

ELLEIEC PROJECT A COMPARATIVE EVALUATION OF TEACHING PRACTICES IN EUROPA – RECOMMENDATIONS AND BEST PRACTICES

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Abstract

In this paper, we are going to present the methodology we have adopted to propose recommendations for e-Learning related to the objectives of ELLEIEC project. First, we present the general context and then, we expose the different steps of the study which lead to e-Learning recommendations for the Virtual Entrepreneurship Center.

Keywords: *eLearning; comparative assessment; best practices*

1. Introduction

ELLEIEC (Enhancing Lifelong Learning for the Electrical and Information Engineering Community) is an ERASMUS thematic network which is funded by the European Commission for a three-year period (October 2008-September 2011). ELLEIEC will establish, as main output, a virtual centre for the development of enterprise skills and competencies and investigate and report on the implementation issues and impact of Lifelong Learning on the employability of people over Europe in the Electrical and Information Engineering field. The virtual centre will connect learners of any age to a network of educators within academic institutions, business training advisory bodies and business mentors across Europe. The Virtual Centre for enterprise will provide a facility through which any learner within Europe can develop their enterprise skills and hence the centre will contribute to the competitiveness of the population in new venture creation and the economic growth of the European Union. Engagement of staff and learners with the Centre will

also contribute to the excellence of European education and research in the enterprise area. ELLEIEC will provide a guideline for an internal e-learning assessment offer which will be a reference point for any applicant in the Lifelong learning framework. Finally ELLEIEC will test some mobility network to promote mobility through the studying of good practice in the design of International cooperation at PhD, master and bachelor levels with attractive application. A methodology for an assessment of eLearning enterprise courses compared to more classical delivery methods, to define a valuable e-learning tools.

In task V, ELLEIEC project have the aim to develop a methodology for an assessment of e-learning enterprise courses compared to more classical delivery methods, as well as to participate in the quality assessment of e-learning tools and in effort to define some valuable e-learning tools for course delivery.

The objectives were to submit a common questionnaire to different populations of students to evaluate teaching/learning process. The evaluation will explore many cases as :

Assessment of knowledge, skills and competence obtained by student during the learning process

- Identification of differences while using traditional teaching methodology and using e-learning tools and appropriate methodology.
- Evaluation of satisfaction, motivation, enjoyment, etc.

- Self-evaluation of achievements in learning process while using e-learning tools and appropriate methodology in comparison with traditional teaching.

2. Methodology

To achieve the main objectives of Task V, we have established the following milestones:

- state of the art concerning eLearning and the existing comparisons between the delivery methods
- state of art in terms of good practices, guidelines and existing projects in the field of eLearning
- design of the questionnaire taking into constraints coming from the involved partners (from the technical and methodological points of view)
- online survey and analysis of the results
- recommendations for the VCE.

Hereby, a figure which summarizes the main step and their interactions to achieve the objectives of the task.

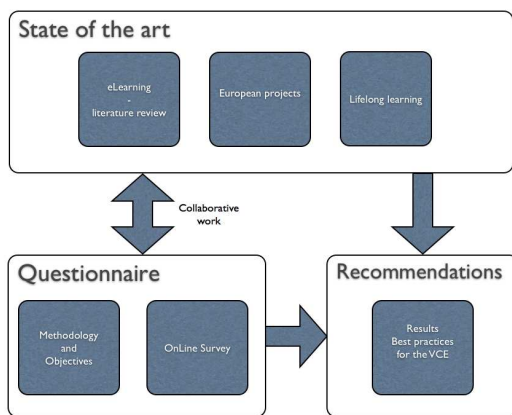


Figure 1. Task V – Milestones

A. State of the art

Our state of the art had to fulfill some specific constraints. First, because of the baseline of the task (comparative study of learning delivery methods), we have identified the need to have a common literature review and a shared knowledge of the important actors and actions in the field of eLearning for each partner country. Second, we have to design a specific questionnaire with an adapted methodology which will give us the possibility to compare all types of experiments from eLearning to face-to-face including specific tools (Tablet PC, ePortfolio, funded by the European Commission

Users Response Systems) and blended learning. This questionnaire will be discussed in the next part. Third, to be aware of the works done in others projects or studies, we need to have a common basis of references (bibliography, list of projects). These references will enrich the collaborative work which lead to the recommendations for the VCE. At least, using the results of the comparative analysis using the questionnaires and the best practices identified in the state of the art, Task V team will recommend some important features for the VCE.

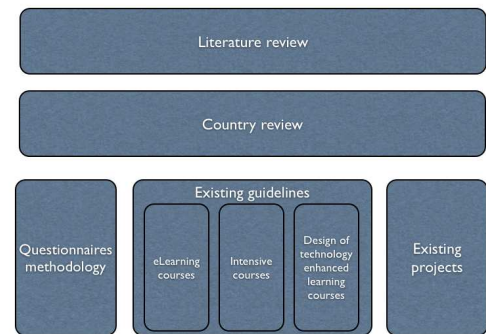


Figure 2. State of the art – Structure

B. Experiments

Each partner will contribute to the comparative study by bringing their own pedagogical experiences (see table 1). The objective is to have a large variety of:

- pedagogical approaches (eLearning, blended learning, face to face, technology enhanced learning),
- technology used (Users Response Systems, Tablet PC, ePortfolio, LMS),
- students (different levels, different domains, different countries, ...).

These experiments were performed during year 2010/2011. Others experiments were organized in year 2009/2010 but the questionnaire was not adapted. The feedback of these first experiments has given new tracks to design the question which is currently used.

Table 1. Experiments

Type of Experiments	Universities	Domains	Number of involved students	% of eLearning
A Practice in Using ePortfolio in a Higher Education Course Taught at Distance	Ege university, Izmir, Turkey	Object Oriented Programming	22 students: 7 undergrad, 15 grad	50

Enhancing learning by using Tablet PCs in a networked classroom	Universidad Politécnica de Valencia, Spain	Electronic Algorithms and Data structure	20-20 / 30	50
CISCO Courses	University of Rousse, Bulgaria	Network	15	100
MEDICAL INFORMATION SYSTEMS Handbook for Laboratory Exercises and Self testing@	University of Sofia, Bulgaria	Information Technology in Medicine	180/year	50
Blended Learning in Guided Propagation and Antennas	IST-UTL Lisbon, Portugal	Telecommunication	70	15
LMS	Kaunas University	Biomedical Digital Processing	20	60
eLearning versus classical one	Joseph Fourier University, Grenoble, France	Network and Telecommunications	5	50

Taking into account the feedback of the use of the first questionnaire, the current questionnaire is the results of a collaborative work between all the partners involved in Task V. The main constraint was the questionnaire would be used for all the experiments. The questions had to fit as well for eLearning experiments as face-to-face or blended learning.

The questionnaire is structured by the following main parts:

Table 2. Structure of the questionnaire

Main categories	Details
Institutions	Which country, town, university,
Personal informations	Gender, age, domain, level, year in bachelor or Master
Tools	Evaluation of the usability (scale 1 to 5 from strongly disagree to strongly agree)
	I think this tool is easy to use I was able to learn this tool quickly The tool operated correctly The tool interface is attractive
	Evaluation of the effectiveness (scale 1 to 5 from strongly disagree to strongly agree)
	The tool was helpful to achieve my learning goals This tool was useful enough to complete learning tasks

	Evaluation of the satisfaction (scale 1 to 5 from strongly disagree to strongly agree)
	I was satisfied with the tool
	Evaluation of the productivity (scale 1 to 5 from strongly disagree to strongly agree)
	The tool helps me to finish tasks in shorter time comparing other tools
Methods	Evaluation (scale 1 to 5 from strongly disagree to strongly agree)
	My proficiency in using this tool is good I am satisfied with this methodology of learning I learned the course material better with this approach The pedagogical method helps me monitoring my own learning The pedagogical method engages me more in the course work I needed instructor's help in following the course material The pedagogical method helped me to improve creativity The pedagogical method motivated me to interact more with my teacher and the other students The pedagogical method enabled collaborative work with the other students I put more time for learning the course material than traditional class
Perspectives / Expectation	Evaluation of the expectation (scale 1 to 5 from strongly disagree to strongly agree)
	My expectations at the beginning of the course were very high
	Evaluation of the satisfaction (scale 1 to 5 from strongly disagree to strongly agree)
	The course approach has met my expectations Overall, I was satisfied with this course approach I would recommend this approach for other courses
ECTS evaluation	Evaluation
	How many hours have you spent to complete this course (lecture, assignment, home work with other resources) ? In order to complete the course, how much time have you spent using others resources (books, library, internet, ...) not included in the regular material ?
Experience in learning technology	Evaluation
	User Response Systems, ePortfolio, TabletPC, PPT, LMS, onLine tests, ...
Personal informations	How frequent do you use computer ?

	Do you own a personal computer ? Do you have an internet connection ? How frequent do you use your computer ? Since when, do you have an internet connection ?
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These main parts have been chosen to be filled by any student what ever the experiment. The questionnaire counts 45 questions and has been implemented in LimeSurvey to have onLine survey and statistical functionalities.

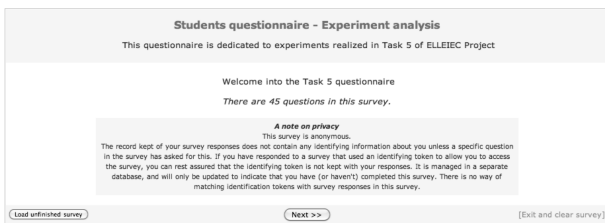


Figure 3. onLine survey – Homepage

Some informations concerning the in progress survey:

- 73 students have answered to the questionnaires from France, Spain, Portugal, Bulgaria, Turkey and Lithuania.

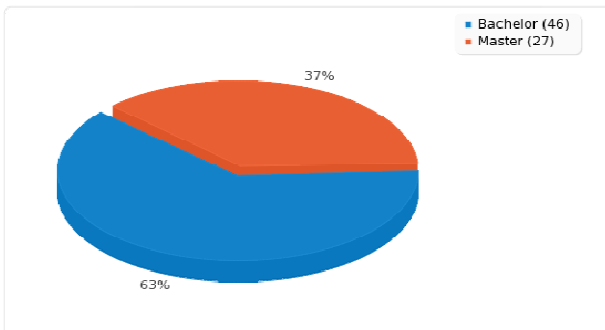


Figure 4. onLine survey – Levels

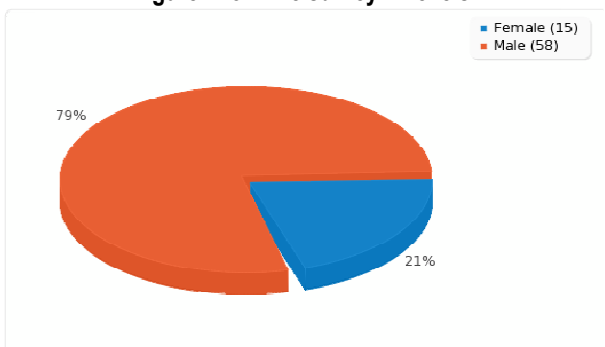


Figure 5. onLine survey - Genders

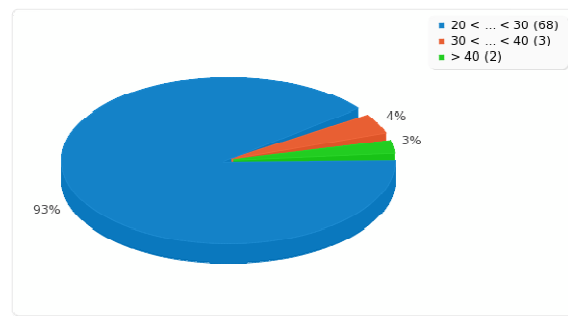


Figure 6. onLine survey – Ages

3. Recommendations

Following the results of the state of the art and the analysis made during the experiments, we have identified some key points to be considered for the design of the VCE. These key points are the following :

- tutoring
- delivery
- design
- assessment
- learning styles

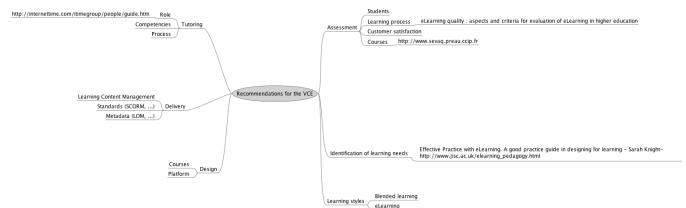


Figure 7. Mindmap including main recommendations

4. Conclusion

In this paper, we have described the activities led in Task V of ELLEIEC project. This Task dedicated to eLearning from the points of the technologies, the methodologies, the assessments methods, the used tools, the partners experiences is the task which proposes to the whole projects her competencies in eLearning. With the work done, all the partners of the project will have a sort of handbook summarizing important references, how-to to start with eLearning, and recommendations and guidelines which help them in their own eLearning strategies.

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