

# Blended learning in online teaching. Design strategies and future developments

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## Abstract

The contribution intends to look at blended learning from an unusual point of view, beyond its being an increasingly widespread option for face-to-face teaching, to consider it as a constitutive element of a completely online educational path. There are reasons to believe that blended activities, within a predominantly online educational path, acquire a specific meaning in relation to areas such as the presence of the educator in online contexts, the interactions between students, teachers and contents, the motivation to learn, etc. The research question is as follows: the blended activities in an online learning course can be designed in the same way as with students following face to face teaching? The contribution proposes a research design, to answer the research question expressed above, with the participation of teachers and students involved in face to face activities during their online degree courses of a Italian telematic university.

## Keywords 1

Blended learning, online learning, tutoring, telematic university

## 1. Introduction

The blended learning as opportunity for mixed face to face and online learning supported by technologies [1] represents a well-known option in different educational contexts. In the present situation the Covid-19 emergency asks us to rethink our teaching and learning practices.

The present contribution focuses on an unusual perspective on blended learning. Usually, the blended approach is looked starting from presence learning environments, we would like to investigate the implementation of blended learning solutions by the point of view of teachers and students involved in online learning.

Nowadays there is a wide offer of online courses in higher education and continuing education, from university courses to MOOC. In Italy the number of higher education courses raised significantly even before the Covid-19 contingency [2].

The research question is as follows: the blended activities in an online learning course can be designed in the same way as with students following face to face teaching?

The hypothesis below our research proposal is that the design of online activities for students involved in face to face teaching is different from the design of face to face activities for students involved in online learning.

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In the following article we present a research plan to be implemented in one of the Italian online universities with the participation of teachers and students involved in face to face activities during their online degree courses.

## 2. The blended solution

To understand what the term *Blended Learning* really means, it is necessary to refer to the definitions reported in the *Handbook of Blended Learning: Global Perspectives, Local Designs*[3]. The three most commonly mentioned definitions of blended learning are:

1. Blended Learning as combining instructional modalities (or delivery media) [4, 5, 6,7, 8]
2. Blended Learning as combining instructional methods [9, 10, 11]
3. Blended Learning as combining online and face-to-face instruction [12, 13, 14, 15]

According to Graham The third definition is the most accurate because It also emphasizes the central role of computer-based technologies in blended learning.

The widespread availability of digital learning technologies in Higher Education contexts has led, for example, universities to adopt blended learning solutions, thus alternating face to face learning experiences and computer-mediated learning experiences.

Osguthorpe and Graham [16] identified six reasons that one might choose to design or use a blended learning system:

1. pedagogical richness
2. access to knowledge
3. social inter- action
4. personal agency
5. cost-effectiveness
6. ease of revision

Among these reasons for the adoption of *Blended Learning* in the context of Higher Education we find a higher possibility of access combined with the flexibility of the educational system.

Thanks to *Blended Learning*, students do not give up on the convenience offered by a mixed environment or even the social interaction they are used to in a face to face class.

The Blended Learning classroom is an extended classroom, which is made up of spaces for online interaction, and is a spaced classroom as the lessons are distributed online and offline.

Also the Blended Learning classroom is an intensive classroom [17] that compacts face-to-face teaching in a few days and interposes a period of off campus work between one group of lessons and another; it is a classroom that transforms presence as a space for group work, discussion, problem solving, metacognitive teaching.

These peculiarities that belong to Blended learning inevitably have an impact on teaching.

First of all we stress the modification of the professional practice of teachers: in the Blend Solution teachers must program explicitly, as well as produce materials such as video lessons, asynchronous activities, e-tivities, in-depth materials.

Teachers must also consider technology as an integral part of their teaching by assigning it an important role in their course proposed to students.

Another change to reiterate is the change in assessment: in the Blended Solution it is necessary to adopt widespread assessment techniques that are established in a scenario of expansion of the quantity and quality of the tests.

It is preferable to adopt a formative exams' system rather than prefer a summative assessment at the end of all the lesson prepared.

Blended Learning leads to changes also in the organizational sphere. This means that there are aspects on which it is necessary to work from a system organization point of view, such as the introduction of new professional figures, such as the e-tutor and the e-teacher, and it is also necessary to work on improving the technological infrastructure.

## 3. Online higher education in Italy

Analyzing the data provided by MIUR (University, School and Ministry of Research), it appears that in 2018 in Italy there was a didactical proposal consisting of 100 online university courses, of which 10 offered by state universities and 90 by private online universities.

Overall, there are eighteen Italian universities engaged in providing online university courses; the educational offer includes 56 university degree courses with a duration of 3 years for university students, 2 courses with a duration of 4 years for undergraduates in law, 42 master's courses with a duration of 2 years for graduates. In the latter period, the number of online university courses has recorded a slight decline (in 2016 the online university courses available in Italy were 105); even if the data indicates that university courses have slightly decreased, at the same time we can say that in less than a decade the students have increased by about 175%.

In fact, during the A.Y. 2010/2011 the students were about 40 thousand, according to the most recent data published by MIUR relating to the A.Y. 2019-2020, there are about 110 thousand students enrolled at the private telematic universities in Italian language. The increase of almost 25% recorded during the last year was significant, probably also motivated by the current health emergency due to the Covid-19 epidemic.

Always referring to the data provided by MIUR, in December 2020 there were ten Italian telematic universities. We can say among these, Ecampus is the second in terms of number of students in the academic year 2019/2020, having a total of about 21,000 students; the primacy belongs to the Pegaso University headquartered in Naples with about 45,000 students, while Uninettuno di Roma is the third with about 15,000 students. An interesting data can be recorded in the increase in enrollments compared to the 2018/2019 academic year: looking at the data relating to these three universities, Uninettuno maintains the third position having recorded an increase of 14%, Pegaso falls to second place with an increase by 17% while Ecampus rises to first place with an increase of 31%.

### **3.1. Ecampus case study**

Ecampus is one of the 11 Italian online universities and offers 24 degree courses in the following areas: economics, law, engineering, literature and psychology. Overall, there are 15 three-year degrees, and 9 master's degree. The university also provides continuing education and professional training courses.

As of December 15, 2020, there were a total of 21,888 students, the faculty that has the largest number of students is psychology (about 39% of the total), followed by law (18%), engineering (16%), literature (15%) and finally the faculty of economics (12 %).

### **3.2. In-presence-Tutor and intensive weeks**

In addition to online materials and activities some face-to-face teaching are made available to students: face-to-face tutors and intensive weeks. At the time of enrollment, each student is assigned an Online Tutor (TOL), a professional figure who takes on the task of realizing the university's commitment to personally accompany each student's study path. The fundamental task is to plan the weekly delivery of online lessons, identifying a sustainable and effective study pace.

In addition to the TOL, each student can obtain the support of face to face tutors. This time the goal is to offer the student the opportunity to physically meet a competent person both from the point of view of specific subject content and from that of learning methodologies.

As for the intensive weeks, this is an important learning opportunity offered to all students in at least two periods of the year: during the winter holidays and during the summer months. In these two periods, each professor are asked to organize a 5 days intensive seminar, during which the focus is in a in-depth study of the topics of the course, group exercises and practice in the self-assessment of acquired knowledge. These weeks also represent an opportunity for preparation to effectively take the exam.

### 3.3. Workshops and indirect internships

Two more types of face-to-face teaching is dedicated only to students attending specific degree courses (i.e. physical sciences, biology, engineering): workshops and indirect internships. Workshops are designed to practice experimental activities or special physical training; the implement effective learning in the physical space of a laboratory, capable of stimulating the active participation of students and experimentation in the field of skills.

The indirect internship is a set of meetings to reflect on what was done during the direct internship, that is, what is regularly activated in different professional contexts outside the university but affiliated with it.

The indirect internship has a duration of 100 hours, is followed by the internship tutor who carries out his service at the Faculty of Educational Sciences; as regards the regulatory aspect, the document relating to the course of study of the same faculty in paragraph 2 of article 7 includes planning and re-elaboration activities in groups and individually.

The attendance to direct and indirect internship activities is obligatory. The internship cannot be usually delivered remotely and is documented in a portfolio and in a project work. The internship includes mentoring and peer-coaching strategies and moments of discussion and reflection in groups, carried out with the coordination of the internship tutor, on internship activities. Given the health emergency situation we are going through, many students were unable to carry out direct internships; for this reason, the 100-hour course provided for the indirect internship saw the development of synchronous activities and as well as objectives to be achieved independently and to be shared with the reference tutor.

## 4. The research proposal

The first phase of the research will be an extended literature review on the topics of blended learning and online learning, it can be useful to start from some recently published literature reviews [18, 19, 20, 21, 22]. The focus of the review will be on the identification of a comprehensive set of design templates implemented in blended learning environments. The hypothesis driving this first part of the work is that in blended learning literature the focus is mainly on online activities, considering its potential contribution to student motivation, quality of learning, socialization and learning outcomes. This is because most of the studies are focused on online activities organized in face to face courses or curriculums, while our research is focused on face to face activities implemented in online courses. The outcome of this phase will be a theoretical framework for the following steps, in term of templates, examples, validated research tools.

Teaching and learning are complex factors and are not influenced only by the kind of teaching format.

The literature review [18] focused on factors influencing students' learning experiences in e-learning, online blended learning and learning in higher education. It shows that among many factors, some seem more salient than others: presence of the educator in online contexts, interactions between students, teachers and content and deliberate links between online and offline activities and between activities related to campus and practice. In particular, that e-learning/blended courses should be designed to foster coherence between online and offline activities, between campus-related and practice related activities and between students, teachers and content.

Other studies [19] consider the analysis of online learners' important for future research characteristics, including the type of learning, self-regulation and motivation in online learning for the intellectual advancement of students, it is extremely necessary, for this studies, to design online courses beyond the simple use of online platforms. A strong pedagogy is as fundamental as the state art technology to take full advantage of the use of technology in education. Without an efficacy pedagogy for learning and teaching, the effectiveness of using educational technology will do be decreasing. It is also important to facilitate interactions between students and students, students and instructors, students and course content/assessment tools with timely feedback e student learning

monitoring [23]. Students need to understand their learning progress and how to select and use reliable on line educational resources to learn more about high quality knowledge.

In blended learning need to move “from distributors of knowledge to designers of learning experiences.” While it still falls to the teacher to manage content and assessment, a student-centred learning paradigm necessitates a collaborative learning environment where learners explore, enquire, analyse, and engage in authentic learning activities [24].

The second step will be the analysis of the face to face learning activities organized within the online degree courses of Ecampus university. As written before since the courses are fully online, the implementation of a blended method in this scenario take place with face to face moment in which students, teachers and tutors can meet and work together.

This part of the research will take place with a questionnaire submitted to the teacher that held face to face activities in their online courses in the last 24 months, the questionnaire will be focused on the perception of the presence activities effectiveness. On the bases of the questionnaire outcomes, it will be organized in deep interviews and/or focus groups to facilitate the emergence of implicit teaching practices.

The third part of the research will be focused on the analysis of students' opinions will be carried out through two questionnaire (one for the students and one for the teachers) as a tool to acquire useful information to activate and develop improvement in the teaching-learning process.

The questionnaires will be proposed on an open source platform.

The results of the evaluation carried out by the teachers will be related to those of the survey students.

For the teachers, the questionnaire investigates the usual teaching practices, beliefs and needs that the teacher has feels as urgent, the proposals for innovation in teaching, the perceived criticalities with respect to didactic action, supports useful for future improvement.

The questionnaire proposed to students, on the other hand, will investigate: interest and motivation to learn, need for support, willingness to relate, confidence with the digital technology, level of satisfaction.

The final part of the research will be focused on the comparison of the practices implemented in blended learning activities organized in online courses vs face to face courses in higher education. The expected outcome will be a set of recommendation about the best practices to be implemented to implement face to face learning activities in online learning environments.

## 5. Conclusion

The development of information and communication technology has brought a surprising and revolutionary challenge to the idea and practice of traditional education. Digital technology offers new opportunities to integrate face-to-face learning and online learning methods. In the future, there is a trend to use blended learning scenarios by combining various forms of learning and integrating a variety of ways to access content using the potential of digital technology.

The challenges in the online component of blended learning from students, teachers and educational institutions perspectives are focused on particular areas: for the students, self-regulation challenges and challenges in using learning technology; for the teachers, challenges are mainly on the use of technology for teaching; for the educational institution, the provision of suitable instructional technology and effective training support to teachers [20].

It is now necessary that the technological innovation, reached so far, become part of the teacher's professional identity, between presence and distance, through the reconstruction of new identity meanings recognizable only in the light of an authentic, meaningful and strategic learning on the part of the student [25].

Aligning with the reflections of Rivoltella [26], we think that it is not “informational literacy” that must grow up, but the “technological culture”, the one that allows to rethink the methods of construction, representation and sharing knowledge. In fact, to manage the media, operational skills are not enough but we need cultural and critical frames.

The university, in this process, plays a fundamental role as a driving force for continuous training of quality teachers and to respond to the needs, not only emergency ones, of the present time.

University is asked to redesign the training courses that propose technologies not as simple teaching support tools, but as cultural mediators, capable of affecting the logic and practice of the university institution also with regard to higher education and research [27].

Blended learning is a manifestation of the need, present in contemporary society, to learn and to share knowledge in lot of ways, flexible from a space-time point of view and customizable according to the multiple needs of the student.

Teaching and learning in a blended way leads to substantial changes in higher education and in all training areas in which it is used. Thanks to its flexibility, it allows us to maximize many positive educational functions, to respond to a plurality of educational needs and encourages the ability to manage the social and cultural change.

The success factors of a blended training proposal, by our point of view, are mainly linked to: the student's ability to interact and organize himself in a mixed environment; the good planning of the teaching and learning activities, the efficacy of the tutoring system, the quality of interactions with the teacher and between students, the needs and expectations of the student.

There is a need for further investigation to address the challenges of blended learning, also in light of the research we are preparing to do.

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## 6. References

- [1] C. R. Graham, S. Allen, & D. Ure, Benefits and challenges of blended learning environments. *Encyclopedia of Information Science and Technology*, (2005). 253–259.
- [2] P. Raviolo, Online Higher Education Teaching Practices, IC4E Tokioprocodings, Tokio (JP) 9-11/01/2019, ACM, ISBN: 978-1-4503-6602-1.
- [3] C. J. Bonk, C.R. Graham, (ed.), *The Handbook of Blended Learning: Global Perspectives, Local Designs*. John Wiley & Sons, 2006. ISBN: 978-0-7879-7758-0.
- [4] Bersin & Associates, *Blended learning: What works? An industry study of the strategy, implementation, and impact of blended learning*. Oakland, CA: Bersin&Associates, 2003.
- [5] M. Orey, Definition of blended learning. University of Georgia. Retrieved February 21, 2003, from <http://www.arches.uga.edu/~mikeorey/blendedLearning>, 2002.
- [6] M. Orey, One year of online blended learning: Lessons learned. Paper presented at the Annual Meeting of the Eastern Educational Research Association, Sarasota, FL, 2002.
- [7] H. Singh, C. Reed, A white paper: Achieving success with blended learning. Centra software, 1, 1-11, 2001.
- [8] I. Thomson, The next generation of corporate learning. Thompson, Inc. Retrieved July 7, 2003.
- [9] M. Driscoll, Blended learning: Let's get beyond the hype, *E-learning*, 1(4), 1-4, 2002.
- [10] R. House, Clocking in column. *The Spokesman-Review*, 2002.
- [11] A. Rossett, *The ASTD E-Learning Handbook*: McGraw-Hill, 2002.
- [12] J. E. Rooney, Blending learning opportunities to enhance educational programming and meetings. *Association Management*, 55(5), 26-32, 2003.
- [13] P. Sands, Inside outside, upside downside: Strategies for connecting online and face-to-face instruction in hybrid courses. *Teaching with Technology Today*, 8(6), 2002.
- [14] J. Ward, G.A. LaBranche, Blended learning: The convergence of e-learning and meetings, *Franchising World*, 35(4), 22-23, 2003.
- [15] J.R. Young, 'Hybrid' teaching seeks to end the divide between traditional and online instruction, *Chronicle of Higher Education*, pp. A33, 2002.
- [16] R.T. Osguthorpe, C.R. Graham, Blended Learning Environments: Definitions and Directions, *Quarterly Review of Distance Education*, 4 (3), 227, 2003.

- [17] S. Triacca, D. Bodega, P.C. Rivoltella, Blended solution and Higher Education. The case of the Catholic University: e-tutoring for personalization, *EducationSciences& Society-Open Access Journal*, 9(2), 2019.
- [18] A. M., Nortvig, A. K. Petersen, S. H. Balle, A Literature Review of the Factors Influencing ELearning and Blended Learning in Relation to Learning Outcome, Student Satisfaction and Engagement. *The Electronic Journal of e-Learning*, 16(1), pp. 46-55, 2018. Available online at [www.ejel.org](http://www.ejel.org).
- [19] H. Park, P. Shea, A review of ten-year research through co-citation analysis: Online learning, distance learning and blended learning, *Online Learning*, 24(2), 225-244, 2020. doi:10.24059/olj.v24i2.2001.
- [20] A. R. Rasheed, K. Amirrudin, A. Nor, Challenges in the online component of blended learning: A systematic review, *Computers & Education*, Volume 144, 2020.
- [21] V. Singh, A. Thurman, How Many Ways Can We Define Online Learning? A Systematic Literature Review of Definitions of Online Learning (1988-2018), *American Journal of Distance Education* 33(4):289-306, 2019.
- [22] K. Smith, J. Hill, Defining the nature of blended learning through its depiction in current research, *Higher Education Research and Development* 38(4):1-15 Follow journal, 2019. doi: 10.1080/07294360.2018.1517732.
- [23] G. Siemens, D. Gašević, S. Dawson, for the digital university: A review of the history and current state of distance, blended, and online learning, 2015. Retrieved 2018, from <http://linkresearchlab.org/PreparingDigitalUniversity.pdf>.
- [24] R. Gleadow, B. Macfarlan, M. Honeydew, Design for learning – a case study of blended learning in a science unit [version 2; peer review: 2 approved]. *F1000Research* 2015, 4:898, 2015. doi:10.12688/f1000research.7032.2.
- [25] N. Entwistle, V. McCune, The Conceptual Bases of Study Strategy Inventories. *Educational Psychology Review*, 16(4), 325-34, 2004.
- [26] P.C. Rivoltella, Tecnologie, qualità della didattica e formazione degli insegnanti. [Technologies, quality of teaching and teacher training] in Rivoltella, P. C., Ferrari, S. (ed). *Scuola del futuro? Appunti di una ricerca intervento sull'innovazione tecnologica* [School of the future? Notes from an intervention research on technological innovation], Milano, EduCatt, 2010.
- [27] I. Loiodice, Università, qualità didattica e lifelong learning. Scenari digitali per il mutamento. [University, didactic quality and lifelong learning. Digital scenarios for change.] Roma, Carocci, 2011.