An operational model for monitoring to guarantee quality and efficacy to e-learning training courses in the Public Administration – The MarchE-Learning project experience

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Abstract

The present article suggests an operational model for monitoring together with the tools used for an effective monitoring activity of vocational training paths delivered in the form of blended e-learning. The target group was made up of by high and medium level professionals working in regional and local Public Administrations. The model has been applied to the MarchE-Learning project carried out by the Vocational Training School of the Marche Region. The authors acted as referees for the methodological and operational aspects of monitoring and evaluation. The activities designed and carried out, the implementation of prompt corrective action and the lessons learnt through the experience suggest the proposal of this model as well as the formulation of suggestions and recommendations for a possible, future use in similar contexts.

1 Introduction

The present article describes an organizational and operational model for monitoring and evaluation of vocational training paths delivered in the form of blended e-learning. The target group of the learning activities was made up of personnel working in regional and local Administrations.

The model was experimented in the MarchE-Learning project, from September 2008 to June 2009. The results and the method followed are briefly presented in this article. The proposed model takes into consideration both qualitative and quantitative aspects in each implementation phase. The most relevant aspects of the experience were: the interaction among several public administrations, the training of 'vocational training referees', specifically trained professionals in each administration, and the remarkable number of administrations and staff members involved. Beneficiaries of the training initiative was the Marche Region, together with municipalities (n. 37), mountain communities (n. 5) and provinces of the region (n. 4). The project had a long and complex genesis, starting with a four-year period (from 2005 to 2009), during which the authors were involved in monitoring and evaluation activities, coordinated by the Marche Region – Regional Vocational Training School (RVTS).

RVTS took part in the initiative as leading partner having the universities located in the Marche region and the Sole 24 Ore as partners. Four learning paths were designed (New modalities of work, Document Flow Analysis, Responsible for the privacy policy, Security Manager), which included 16 editions. The beneficiaries were executives and Departmental heads. The hours of training delivered were 9960, the personnel enrolled 465, the participants to the courses 332 and the personnel trained (with final certification) 169.

Each course included three modules: an introductory one, a specific one and a final one; each module was introduced by a lecture in a traditional classroom.

In the preparatory phase some 'vocational training referees' were trained, chosen among local administration officers working in the administrations beneficiaries of the training paths; their task was to identify training/learning needs in their own administrations and later to build a territorial network, both formal and informal.

A preliminary survey of the expectations of the beneficiaries and their profile (ex-ante analysis) was carried out. The training path was monitored during the delivery phase of the courses (in itinere analysis), and after their conclusion (ex-post analysis). The feed-back received from the activity of monitoring and evaluation allowed to proceed with in itinere correction activities, in the light of quality control in reference to online training paths.

The construction of a territorial network of personnel working in Local Ad-

ministrations was taken up, with the aim of gradually constituting a community of practice. In this sense the Public Administration is considered as a Learning Organization (Senge, 1990).

2 Monitoring: methods, objectives, phases, tools

MarchE-Learning refers to the most recent methodological approaches, applying hybrid tools for monitoring (Petrov *et al.*, 2008). The project is based on a user-centred model (Bevan, 2009), which Nielsen declines in terms of user 'acceptability' (Nielsen & Loranger, 2006). Holmes has recently introduced the 'Learner-Oriented e-Learning Quality' (Holmes, 2006). As concerns the evaluation criteria it refers to Kirkpatrick's Four-level evaluation model (Kirkpatrick,1994; 2005). As regards the role of teachers and tutors Marshall–Shriver's approach is considered (1994) (ISFOL, 2004, p. 223), while Van Slyke (1998) is referred to for his reflection on the effects of training on institutions and subjects (*Ibidem*, p. 224). Ferrari and Garavaglia (Garavaglia & Ferrari, 2004) focus on processes, actors involved in the learning process and technological impact. Silverman makes a distinction between qualitative and quantitative aspects (Silverman, 2004).

The culture of service quality is strategic for an efficient Public Administration, within a managerial and technological context of ever growing complexity (Circ. 24/4/1995, n. 14 and Dir. 13/12/2001). Quality is generally intended as a set of features of a product/service able to satisfy the user's needs. As far as the vocational training context is concerned, the concept of quality changes according to its beneficiaries and contexts of application. The ISO UNI EN 9000 system is considered by some not applicable to the context of state employees training (Verdi *et al.*, 2001), on the basis that in public administration training must be a permanent and continuous system (Vidotto, 2004) according to the virtuous cycle well described in (ISFOL, 2007; CNIPA, 2007). Although the Marche Region has set up a specific structure (RVTS) in order to manage and coordinate its own training activities, there seems to be a lack of systematicity in the process, as already remarked in the 12° Annual Report on training in the public administration, possibly due to a weak strategic link between training and organization.

In MarchE-Learning, monitoring is based on the analysis of the whole life-cycle of a project, on both qualitative and quantitative aspects of training and on the attention to the beneficiaries of training, in order to manage and control its quality.

The activities included three phases: ex-ante, in itinere and ex-post.

The survey and analysis tools are illustrated in Table 1:

Table 1
SURVEY AND ANALYSIS - TOOLS

Tool	Description
Monitoring and evaluation plan	It is the guiding tool to monitor the main aspects of a learning path (people, process, product) and to identify the specific strengths and weaknesses and/or malfunctions of a training process. It is structured as a table, in which the different monitoring phases (Preliminary phase – Survey, Phase 1 – Monitoring process, Phase 2 – Product monitoring, Phase 4 – Summative evaluation) are combined with the activities included in each phase, the objectives for each activity, realization modalities, the tools used and the time schedule.
Preliminary question-naire on expectations	It is structured into three sections, with a total of 18 questions. It is semi-structured: 6 yes/no questions and 12 open questions. It investigates the following aspects: job, previous personal studies and training, expectations about the training path.
Customer satisfaction questionnaire	It is semi-structured. It includes 26 questions, 25 closed questions, 1 requesting to explain clearly statements about the impact of training. It is structured into sections: perceived value of the training path, organization, platform, use of online communication tools, learning contents, staff/teacher/tutor area, training practical effects/possible application.
Focus group - instruc-tions	Instructions for the focus group coordinators in order to: • Check possible effects of training on participants' work practices (participant's narration of their daily work, of the practices followed before training, of how their work practices have changed after 6 months from the conclusion of training). • Investigate on the e-learning modality by posing questions such as these: were the online activities useful?, had there been the possibility to cooperate with your colleagues to the development of the tasks assigned by the teacher, do you think this would have added value?, The customers' satisfaction questionnaire emphasized the fact that most respondents would like to increase the number of hours of traditional training. How do you explain this attitude?, had a social network tool been available would you have used it?

Tool	Description
Ex-post evaluation questionnaire	It is semi-structured and divided in two sections: • Effects of knowledge acquired on work context. It is requested to the participants to specify: the course/s attended (in a table); if he/she obtained the certificate of attendance; define the impact level of training on work practices by choosing among three adjectives: scarce/perceived/high (Scarce = no new practices were introduced; Perceived = the training activity allowed the acquisition of new elements (knowledge, competence, tools) to solve problems and manage practices and procedures; High = the activity has undergone important changes as a consequence of the course attended). It is also requested to briefly define how the course has contributed to modify work practices. • Specification of the preferred modality of training delivery among: traditional, blended, e-learning for future training activities.
Survey and analysis techniques	Hybrid three-level analysis: • 1st level: statistic analysis of each edition of the same course; • 2nd level: contrastive statistic analysis among the different editions of the same course; • 3rd level analysis (qualitative analysis): contrastive analysis on common dimensions (training model, platform usability, time and place management of training) created from the aggregation of variables, among training paths. The survey sample is the learning group corresponding to the level of analysis. The quantitative analysis developed on the following dimensions: attendance and knowledge acquisition. The indicators used to monitor knowledge acquisition are: formative evaluation (multiple choice self-evaluation tests available on the platform at the end of each module, in which the unanswered test is considered as incorrect); summative evaluation (work in the traditional classroom evaluated by the teacher). The qualitative analysis investigates: learning needs, expectations of each participant and expectations regarding each course/the courses, satisfaction of learning needs, satisfaction of participants' expectations, quality of teaching, tutoring, contents, organization, impact on profession, perceived training quality. Questionnaires were administered, then manually handled by creating and using ad hoc matrixes, from which values, considerations and evaluations were formulated.

3 Operational tools and monitoring results

The tools and results of the quantitative analysis are summarized in Table 2:

Table 2
QUANTITATIVE ANALYSIS - TOOLS AND RESULTS

Quantitative analysis	Tools
	Platform report: Aggregated report, LMS_user report, Detailed user report and, where foreseen, the summative evaluation formulated by the teachers. The data retrieved at the 1st level of analysis have been organized in tables containing: physical and online presence, course participants' identification, percentage of online LOs fruition, total time of fruition calculated in hours, percentage of tests filled out on the total number, percentage of correct tests on the total number. The dates retrieved at the 2nd level of analysis have been organized in tables of quantitative indicators focused on attendance and knowledge acquisition. The indicators concerning the knowledge acquisition are: formative evaluation, summative evaluation.
	Results
	Physical classroom and online fruition – The average percentage of online fruition of the courses delivered in the MarchE-Learning project is 59%. The average percentage of fruition of traditional classroom lessons is 84%. Therefore, the final average percentage of fruition of the courses (both online and traditional) is 72%.
	Knowledge acquisition –The analysis has been conducted on 6 values. The averages vary according to the different courses and cycles: did not fill out the self-evaluation test (minimum 22%; maximum 44%); percentual average value of self-evaluation tests filled out (minimum 36%; maximum 72%); average formative evaluation (minimum 52%; maximum 84%); did not do the summative testing (minimum 6%; maximum 34%); average summative testing (minimum 90%; maximum 96%); did not obtain any evaluation (minimum 6%; maximum 27%)

As concerns the qualitative analysis the following has been noticed: the participants to the courses judged 'just/hardly satisfactory' the possibility to reconcile training time and deadlines with daily work; in all the courses it is evident that the greater online fruition is, the higher the number of tests filled out is and vice versa. If considering these two remarks, it is possible to infer that a longer quantity of time devoted to the fruition of the online learning objects determine better results in the self-evaluation tests; in this way, each participant can expand his/her knowledge and reiterate the tests until he/she gives the correct answer. Moreover, typology and structure of the formative evaluation tests and practical tasks in the classroom may have influenced both the percentage of tests filled out and the learning results. On this matter, the final focus group (4 participants) highlighted that the aims of the tests were not clear enough to

the participants. They were considered generic in their formulation and aiming to check the knowledge acquired more than the competence.

Therefore, the emerging strengths are: the courses empowered knowledge and competence and enhanced the consciousness of the main themes debated; the contents of the courses were valued positively by the participants; the blended modality is functional and desirable; the online learning environment was judged as effective. The technical problems were rare and limited to accesses and connection; the impact on work practices is perceptible;

The weaknesses are: the information on the online activity given in the traditional classroom was not sufficient to steer the course participants; the role of the online tutor was not clear enough and well-defined. The function of learning facilitator seems to play a marginal role.

4 Modalities and suggestions for the use of the model

IThe model proposed can be applied to other contexts thanks to its flexibility. Nonetheless, it has to be part of a strategic project aiming to improve the quality of the Public Administration involved. Therefore, in its application it is necessary for an administration to realize the importance of quality control by both devoting instrumental, human and financial resources necessary to implement it and using the results of monitoring to update its training plans and paths. It is necessary to create professional figures - the training referees - bridging the organization and its training needs. These figures must undergo specific training to learn how to apply the survey tools and the training needs analysis tools. Moreover, they must be able to use the survey results obtained for the creation of an organization's training plan in cooperation with human resources and quality managers.

Some critical elements that must be pointed out as possible risks in the application of the model are: the training referees network was not activated in the preparatory phase; the starting level of knowledge of the personnel selected was scarcely considered; possible communication difficulties among the institutions involved in the project (region and local administration); low consideration of the e-learning training time in relation to the usual work time.

It is useful to suggest some measures preventing the risks above-mentioned:

Organizational aspects
1. Strategic and updated plans are needed to train an organization's internal personnel;
2. it is fundamental to carry out a complete training needs analysis, effected by specifically trained professional figures;

3. refresher training on decision-making process innovation is crucial for the managing level;
4. time has to be devoted to online training during the working day in order to make the training activity more effective.

Monitoring management

It is advisable to have a single person in charge of the control and coordination of all the phases and computerize the collection and analysis of data.

Delivery of e-learning training

1. The roles of teacher and tutor should be made clear right from start.
2. It is important to inform learners about the possibility of interaction in the platform; use of contact and exchange/dialogue tools among participants has to be constantly stimulated by tutors and teachers.
3. learning groups should be as homogeneous as possible (from socio-cultural context, starting level of knowledge, etc.).
4. Homogeneous didactic behaviours are required if the courses involve more than one online classroom.

5 Conclusion

The main critical aspects that have been noticed are very common. The regulations state that the training and learning processes should be a systematic activity, but at the local level training is still far from reaching this level (Formez, 2003-2005; Cristofaro, 2007).

Another important critical aspect is that assessment of both competence and impact are hardly ever carried out (12° PA Report) thus implying the danger that the training strategic cycle never ends.

In short, training personnel working in the Public Administration should have the following features: system objectives, a system organization, human and financial organization with a stable work methodology. Moreover, it should have system resources, both human and financial; it should also determine homogeneous assessment and evaluation modalities, be a continuous and distributed process, in which the evaluation of the results may strategically steer the following training cycles.

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