

# Blended learning, blended ideas – collaboration vs. self-learning

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**Abstract:** The main aim of blended learning is to combine the benefits of both classical classroom training and e-learning. The role of collaboration and self-learning in this kind of learning methodology is still a subject of theoretical and empirical studies.

This paper will present the question of collaborative learning in blended learning and, in general terms, ICT supported course. Starting from theoretical deliberations, the text will focus on the researches conducted in frame of two European projects. We would like to present lessons learned from two kinds of ICT supported courses: for students and for teachers. These courses show that collaborative learning can be seen as a subject to be studied and at the same time constitutes the way the course participants are learning. Finally, we would like to present the outcomes of the second project research on collaborative blended learning while trying to design effective ICT supported remedial course.

## Theoretical approaches to blended learning

In fact, there are a lot of definitions and approaches describing what blended learning is. Some of them point that blended learning can be understood as the mixture of media and tools engaged in an e-learning environment, the mixture of a number of pedagogical approaches, regardless of learning technology use (Whitelock & Jelfs, 2003), also as a result of different delivery methods combination (software, Web-based courses, EPSS, and knowledge management practices) (Harriman, 2004) or different training “media” combination (technologies, activities, and types of events) (Bershin, 2004). Therefore, the term “blended learning” concerns both pedagogical approach, learning methods, using media, technology and relations between all of them, bearing in mind what to learn (Gynther, 2005). Thus, blended learning is a term multidimensional and with wide number of meanings.

However, the clearest and the most popular of all these definitions is blended learning as a kind of learning method combining face-to-face classes and e-learning. Because it is not a pure e-learning, there is an opportunity to eliminate the defects which many of the educational researchers underline in pure e-learning. Likewise, not being a pure face-to-face traditional learning – blended learning let us take all the best from this kind of learning, minimizing its negative aspects.

Obviously, the important question is still how to mix these two approaches (techniques, methodologies) in order to obtain effective course or training – what should be the content of the curriculum, which part of this content should be performed in a traditional way and which one with ICT support, finally – what ICT techniques and tools should be used. Having these problems in mind, blended learning allows maximization of the course effectiveness by matching the best methodology for each of the course parts. For example, blended learning course designer should remember that typical face-to-face classes are suited for workshops, coaching, exercises, feedback on activities and paper-based tests (moreover, in each learning situation where social interaction and the dialogue between a student and a teacher are needed). In turn “live” e-learning is good for application exercises, online coaching, interaction between students, online feedback, assessment, chats and instant messaging. What is concerned self-paced e-learning goes for simulations, online case studies, interactive learning modules, e-mail, bulletin boards interactions, online assessments, and other forms of computer based training (Harriman, 2004). The table presents another possible matching between activities and methods in a blended learning course.

Table 1: An example of matching between activities and methods in a blended learning course by Rossett, Douglass & Frazee (2009).

<b>Live face-to-face (formal)</b> <ul style="list-style-type: none"><li>• Instructor-led classroom</li><li>• Workshops</li></ul>	<b>Live face-to-face (informal)</b> <ul style="list-style-type: none"><li>• Collegial connections</li><li>• Work teams</li></ul>
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<ul style="list-style-type: none"> <li>• Coaching/mentoring</li> <li>• On-the-job (OTJ) training</li> </ul>	<ul style="list-style-type: none"> <li>• Role modeling</li> </ul>
<b>Virtual collaboration/synchronous</b> <ul style="list-style-type: none"> <li>• Live e-learning classes</li> <li>• E-mentoring</li> </ul>	<b>Virtual collaboration/asynchronous</b> <ul style="list-style-type: none"> <li>• Email</li> <li>• Online bulletin boards</li> <li>• Listservs</li> <li>• Online communities</li> </ul>
<b>Self-paced learning</b> <ul style="list-style-type: none"> <li>• Web learning modules</li> <li>• Online resource links</li> <li>• Simulations</li> <li>• Scenarios</li> <li>• Video and audio CD/DVDs</li> <li>• Online self-assessments</li> <li>• Workbooks</li> </ul>	<b>Performance support</b> <ul style="list-style-type: none"> <li>• Help systems</li> <li>• Print job aids</li> <li>• Knowledge databases</li> <li>• Documentation</li> <li>• Performance/decision support tools</li> </ul>

Undeniable advantages of blended learning are not only varied possibilities of combining and personal adaptation of pedagogical methods but also some specific benefits resulting both from implementing ICT support and face-to-face approaches. There are three basic assets of using online methods in blended learning course listed in the subject literature: cost reduction (especially the parts of the course realized online, personal costs related to the presence and mobility of teachers, rental costs, etc.); distance barriers eliminated (the students may learn wherever they are); time flexibility (the learners may study whenever they want, taking advantage of their proper efficiency rhythm and personal timing opportunities) (Alvarez, 2005). Taking into consideration face-to-face learning, the benefits are possibilities to take social interaction, live collaboration and the dialogue between a student and a teacher.

### **Collaborative learning as an element of ICT supported course**

What is a place of collaboration in ICT supported learning, named also blended learning? To answer this question, it is worth to think about using collaboration tools in both ICT-based and traditional (face-to face) learning. It seems that collaboration is one of the most important factors of learning, often listed with communication. In face-to face learning collaboration is a main part of didactical process. Primarily, it is collaboration between a student and teachers, who communicate, discuss and assess each other. Secondly, a student may collaborate with his/her colleagues if we deal with course realized in a group. In turn, in an online course the collaboration is, of course, an opportunity to have a contact between a tutor and learners but if we consider online self-learning the collaborative learning may also manifests itself in using the collaborations tools as chat, instant messengers, forum or others Web 2.0 technologies. The collaborative learning in online self-learning may be a result of intentional teacher's act or may be natural and informal reaction to interest field of a student. Moreover, as far as learners' satisfaction is concerned:

Students who perceived high levels of collaborative learning tended to be more satisfied with their distance course than those who perceived low levels of collaborative learning (So & Brush, 2008, p. 318).

Therefore, collaborative learning is a crucial part of both kinds of learning. It is logical that the same position has collaborative learning in blended learning formula (Allen & Seaman, 2003).

Gülbahar and Orçun Madran (2009) have indicated four major areas of need analysis during designing blended learning environment. These are: technology, instructors, students, and pedagogy. On the basis of their research, they have defined several factors existing in each field. These factors are important in terms of creation effective and satisfactory blended learning course. But the most important factors common for all areas are: communication, collaboration, and interaction. The figure below visualizes this theory.

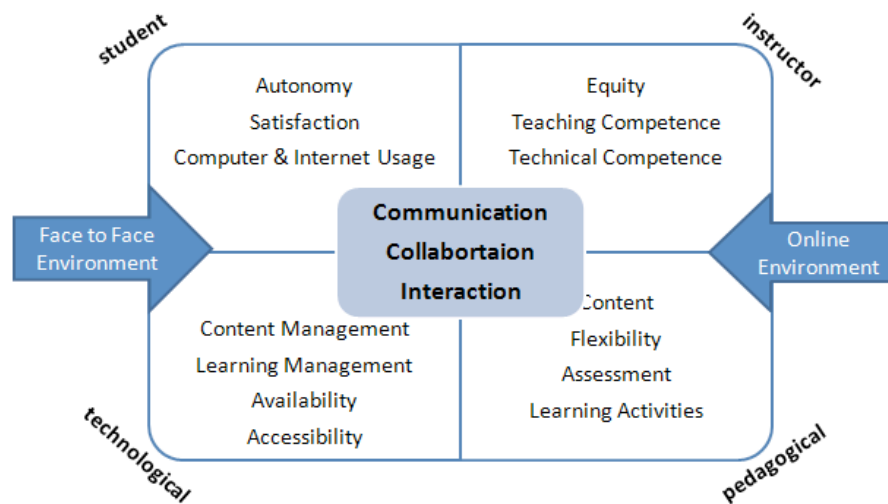


Figure 1: Blended learning components by Gülbahar & Orçun Madran (2009).

Curiously enough, the same research shows that the perceived communication, collaboration, and satisfaction levels of students differ according to their levels of computer and Internet literacy (such as level of computer usage, level of the Internet usage, frequency of computer usage, and frequency of the Internet usage). The higher proficiency in the computer skills, the higher evaluation of collaboration (and communication) as well as satisfaction (Gülbahar & Orçun Madran, 2009). But, what seems to be a problem in terms of students is that they not always recognize how to implement saving ICT informal knowledge in educational context.

What are the main tools of collaboration in online environment? It depends on the level of course designer and/or teacher's acquaintance of ICT possibilities as well as the level of ICT students' literacy as mentioned above. While planning exercises, a designer can introduce online collaboration by using discussion in forum or during web conferences, resources sharing for creating common project or working together on wiki's content, not to mention large scale of online materials presentation possibilities. But a special area of using ICT for reinforcing collaboration is assessment and giving feedback in blended learning course. The teacher can benefit from e-mails, dedicated web sites, forums, learning platforms and social sites for giving an immediate feedback and doing an individual as well as group assessment. What is more, these tools give an opportunity of peer assessment, providing informal feedback on the tasks (Enerson et al., 2007). It should be underlined that there is still one important point in the collaboration matter: a distinction between collaborative learning and cooperative learning. In cooperative learning students do the subtasks independently and then provide one, common solution. In collaborative learning working on the tasks always in groups and in interactive, communicative and synchronized way (Curtis & Lawson 2001). However, the task division into groups or, rather, roles (observer, evaluator, motivator etc.) is something natural and could be an effective collaboration element (Dillenbourg et al., 1996).

### **Success stories and lessons learned from the both COMBLE courses**

Taking into consideration wide literature review and numerous experiences of different educational institutions, it is worth underlining that the idea of blended learning – generally groundbreaking, up-to-date and prospective – also may cause some problems. Both teachers/instructors, administrators and students may not have sufficient knowledge about the effective combining online and traditional course or, even if they have such knowledge, they may lack experience, or they may not know how to benefit from it. Most often, students are familiar with the Internet and its tools but – as we mentioned above – they often do not have experience in using them in educational context. On the other hand, we have teachers/instructors who have traditional teaching background and may find it difficult to integrate it with ICT. What also may cause a problem is the need for

combining different pedagogical methods and learning activities into face-to-face classes with e-learning. Furthermore, at the institutional/administrative level, there are a lot of challenges ahead of administrators, related with specific construction of the course beginning from planning, through implementing, till evaluation of such a course. To sum up, administrators, instructors and learners are lacking the relevant organizational, methodological and technical skills and experience (McLaughlin & Mitra, 2001; Dirckinck-Holmfeld, 2002).

Within the EU-funded multilateral ICT project *Community of Integrated Blended Learning in Europe* (COMBLE) we conducted research on how to be successful with blended learning and how to prepare students, teachers and administrators to this form of education. It is the overall objective of COMBLE project and all its participating partners from three areas of education: higher education, vocational and continuing education, from four countries: Germany, Denmark, Poland and Estonia.

The main objectives of the project are:

- *To assist administrators/managers in determining what is needed to implement successful learning outcomes in blended learning scenarios.* To this effect, a Reference Model of Blended Learning Readiness is being developed, applied, and evaluated.
- *To create a living community of Blended Learning Experts and instructors/trainers to share knowledge and experience regarding the implementation and evaluation of blended learning methodologies.* Therefore, Methopedia, a European wiki-based community site (with methodological, informational and technical recourses concerning blended learning), is set up.
- *To improve educators'/trainers' ICT competencies to facilitate and design for interactive and collaborative learning.* Blended Learning Train-the-Trainer Course, the tool of this aim, is set up and implemented first among the project partners. This course takes advantage of innovative didactical methods and is based on collaborative learning.
- *To empower learners for using BL by providing them with a standardized baseline knowledge of blended learning tools, methods, and skills.* In order to realize this objective, the European Blended Learning Driving License course was created. This course is based on self-learning online course with supporting of virtual learning platform.

Because of this meaningful knowledge gaps in instructional designing or usage of blended learning methods and techniques above mentioned and according to main objectives of the COMBLE project, two different courses were developed and conducted: one for students (*Blended Learning Driver's License Course*) and the second one for teachers (*Blended Learning Expert Course*). This paper will present them in the context of application the collaborative learning as an element of ICT supported course.

The first of created courses (BLDLC) is a typical self-learning course (multimedia course with e-learning platform support) and the second one (BLEC) uses methodology of collaborative and problem based learning (e-learning platform and lectures in Second Life). Taking into account different needs of these two target groups different methodologies are used in both cases. Collaborative learning in the case of student course is a subject to be learnt and in the second case (course for teachers) it is the way the participants are learning.

Students, as mentioned above, often have problems with applying blended learning tools in the process of learning. These students who are less familiar with ICT event don't know what the possibilities this technology provides. Thus, course designers decided to prepare self-learning online course which would introduce the students into the world of the tools allowing them to use available online resources to supports the traditional education. The content of the BLDLC was divided into a few parts. Firstly, students could learn about blended learning in general terms and get to know the definitions. Then, they obtained information about online learning technique, their own learning styles and also about Virtual Learning Environment. The next part of the course dealt with collaboration and communication in blended learning as the main body of this learning methodology. *Collaboration is everything* – that was a keyword of this part. Students could find there an explanation of synchronous and asynchronous communication, and then the various tools of communication were presented. Learners could find out and learn how they work (doing the exercises): forum, e-mails, chat/instant messenger and Web conferencing. Another part of the course concerned social aspects in online supported learning, based on Web 2.0 instruments: blogs, virtual galleries,

wikis, video sharing, podcasts, and social networking sites. At the end of the course the psychological problems were covered (motivation, time management, resources management, searching requested information in online environment). The course and the participants were moderated and guided by the tutor on the Moodle platform where the additional tasks, place for sharing experiences and a final test were put.

Obviously, the most important parts of BLDLC were the second and the third part. The second part concerned collaboration directly. The third part, relevant to the tools of Web 2.0 trends, also dealt with collaboration but in an indirect way. Because in fact, what are creation of Wiki, taking part in the social networking sites, exchange of virtual video or voice resources? Here, collaboration is placed in the defined, interactive and open environment where its main sense is accomplished in the social space.

Generally the collaboration questions in BLDLC course were assessed well with average 4,5 points in a 5-point scale. The participants appreciated the course content and its organization. However, the comments like this also appeared: “maybe the course should be longer and connected with more time of synchronous activities”. The importance of collaborative aspects of blended learning possibilities was assessed quite high – between average 4,125 and 4,75 points. As the students indicated almost all collaborative aims achieved (only the ability to operate and use the six tools of social interaction: blog, virtual gallery, Wiki, You Tube, podcast and social-networking sites gained, on average, less than 4 points) – the effectiveness of the course could be classified as high. Knowledge about collaboration in ICT supported learning is really needed and an organized content of the appropriate course came across students expectations.

Blended Learning Expert Course was prepared as an online course, using PBL as a fundamental didactical approach and PBBL as a wide learning strategy. But the most important technique used in this course was collaboration of all the participants. The main objective of the course was to provide the participants with a combination of conceptual, theoretical and practical strategies with regard to designing, implementing and teaching/training courses of different duration in blended modality (starting from face-to face course and with available online tools) using an overall PBL approach. The collaboration appeared during asynchronous, written communication on the Moodle platform and also during synchronous, oral activities in online world (Second Life). As far as SL is concerned, the course took advantage of innovatory forms of cooperation with virtual world offers. The participants, not having the possibility to interact with each other in real life (international teams), could become avatars and participate in a common event in the same place and at the same time. They had an opportunity to run live discussions which was great from the facilitators’ perspective, giving a chance for an immediate feedback, quick assessment and appropriate reaction.

One of the exemplary activities in SL during the BLEC course could be „the opinionater”. This exercise is about expressing participants’ opinions on the topic chosen by the teacher. It is based on an active participation of learners who are to express their opinion on a given subject by choosing one of the opinions (agree, against, neutral, etc.) placed on the special platform. Thus, this exercise is a kind of discussion based on virtual communication and synchronous participation.

Whole course lasted 6 weeks, with 9 lectures in SL and many asynchronous discussions on Moodle forums. Participants, divided into national groups, had an objective to fulfill (developing a miniproject related to real life and based on PBBL approach). After finishing the course the participants have evaluated the particular indicators, together with group collaboration and role of the facilitators in the course. Here are a few opinions from this evaluation discussion:

*I think learning in the international surroundings was very "enlightening" and I really enjoyed that!*

*I am still motivated to be active in Moodle and SL because of possibility to share experiences and points of view. Facilitators’ propositions stimulated my exploring SL as an educational platform. That was definitely the best part of the course. The facilitators were excellent. The atmosphere and motivation during the course was excellent.*

*It confirms what I maybe knew before: No one can be learning by a system alone. The systems are just supporters for all the good intentions and the heavy work done by the facilitators.*

*The team process has been excellent with lots of good discussions.*

*I learned a lot from Comble members in SL. Very useful was reading forum.*

*I feel connected of course mostly to the Danish team but also to the rest of the participants in a way, that I never thought possible after 6 weeks working together only online and never meeting in RL. I have really learned a lot too.*

To sum up, the lesson learned from this course: the collaboration and communication as a technique used in experts learning is really fruitful and effective during realization of the task based on the PBBL approach. The facilitators of the course, summarizing the evaluation and participants' opinions underline that the course as a whole could not be considered as a total success. Particularly, it proves not to fulfill the main purpose of the course because from the teacher's perspective the students could learn not "how to" prepare BL course but "what actually is" BL course. The number of planned activities (as SL lectures) was too large in relation to quite short duration time. What is more and curiously enough, there were some problems with cultural differences in what is to be considered the standards in working on the projects. However, the collaboration part of the course (leading in an innovative way) was a huge success and beside of being a tool for proper task preparation, it turned into an instrument of building the social community. The opinions were divided in what is concern the teams' members. Some of the participants would like to work in international but interest-focused groups. Others enjoyed national teams as more cultural and language "tolerant". It could constitute an inspiring aspect of another research – if we agree that collaboration is something good in ICT supported course. The question is how to organize people working in the international environment and being at different educational levels and having various needs. Likewise, the opinions about SL as a collaborative milieu were diversified, some of the participants pointed at too little time for asynchronous effective discussions on the platform and too much involvement into virtual meetings.

### **Suggestions on how to use collaborative learning in remedial course**

We can also benefit from the outcomes of research on collaborative blended learning courses while we try to design effective ICT supported remedial courses in the frame of another European project STEP - *Studies on Transitional Electronic Programs*. Remedial courses are specific as their participants very often have different learning needs, competences and different social and educational backgrounds. They are also a challenge for teachers or designers who have to prepare one effective course for participants with a variety of needs. Many remedial courses are supported by ICT. The question which may appear: are collaborative learning tools needed in remedial courses and if so for what?

STEP Project was focused on analyzing of traditional and remedial courses – both real examples of the courses in European countries and world literature concerned the remedial education in general. Four partners in the project – the educational institution from the Netherlands, Belgium, Lithuania, and Poland – worked on collected data to choose the best practices and decide how to support remedial courses in the most effective way by ICT methods. The main aim of the project was to develop a framework of assessing and comparing (online) supported preparatory transitional programs. One of the actions in STEP project was gathering the empirical data on three levels – first from the partners' institution, then from each partner country institutions and finally from various European institutes.

This research was conducted with the use of an online survey consisting of questions regarding didactical and organizational aspects of remedial teaching. The kind of the learning subject, didactical methods, general objectives of the course and, obviously, ICT support were taken into account. The survey took place between February and May 2009. The 118 courses from 65 institutions and from 22 countries were analyzed. One of the crucial parts of the survey was evaluation of collaboration (and communication) use in remedial courses. Application of this learning method or its elements seems to be very important during transitional programs planning. Nowadays, we have to deal with a large number of international students within Europe. Their presence on the remedial courses rises increasingly because of necessity to be flexible and open not only on the educational area but also on the dynamic job market. They have to deal with cultural differences, not to mention the dissonances

between levels of countries' educational systems. Collaboration can be a kind of a factor combining different students' needs, expectations and cultural conditions during common work in a course group. The involvement in learning course subject by using collaboration methods and tools, especially when they are ICT supported, lets the students not only improve their knowledge but also defeat communication and multicultural problems.

The results of STEP research show that area of collaboration work (vs. individual work) is one of the five dimensions providing characteristics of the remedial course. From 118 courses, 57 were specified as the courses which used collaboration method. Curiously enough, these are the courses concerning language and social disciplines rather than science. This phenomenon could be explained by higher ability of collaboration in social sciences in which education seems to be less formal, less focused on rigid knowledge, more skill- and cooperation-oriented. In this range of courses, collaboration is possible and expected, as the factor both facilitating the learning process and having value on its own. Another observation from project research is that, the more ICT in remedial courses, the more collaboration. It results from a wide range of possibilities of effective collaboration instruments which are accessible when ICT tools are used. It should be noticed that collaboration in social "soft" remedial courses does not exclude using individual work, which is also applied in these courses. But it is worth underlining that with the use of blended learning techniques, the use of the individual work is decreased.

However, in the global interpretation of the research results, it is evident that collaboration as learning methods or techniques is used in almost all analyzed courses. Only one group of 22 courses from science "hard" area is firmly classified as collaboration free. It leads to the statement and recommendation that collaboration is needed in remedial courses and is introduced especially if ICT is used. As mentioned above, collaboration not only provides the students with more effective learning of the subjects, but it is also integrated and acculturated in a new social environment faster than the one focused only on an individual work.

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