment process allows the organization to discern clearly its strengths and areas in which improvements can be made and culminates in planned improvement actions that are then monitored for progress.”

Although more types of self assessment methods do exist, the questionnaire approach is one of the least resources intensive techniques and can be completed fast. It is an excellent method for gathering information about the perceptions of people within an organization. As questioning form, some organizations are using simple yes/no questions; others are using slightly more sophisticated versions including a rating scale.

Here is chosen for the combination of an evaluation and an expression of relevance /importance of the statements formulated for all quality criteria included in the 9 main criteria model (Schreurs, 2006). It means that for each statement the respondent will have to answer on 3 questions: Is this criterion relevant? What is the quality of this criterion? And is an improvement needed yes or no? The evaluation measures will be weighted with the relevance to determine the quality value.

4. Quality Assurance and Self-Assessment in Education

In universities and higher educational institutes, quality assurance (QA) is a part of the Bologna agenda. They are expected to reflect on many issues, particularly on the teaching and learning processes, and on the roles and responsibilities of management, teachers and students. Bologna formulated the enhancement of the quality as a main goal. It implies that the institutions have to implement procedures for quality assurance. In Bologna, we also find guidelines for the implementation of ICT enhanced learning and e-learning. Al-Fadhi and

Khalfan (Al-Fadhi, et al 2008) underline the quality aspects of ICT enhanced learning environments. Also companies are becoming convinced that eLearning or blended learning programs will stand for qualitative learning. They also create added value by decreasing the costs of company-wide training programs and by increasing the flexibility of the organisation of learning programs. But organization of eLearning also requires the appropriate infrastructure and policies to achieve the required quality for the program. E-learning needs considerable human, financial and technological resources.

Quality assurance is a must and it starts with measuring the quality level. Often quality of the e-learning/e-training organization has been measured using indicators focusing on the technological aspect of the e learning, being a limited view on quality. Fang Zhao suggested a framework providing some aspects of the quality of eLearning (Ginns, et al 2009). It includes a.o. course effectiveness, adequacy of access in terms of technological infrastructure, student satisfaction, the interaction with the teacher, educational satisfaction of teaching staff and support services.

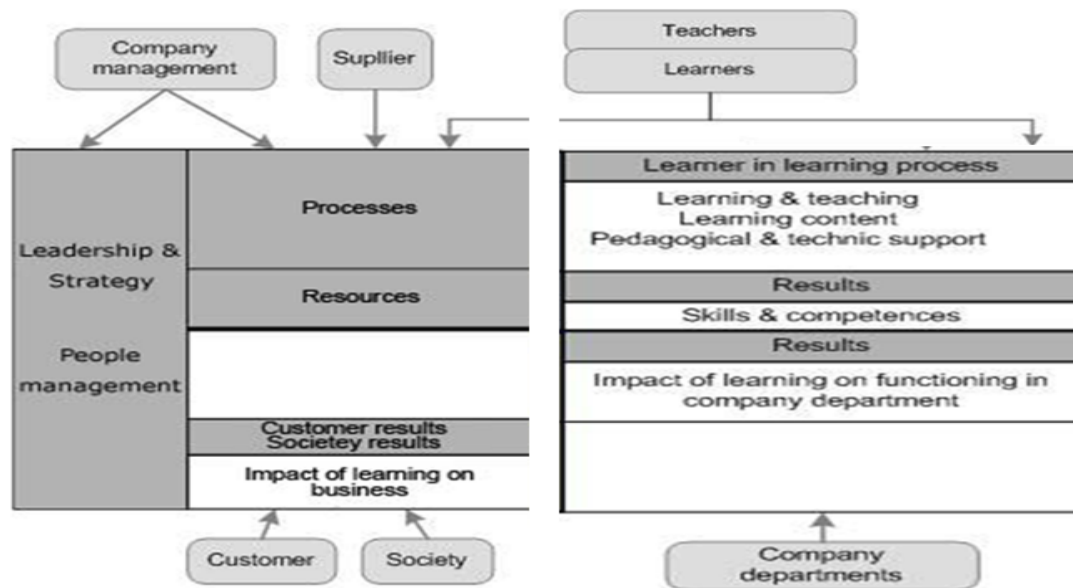
In a quality assurance model, the learner can play the role of evaluator about the organisation and the process of learning. Teachers and tutors are responsible for the learning content and the learning process. Moreover, the management of the learning centre or institute is responsible for the organisation of the process, for all resources, including people and learning infrastructure. A quality assurance system will have to include a measurement system covering all the relevant quality criteria. The EFQM model can be used to define the quality criteria (Hides, et al 2004) (Schreurs et al, 2007).

In applying the EFQM model in the learning process, a translation of the key terms was set forward. The “people” in the model comprise learners and teachers/tutors. Both are responsible for the learning process and for the overall attainment. In a university or higher educational institute the customers are the learners, the parents, the future professional environment and some representatives of the community. In an eLearning services company, the customers are learners and the management of their companies. In a learning services department of a company the customers are the learners and the management of the other departments.

Learners have a dual role as clients of the educational system and as people while contributing to the life of the educational institute and to the learning process. The government of the country and the management of the educational institute and other elected members of organising and controlling organisations cannot be seen as customers /clients, because they have (overall) responsibility for the quality of education offered by the educational institute, devolving operational control to the management of the educational institute and the administration. The initiative to organize the process of measuring and of assessing the quality level can come from the teacher/ trainer and/or from the tutor, but also from management responsible for the learning function of the organization.

The main assessors were identified and presented in the learning self-assessment framework Fig. (1). The learning department is responsible for the organization of the eLearning activities. All stakeholders request some services from the learning department. To become excellent, the learning department has to balance and satisfy the needs of all relevant stakeholders. The stakeholders are put around the frame. Their requirements are linked with the EFQM criterion parts.

Fig. (1): Learning Self-Assessment Framework.



- Leadership, policy and strategy: Company management and the learning department have to take responsibility for quality assessment on these criteria. Several stakeholders can participate in the evaluation activity. The learner can partly take up the role of evaluator. The assessment of the quality of eLearning will be done by the internal stakeholders of the eLearning activity of the company: Company management and the learning department
- The resources especially the learning system: learning department and learner
- The resources and the processes and all aspects of the learning process: the learner
- The process of development of eLearning solution: learning services department
- Results of learning: company management and other company departments set forward the goals about skill level of their people and so the objectives of the courses about what have to be learnt have been formulated
- People management: Company management has to manage human aspects in the organization including training them on the job but also training them to function as team member in the organization.

However the impact of learning can best be evaluated by company management and the company departments to which the learners are belonging. But in most cases the evaluation will be limited to the learners assessment and so the EFQM model will be limited to a subset of criteria, namely those that can be measured and evaluated by the learner.

Most of the criteria we identified are on the enabling side of the model (Hernard et al 2008 and Tsai, 2002).

5. e-learning self assessment model and system e-LSA.

An eLearning self-assessment model e-LSA has been developed, also based on Benvic (www.businessballs.com).

The enabling main criteria and sub-criteria are structured in 5 main criteria (MC).

Fig. (2): eLearning self-assessment model (e-LSA)

- MC1: Management, process, and development of learning services
 - C1.1: Planning and development of learning courses
 - C1.2: Quality process of learning systems and courses
 - C1.3: Finance and resources
- MC2: Management of people
 - C2.1: Teaching staff
 - C2.2: Learners
- MC3: Enabling learning resources
 - C3.1: Information on available learning materials
 - C3.2: Learning systems and tools
 - C3.3: User infrastructure
 - C3.4: Learning materials
- MC4: Enabling learning processes
 - C4.1: Organisation of the learning service
 - C4.2: ELearning activities
 - C4.3: ICT enhanced learning activities
 - C4.4: Learner support
 - C4.5: Assessment of learners
- MC5: Learning results
 - C5.1: Learners knowledge

A generic set of statements/ questions have been developed covering all the subcriteria. Management or teachers organizing the assessment will select a set of main criteria, criteria and questions to create their own questionnaire.

The management related criteria (MC1 and MC2) can be evaluated by those stakeholders having responsibility in the organisation of the learning services.

The learners will assess the MC3, MC4 and MC5. They will have to complete the questionnaire at the end of their course.

The e-LSA system has an interface for the developer of a questionnaire as well as for the learner to complete the questionnaire.

The system creates management reports to identify the strong and weak functioning subcriteria. In a detailed table on question level the reason for that weak result can be identified.

6. e-LSA Guide

In order to guide the organizers of self assessment by the learners, in selecting the criteria and the statements and so customize the questionnaire, a two-dimensional guidance model “e-LSA-Guide” is developed.

A questionnaire will have to fit the organised learning activities. The guidance is based on individual online learning (1st column) that can be extended with classromm activites (column 2) and with collaborative learning activities (column 3). Additionally support (column 4) and testing activities (column 5) can be included.

The second dimension the focus is on the type of services that has to be evaluated. Is it about the organization, or about the learning or about the development or acquisition of the learning system and courses?

Fig (3): e-LSA guide

criteria	eLearning activity					e-learning services		
	Individual eLearning	+ Face to face (Blended Learning)	+ Collaborative learning	+ support	+ evaluation	Organization aspects	Teaching /learning aspects	Designing & development systems & courses
MC3: Enabling learning resources								
3.1: Information on available learning materials	x					X	X	
17. Availability of learning opportunities								
18. Course prospectus								
19. Information on the learning provider								
3.2: Learning systems and tools						X	X	X
20. ICT and the learning system	X							
21. System functions to facilitate learning activities	X							
22. The physical learning environment for online sessions		X						
23. Accessibility	X							
24. Maintenance of facilities	X							
25. E-library	X							
26. Mobile learning platform	X							
3.3: User infrastructure						X	X	
27. Connection and ICT facilities in classroom		X						
28. Connection and ICT facilities at home	X							
29. Mobile phone usage	X							
3.4: Learning materials							X	
30. Availability	X							
31. Learning Content	X							
MC4: Enabling learning processes								
4.1: Organisation of the learning service						X	X	
32. Guidance in the choice and selection of your course	X							
33. Registration process	X							
34. Welcome		X						
35. Organisation of services and administration	X							

criteria	eLearning activity					e-learning services		
	Individual eLearning	+ Face to face (Blended Learning)	+ Collaborative learning	+ support	+ evaluation	Organization aspects	Teaching /learning aspects	Designing & development systems courses
4.2: ELearning activities							X	
36. Course progression	X							
37. Teaching approach/Course design for individual learning	X							
38. Personalising the learner's e-learning course	X							
39. Personalising learning	X							
40. Integration of face to face learning with individual e-learning		X						
41. Organisation of group activity			X					
42. Integration of collaborative learning with self study			X					
43. Use of learning content	X							
44. Mobile learning	X							
4.3: ICT enhanced learning activities							X	
45. Using Tablet-PC in classroom teaching		X						
4.4: Learner support							X	
46. ICT Support in learning room				X				
47. Online learning support				X				
48. Group learning support				X				
4.5: Assessment of learners							X	
49. Assessment process/concept					X			
50. Assessment organisation					X			
51. Other areas of assessment					X			
MC5: Learning results						X	X	
5.1: learners knowledge								
52. Increasing of learners' knowledge	X							
53. Alignment of learned knowledge with workplace requirements	X							
54. Application of learned knowledge	X							
55. Completion of the course	X							

7. KBC Case : application of e-LSA.

KBC is a Belgian bank and insurances company which is becoming a global player in the Banking and Insurance sector. Its core markets are in Europe: Belgium, Czech Republic, Hungary, Poland, Slovakia and Bulgaria.

Training of their employees is one of the important challenges they have to deal with. Training@KBC is responsible for training staff of the Group.

KBC develops its own tools for eLearning and make use of different information elements like: eye catchers, symbols, photos, and drawings, content buttons, schemes, screenshots, hyperlinks, demo's, animations, questions and tests, etc. They experienced some advantages in comparison with classroom learning as they can focus on creating a task oriented solutions. But this is also a very time consuming and expensive building process.

At their e-academy, KBC offers a new set of more than two thousand eight hundred titles in ten knowledge areas. They are available twenty-four hours a day, seven days a week, at work

or at home. But still not all people of KBC make use of them. The implementation of eLearning is not going the way the KBC management has hoped. KBC would like to know the reason for the limited use and what they can do to convince the employees to use eLearning. In a first research KBC wants to measure the quality of these eLearning courses by questioning the staff members that have already taken courses. A survey was developed, including the relevant indicators from e-LSA using the e-LSA guide.

Fug.(4): Quality Indicators KBC

Learning Resources	
1 - Information on available learning opportunities	
1 - Availability of learning opportunities	
2 - Course prospectus	
3 - Information on the learning provider	
4 - ICT and the learning system	
3 - The online learning environment	
6 - The physical learning environment for online sessions.	
5 - Learning materials	
12 - Availability	
13 - Learning content	
Learning Processes	
6 - Organisation of services	
14 - Guidance in the choice and selection of your course	
15 - Registration process	
16 - Welcome	
17 - Organisation services and administration	
7 - ELearning activities	
18 - Course progression	
19 - Teaching approach/Course design	
24 - Use of learning content	
8 - Learner Support	
25 - ICT Support	
9 - Assessment of learner's knowledge	
29 - Assessment organisation	
The Learning Results	
10 - Knowledge Increase	
31 - Knowledge level on finishing the course	
11 - Using what you have learned	
32 - Using skills learned on the course	

Conclusions of the KBC research:

The biggest improvement is needed in the part of learning process (64%), and then in the learning results (50%). Improvement of the learning process means that the bank should focus more on methods of teaching. Also the knowledge and skills gained after finishing the course are not satisfying and useful enough for learners in their future career. On the other hand the learning resources have been evaluated as being well prepared. 71% of people evaluated the provided materials and resources positive.

2 critical questions/ statements were identified:

- 'Suitable area is set aside for self paced learning in the company'. 95,24% of learners answered the question and 55% of them who are asking for improvement claimed that the issue is very important for them.

- 'Sufficient time is available for eLearning during office'. For this question we found 94,29% of learners answering and 49% of them who are asking for improvement claimed that the issue is very important for them.

Many people want to attend to eLearning courses during the working hours. Unhappily, very often there is no opportunity to do it simply because of lack of available time. Each of learners has his/her own pace of working and gaining knowledge, so it is not possible to organize it during the office hours. Sometimes there is not appropriate equipment available. It is why nowadays employers request for home learning. Those factors could be the reasons of such results. It is worth to consider the extra hours, for example per week, as well as special places, with proper staff, where workers could use eLearning courses during the working hours.

At this point it is worth to mention just about one question in the second part (learning process), that reached almost 40% (showed in the summary table). It should be taken into consideration, because in the near future it can turn out into critical question like two others mentioned in point 1. In this case we asked if there is guidance to learners in choosing which course to attend.

- ‘You were given guidance in choosing which course to attend’.

94,29 % learners answered this question.

As we can see, unfortunately worrying number of learners claims that they were not given fear or excellent guidance in choosing which course to attend. The majority of them state that there were available only poor or fair information about courses. Bank should consider it very precisely and it should focus on providing proper advices to the potential participants.

8. Conclusions

An eLearning self-assessment model and system e-LSA was developed to evaluate the quality of eLearning based on EFQM excellence model. The e-LSA consists of 5 main criteria. For each of the main criteria, a set of relevant sub-criteria, and under each of the sub-criteria, a generic set of about 300 relevant statements have been developed. The person responsible for the evaluation, being the teaching staff or the management can develop their own questionnaire. For each statement, the learner will have to answer 3 questions: is this statement relevant? what is the quality of this stated issue in the statement? and is an improvement needed yes or not?

Moreover, we developed e-LSA-Guide model to help the organizers of the evaluation process to select the relevant main criteria and criteria in order to obtain an effective complete and customized self assessment instrument. The selection of the criteria and sub-criteria will be driven by the type of the eLearning and by the goal of the evaluation process; focusing on the learning activities or on the organizational aspects.

e-LSA has been applied in the KBC Bank, for the evaluation of their new e-learning initiative. The implementation of eLearning was not going the way the KBC management has hoped. In this research the reasons for it were identified.

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