

A METHODOLOGY FOR DEVELOPING BLENDED COURSES INTEGRATED WITH WEB 2.0 TECHNOLOGIES

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Abstract

This paper is a result of the OBELFA - Open BlendEd Learning For Adults, a two years project funded within the EC SOCRATES /GRUNDTVIG Programme and presents a methodology for developing blended courses, with a focus on using Web2.0 technologies. The main aim of OBELFA was to create blended learning courses for adults, related to specific topics for specific target groups, with a balanced rate of face to face and online lessons, and to revive interest on learning as a prerequisite for further education. Depending on the technical conditions and knowledge of the participants, there were used different eLearning methods and different devices for easy access to learning materials and support. The benefits of using Web2.0 technologies are underlined.

Keywords: blended learning, education, distance education, eLearning, adult education, online courses, Web2.0 technologies.

I. Introduction

The social, economical and political changes, along with the development of the information society indicate clearly that knowledge will be more and more the basis of our society. The need for lifelong learning has been recognized by governments and policymakers across all developed societies. Individuals need to cope with the ever changing demands of work, of a changing society, and the increasing insecurity of employment, as both state and employers withdraw from paternal roles.

Therefore the lifelong learning process takes place not only in schools and in vocational contexts but more and more in the private area. Classical learning in classrooms changed into eLearning about ten years ago but its success was limited because learners never came to the same environment with the instructors. Nowadays any approach became more wide spread which is called **blended learning**. In this approach students follow the courses through ODL but from time to time they come to classrooms and discuss the subject with the tutors and peers.

A mixture of face-to-face and distance education and the integration of synchronous and asynchronous learning tools provide an optimal possibility for the arrangement of effective learning processes. In the OBELFA project, we have investigated how to motivate target groups which have not been interested so far in further training, each for different reasons. The main focus was to revive interest on learning as a prerequisite for further education.

Each individual has got his/her own learning experience. To increase the chance of learning we used the personal experience and individual needs of the learners. We were aware of the social contexts of the learners. Highly interactive and problem solving approaches for learning in real life contexts were used.

The courses were developed in a flexible eLearning environment that allows people to take part in training despite their physical and other abilities (forming individual learning portfolio, organizing teaching according to learning objects).

A. Partnership. OBELFA project started in October 2005 and has been run until September 2007 with financial support through the EU programmes (G1 Socrates Grundtvig 225285-CP-1-2005-1-BE-GRUNDTVIG-G11). The coordinator was the University of Ankara, Turkey, and the partners were institutions from other seven European countries: Germany, Greece, Italy, Netherlands, Portugal, Romania and UK.

B. Project Aims and Objectives:

- to increase the effectiveness and motivation for further education by using eLearning methods within a blended learning methodology, for those who have not been interested so far in further trainings for social or other reasons;
- to equip people with the means of knowing how to use new learning and teaching methods and didactics;
- to provide blended learning courses tailored to target groups' specific needs (i.e. adults, unemployed, drop outs, immigrants);
- to distribute created learning resources and learning activities via an open source platform for open access.

C. Target Groups. The target groups were socially disadvantaged people, unemployed people and immigrants. A blended learning methodology and tailor-made courses addressed to such venerable groups was designed, developed and tested in the frame of the OBELFA project.

II. Blended Learning Methodology

A. Blended Learning definition

Like many learning terms, *blended learning* (b-learning) has the illusion of being a concrete concept. In practice it is a flexible term that means different things to different people. The danger is that it is usually seen as a simple method of co-joining some classroom and eLearning (this simple 'pick and mix' definition is not enough).

This is why *b-learning* is defined for our purpose here as the combination of traditional classroom teaching and the use of any of the new technologies or applications in the service of learning or learner's support.

It is important because eLearning can make a significant difference to how adults-learners learn, how quickly they master a skill, how easy it is to study; and, equally important, how much they enjoy learning. Such a complex set of technologies will make different kinds of impact on the experience of learning. Vulnerable adult learners are not comfortable with eLearning technologies and methods. Interactive technology offers a new mode of engagement with knowledge via both material and social interactivity online. Adult-learners should take greater responsibility for their own learning.

The participants in the project courses were adults. Therefore it was important for us to understand how adults approach learning; this is why we tried to examine several characteristics of Adult Education, when approaching the learning process, such as:

- autonomy
- the adults have a clear image of how they will use the new information and to what degree it is useful for them
- they assume an active role
- they are oriented towards solving practical problems, and achieving a well-defined purpose
- they have professional and life experience.

All these motivate the adults into participating in a course which offers useful elements for their professional life and career. The facilitator must contribute to maintaining their motivation, by everything that helps building the learning process.

An adult gets involved in the collaboration with the others, communicates and interacts with maturity and equilibrium with the other participants. The degree of involvement is however influenced by the way in which his/her expectations are met.

Each participant's previous experience leads to an exchange of *know-how*, to the revelation of tacit knowledge. The facilitator should pay a maximum of attention to the monitoring, the animation of discussion spaces, which should facilitate their experience sharing. Learning is a social act, which is often performed by informal sharing of opinions.

Courses take place in a constructive, student-centred manner. The teacher shifts from the traditional manner, where he/she simply transmits the information, to that of a facilitator who enters the students' team and helps them build their knowledge, as a manager of the learning process.

The entire learning process is realised by *case study*, *problem based learning*, *group work*. Participants not only acquire knowledge, but these are also used in solving practical problems.

There are learning theories stating that study, memorization and success of learning depend mainly on the relationship between the student and the teacher/facilitator. Therefore, the attitude adopted should be very open.

B. Composition and design of a blended learning program

In our design, a blended learning program is divided in blended learning courses. A blended learning course is composed of face-to-face lessons and distance education lessons. Each lesson consists of learning and interactive activities. Each learning activity is composed of learning objects and feedback services, as shown in Figure 1.

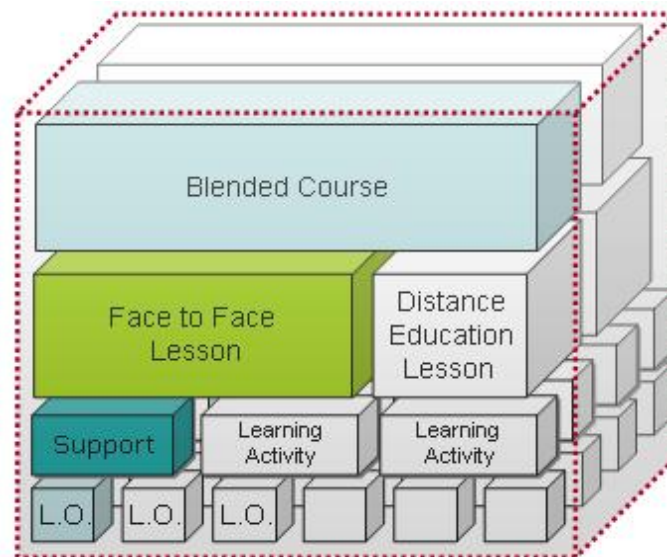


Fig. 1. Obelfa Blended Learning Program

In designing a blended course, the ADDIE approach was adopted, which consists of five phases: analysis (A), design (D), development (D), implementation (I) and evaluation (E) – see Figure 2. Each phase involves using tools and concludes with a product. ADDIE is an iterative process requiring continuous evaluation and feedback, which helps modifying, adapting the material, and improving the facilitation.

The *analysis* phase involves analyzing a specific teaching and learning problem.

- What is that adult learners with no interest on learning are exposed to?
- What they should learn, and how should their learning experiences affect them?
- Is there a particular method that they find the most attractive?
- Which is the aim and what should be learned?
- Which are the learning objectives and the prerequisites?

The *design* phase concerns the instructional and learning methods.

- What educational method and learning techniques do we want to use?
- What learning activities and what support activities should tutors perform to support them?
- What scenarios of learning activities flow?
- What resources should be made available to both learners and tutors in the form of learning objects or interactive services?

The *development* phase concerns the content and communication services.

- What learning objects are available?
- What is the available and/or affordable infrastructure?
- Which are the most appropriate ICT means to ensure availability, openness, friendliness, interactivity, etc?
- Where is the equilibrium balancing e-tutoring and face to face teaching in order to meet our blended learning objectives?

In the *implementation* phase the following actions are taken:

- The material for the f2f and online learning are created
- A virtual learning environment is open and the space is prepared with all the needed information
- The modules are published online
- The (pilot) course is run.

The *evaluation* phase is an ongoing process which takes action during and after the course, in which the following aspects are studied and measured.

- Which is the utility of the course for the participants?
- Which is the participants' involvement?
- Which is the degree of interaction generated by the material?
- Which is the impact of the course for the participants careers and for their organisations?

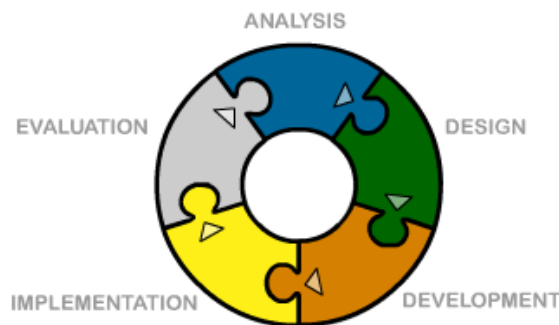


Fig. 2. The ADDIE model

The materials for a course should meet the following requirements:

- to contain useful, new, well-organised, inciting, interactive, motivating information
- to represent the necessary basis for accomplishing the course objectives
- to answer to various learning styles
- to make use of the participants' previous experiences
- to be practice-oriented
- to encourage reflection and further research
- to offer a basis for discussions, activities.

More over, since it is not an easy task, a team is usually set up to design and implement a blended course. This is made up of specialists in the course topics, programmers, project manager.

Our methodology includes also aspects related to course efficiency monitoring and evaluation. A course can be said to be efficient when its objectives are met. For efficiency evaluation, we have proposed two stages: a formative one, during the course itself, when the facilitator can take into account the participants' and partners' opinions in order to make improvements, and a summative one, occurring at the end of the course.

C. F2f and online activities

The evaluation of the courses run during the projects leads to the following conclusions related to the benefits of using f2f and online activities for the vulnerable adult groups.

Why is traditional classroom teaching is important for vulnerable adult groups?

- establishes a direct connection and sharing between facilitators and participants
- provides clarification on different subjects, thus increasing the participants confidence and motivation
- at least a part of group projects are easier to be done
- permits to realize a common pace for participants in studying the materials.

Why is eLearning technology important for vulnerable adult groups?

These technologies support many different types of capability:

- access to digital versions of materials unavailable locally
- communication tools for collaboration with other adult-students and tutors
- internet access to search, and transactional services
- interactive diagnostic or adaptive tutorials
- interactive educational games
- personalized information and guidance for learning support
- tools for creativity and design
- virtual reality environments for development and manipulation
- electronic devices to assist disabled learners
- tools to create portfolios – such as blogs.

Each one encompasses a wide range of different types of interaction and possibilities for feedback and collaboration.

III. Technologies used in the project

An important issue in the project was the use of open standards, open source software, and new collaborative technologies.

A. Partners' collaborative platform

The success of the project could be reached only with a continuous collaboration of the partners, and with a good management of the coordination team.

For all the duration of the project the partners have collaborated on an online platform at <http://www.obelfa.eu>, implemented and administrated by the German partner, using the open-source Joomla system. All the steps of the projects were discussed on the platform forums, having access to the project documents hosted by the platform too.

A *wiki* containing information about technologies and strategies to be used for preparing and running the courses was continuously developed by the partners from the beginning of the project.

Together with the conclusions resulted from the evaluation of the courses, the *wiki* was used to build the blended learning methodology guide.

Before launching each pilot course, the materials were reviewed by the other partners; also the interaction on the online platform were monitored by the partners and they gave useful feedback on the project collaborative platform. This way *peer-mentoring connections* between the team members were created, each could learn form the others' experience.

The public part of the platform including a collaborative blog was an important tool for the project dissemination, together with the blogs owned by a few partners.

B. Virtual learning platform

Almost all the courses developed in the Obelfa project were hosted on a *Moodle platform*. The reasons for choosing this platform are: is open-source; has interfaces in all the languages of the partners; is flexible, easy to use; has the facilities needed for group projects; provides a lot of modern technologies (or has extensions for): RSS feeds, blogs, *wiki*, podcasts, connection with Second Life platform (Sloodle) etc.

C. Web2.0 technologies

The team of Timsoft, the Romanian partner, has realized a deeper research in the field of using Web2.0 technologies in the blended courses. One of the courses implemented by the Romanian partners deals with Web2.0 technologies in education, preparing facilitators to use such technologies in their courses, this course itself being an example of good practice.

The Timsoft team has used for the courses its own virtual learning platform eLearnTS – see Figure3. The platform is based on open technologies - LAMP (Linux, Apache, MySQL, PHP), and offers blogs for participants and RSS feeds, and integrates other Web2.0 technologies.

We consider that each course, each new learning experience in which somebody takes part, should be integrated in the continuous learning process in which that person is implied, should be connected with her / his aims, with her / his practical activities and future career.

No matter which is the subject of a course, one of the tasks of the participants and the facilitator is to build together a pool of useful resources for future reflections too: RSS feeds, blogs – of the facilitator, participants, other practitioners, wikis with topics related to the course, collections using collaborative bookmarking systems.

The collaborative exercises and group projects realized by the participants could use Web 2.0 tools. Thus the eLearnTS platform is open to online resources, to Web 2.0 applications, being integrated with the personal learning environments of the participants.

The time now is 13:36 (GMT) RSS

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La inceput de curs (Edit)(Delete)(Close) RSS ▼ Prezentarea participantilor	2	43	March 26 2007 17:39 By Gabriela Grosseck
Exercitii colaborative (Edit)(Delete)(Close) RSS ▲▼	3	13	April 13 2007 21:04 By Carmen Holotescu
Discutii saptamana 1+2 (Edit)(Delete)(Close) RSS ▲▼	5	79	April 22 2007 13:50 By Dan Teodorescu
Discutii saptamana 3 (Edit)(Delete)(Close) RSS ▲▼	2	22	May 07 2007 12:55 By Gabriela Grosseck
Discutii saptamana 4 (Edit)(Delete)(Close) RSS ▲▼	3	17	May 22 2007 14:36 By Carmen Holotescu
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Fig. 3. eLearnTS Platform

IV. The benefits of using Web2.0 Technologies in blended courses

A. Web2.0 definition

The new technologies and services offered by the Internet, generally called Web 2.0, refer to the social use of the Web, and allow people to collaborate, to get actively involved in creating content, to generate knowledge and to share (exchange) information online. Less than 3 years away from the moment when Tim O'Reilly launched the concept, it is generally acknowledged that Web 2.0 is an umbrella term, which includes a very large range of applications and services which use the Web as a unitary platform, organized on communication.

Although a clear definition of what Web 2.0 is doesn't exist yet, here the new model refers to a collection of technologies and methodologies which render the Web a lot more participatory, more semantic, more personalized, and more immediate. Perhaps its most significant approach is the fact that it is more a socio-cultural phenomenon, rather than a technical one, an attitude rather than a technology, the fact that it has become more personal to the users, emphasizing the development of communities and the strength of something done together.

Specific technologies contributing to Web 2.0 include blogs, wikis, syndication of content through RSS feeds, podcasting and videocasting for audio and video content, screencasting, social bookmarking, media sharing, social networking and other artifacts of social software.

B. Web2.0 technologies in blended courses

So we have Web 2.0. But which technologies and tools can be used in b-learning? The table 1 illustrate some of these.

Technology	Tools
1. syndication of information (RSS)	BlogLines, Google Reader, My Yahoo aggregators
2. Social bookmarking	del.icio.us, furl, citeULike, connotea, scuttleEdu, TrailFire, diigo
3. Social notes	Google NoteBook, Fleck
4. Blogging (information management, ePortfolios)	Blogger, WordPress
5. Wikis	Wikipedia, Wikispaces, PbWiki
6. Casting: audio (podcasting), video, screen, course ¹ and pub	Podomatic, Screen-o-matic, SciVee ²
7. Social networking	Ning, FaceBook, MySpace
8. Media Sharing	Flickr, YouTube, TeacherTube, SlideShare, Scribd, dotSUB
9. Communication (audio/chat)	Asynchronous or in real time (GMail, Messenger/Meebo, Skype, Twitter, Yackpack)
10. Virtual worlds, educational games	Second Life
11. Platforms for personalized pages	Google Page Creator, NetVibes
12. MindMapping	Bubbl.us
13. Office 2.0	Google Docs, Zoho, Think Free, Writeboard, Gliffy

Table 1. Web2.0 technologies used to interact, create content and assess the outcomes of the learning process

Although not designed specifically for use in education, these tools/technologies are helping to make eLearning far more personal, social, and flexible. The Web 2.0 technologies are attractive, allow greater adult/student independence and autonomy, empower students, permit collaboration, create exciting new learning opportunities and increase pedagogic efficiency. Integrating them, b-learning focuses more on collaborative, student-centered, and open learning techniques. These are the reasons for educators from all over the world to start to explore the potential of blogs, wikis, RSS and other social software in blended courses.

Although Web2.0 redefines the relation between technology and education, using such technologies in blended courses does not represent an easy teaching and learning method. It implies a sum of efforts, and especially knowledge of the Web 2.0 technologies.

The figure 4 outlines some of the major Web 2.0 concepts and technologies used in the OBELFA project.

¹ Podcasting of collegiate lectures for students

² A new online tool that allows authors to upload their published research papers along with 10-minute multimedia presentations known as "pubcasts" where they explain the salient points.

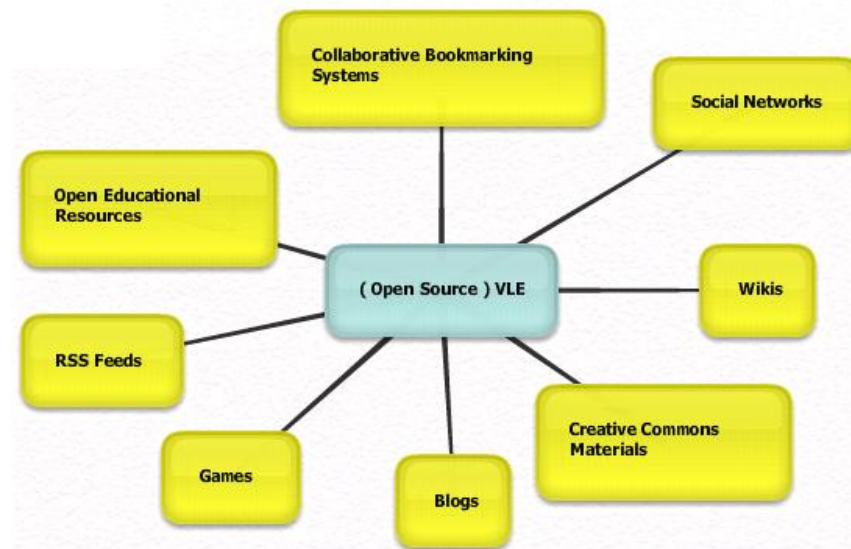


Fig. 4. Web 2.0 Collaborative Technologies used in Blended Courses

However, the authors of this article hope that all the actors from the educational field (teachers, tutors, trainers, administrators, or those responsible for policies) will find this methodology efficient and promising both for the educational process and for self development. We are certain that, once engaged in using the Web 2.0 technologies in blended courses they will discover it is worth the effort and they will enjoy its benefits.

V. Conclusions

The methodology proposed by Obelfa project tries to fill a gap between the theoretical and practical aspects of blended learning. Developing an important number of courses for different target groups, using new technologies, the OBELFA project is a real pool for research, for experimentation of blended learning techniques. The guide resulted will be useful for those developing formal or informal courses for adults.

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