

An E-Learning Model for Territorial Statistics: Evaluation and Monitoring Indicators

Un Modello di E-learning per la Statistica Territoriale: Indicatori di Valutazione e Monitoraggio

Anna Pia M. Mirto

ISTAT – Ufficio Regionale per la Sicilia, Via G. B. Vaccarini, 1- 90143 Palermo, mirto@istat.it

Riassunto: I modelli di formazione a distanza (FaD) si basano su processi di comunicazione parzialmente differenti da quelli della formazione tradizionale. Il progetto che si intende descrivere in questo contributo fa riferimento ad una esperienza di formazione “La statistica ufficiale per la conoscenza del territorio” indirizzata ai responsabili degli uffici di statistica dei comuni appartenenti alla provincia di Messina. L’esperienza di *blended learning* ha coniugato la fase di formazione tradizionale (in aula) alla fase di formazione in rete. La fase del processo che si intende evidenziare in questo contributo riguarda il monitoraggio e la valutazione rappresentata attraverso un set di indicatori per misurare l’efficacia e l’efficienza dello strumento e valutare la qualità del processo nelle sue componenti.

Keywords: Blended Learning, Assesment Indicators, Territorial Statistics.

1. Learning Methods and Contents

The aim of this paper is to provide a contribution in *blended learning* related to the territorial statistics. In e-learning people are involved in the process of creating e-learning materials and making them available for specified audience. The People-Process-Product Continuum or P3 Model can be used to make a comprehensive picture of e-learning (Khan, 2005). Although evaluation is a separate stage of the e-learning process ongoing formative evaluation for improvement should always be embedded within each stage of the whole learning process.

FaD product realisation at high quality level go necessarily through good planning phase. Second step is how is possible to evaluate this process. The first answer could be addressed towards the accomplishment of formative scopes, that could be related to learning of a certain content or the participation dimension and the process evaluation. The criterion that has been established in this territorial experience has been the second one. Moreover the evaluation of quality learning process has been calculated referring to three dimensions: learning individual, content quality, qualitative communication process (Bocconi et al, 2004).

2. Monitoring and Assessment Indicators

In FaD courses more elements should be monitored comparing to traditional courses (Thorpe, 1998). Therefore is more difficult establish criteria to evaluate users. Some evaluation model are known in literature. Dillon and Guanawardena (1992) propose a model based on four linked components: diagnosis programme, course description, analysis of results, course documentation. McCleary and Egan (1989) propose a model based on Likert scale and referred to the following factors: tutor efficiency, feedback students, materials, level of difficulty, organisation, technological instruments, comparison with traditional course. Finally Harrison et al. (1991)

propose a model that could be considered more similar to the tool used in the Messina experience and based on these points: general information, management, telecommuting.

To evaluate the efficiency and efficacy of all the process an important benchmark is the Kirkpatrick model; every level (reaction, learning, behaviour and result) has an impact on the others. In the local experience a set of indicators has been established referring to tutor evaluation and student assessment both breakdown per time (number of hours per week) and place (municipalities, see Table 1). Referring to the two dimensions:

- Most of time (more than 70%) has been spent in monitoring users the remaining time in managing FaD platform.
- Within the category “User monitoring” about 26% of time is spent for phone contacts and about 40% in calculating user statistics.
- Over than 60% of users have linked to FaD doing exercises, the activity has been pushed by phone and e-mail contacts.

Finally an overall assessment of this “closed ring system” has been measured through a questionnaire aimed to investigating a general judgment on the experience, a specified level of satisfaction for FaD platform and some analysis on time-work management, linking time, utility and difficulty in exercise implementation, tutor role and strengths and weaknesses of the system.

Table 1: *Evaluating tutoring and users on line*

TUTORING INDICATORS	% n. hours	USER INDICATORS	Average %
1. FAD Platform Management	25,5	1.1 Number of links to sites/N. of available sites	7,3
1.1 Link inserting	1,8	1.2 Number of links to docs/Number of inserted docs	4,6
1.2 Doc inserting	2,7	2. Exercise (repeated more times)	
1.3 Test inserting	20,9	2.1 Closed answer Excel	1,6
1.3.1 Closed answer Excel	3,6	2.2 Statistical indicators	1,1
1.3.2 Statistical indicators	6,4	2.3 Demographical indicators	0,8
1.3.3 Demographical indicators	3,6	2.4 Test with database	1,0
1.3.4 Test with database	7,3	2.5 N. of completed exercises/N. of on line exer.	63,5
2. User Monitoring	74,5	2.6 Number of right answers per exercise	58,3
2.1 Phone contact	26,4	3. Number of users	73,3
2.1.1 Received phone calls	3,7	3.1 Percentage of linked users	74,1
2.1.2 Done phone calls	22,7	3.2 Number of FaD users	75,0
2.2 E-mail and advise contacts	9,0	3.3 Percentage of exercise users	46,7
2.3 User statistics	39,1	4 Phone contact	
2.3.1 Completed exercise	30,1	4.1 Phone call done/received	6,0
2.3.2 Link to sites and docs	9,0	4.2 E-mail done/received	7,0
TOTAL	100,0		

References

- Badrul H. Khan (2005), A comprehensive e-learning model, *Electronic Journal on e-Learning*, Volume 2 Issue 1 (2006).
- Bocconi S., Midoro V., Sarti L. (2004), Valutazione della qualità nella formazione in rete, CNR.
- Calvani A., Rotta M. (2002), *Fare formazione in Internet*, Erickson.
- CNIPA (2004.1), *L'e-learning nelle pubbliche amministrazioni: le linee guida del CNIPA*, Quaderno n. 7 ottobre 2004, Centro Nazionale per l'Informatica nella Pubblica Amministrazione.
- European Commission (2001), *Council Resolution of 13 July 2001 on e-learning*.
- Graff M. (2003), Cognitive style and attitudes towards using online learning and assessment methods, *Electronic Journal of e-Learning*, Volume 1 Issue 1 (2003) 21-28.
- Trentin G. (2001), *Dalla formazione a distanza all'apprendimento in rete*, Franco Angeli.