

To blend or not to blend?! That's the e-learning question!

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Abstract— This paper aims to discuss and reflect about the importance of blended learning. Today blended learning became very popular but it is important find the best ways and the best types to deliver and “consume” it. It is common recognize blended learning as a mix of media and delivery. However there is very important to find out the “right mix” because it is known that different problems need different solutions. When we talk about higher education we deal with adults and we assume that students want and need to learn just enough to become more effective at their future jobs. The so called science of how to teach through the internet is still being developed and in this paper is discussed the “evolution” of e-learning towards blended learning... But we assumed that every successful e-learning will become a blended learning course... The problem is to know how and if we choose the “right mix”. This “mix” should promote at least three different dimensions: thinking less about delivering instruction and more about producing learning, reaching out to students through distance education technologies, and promoting a strong sense of community among learners. In this paper some models were reflected by taking in account the main reasons of their choice as well as the way to put them in practice.

Index Terms— blended learning; e-learning; models of blended courses; strategies for blended courses.

I. NEW CHALLENGES AND NEW FOCUS FOR EDUCATION

From the last century we felt a great pressure on universities to be able to answer effectively to the new challenges from society and to seek new focus for education. As argued by [1] the first focus of change as a paradigm shift were re-inventing by the universities the purpose and thinking less about delivering instruction and more about producing learning in student-centered environments. This means that there was a worry to move away from a faculty-centered and lecture-based paradigm to a model where learners are the focus and where students are taught critical thinking skills. The main role of the teachers were to support and to ensure that students had opportunities to their intellectual growth and self-autonomy, and by instilling in them an awareness of important social issues, thus supporting their ability to become more productive members of a society as lifelong learners working toward the common good [2]. So what is seek is the promotion of an education with a strategy of inquiry when students learn how to think, learn, produce, and evaluate knowledge, providing the basis for lifelong and independent learning. As stated by [3] change is not easy to implement because there is a significant pressure from within universities to preserve the *status quo*. Most

of the cases teachers teach as they were taught and resist changing and are more concerned in their research and investigation with not too much free time to change curricula and pedagogy because they feel that for the potential rewards are not worth the risk and also because most teachers in higher education do not know enough about effective instructional activities based on blended learning [4]. However, several learning theories are relevant to the learning-centered university classroom i.e. approaches to learning that promote social constructivism, learning within a social context which will enable construction of knowledge rather than transfer of knowledge and will allow students to construct knowledge for themselves.

Distance education and online courses may provide another shift from the traditional classroom that is already a pervasive element of higher education and continues its rapidly expansion. However, it must be referred that not all the students and teachers react on the same way from enthusiasm to disabling fear because some of them experienced difficulty to adjust to the structure of online courses, management of their time and the maintenance of self-motivation [5]. A research carried by [6] found several problems about the conduction of online courses (stress, anxiety, isolation, confusion, lack of prompt or clear feedback from the instructor) because it is crucial that instructors must have adequate skills in using Computer Mediated Courses (CMC) to facilitate learning and to nurture sense of community. This sense of community is very important for the success of an online course because their members must feel that each member matter to one another and to the whole group, and a shared faith that members' needs will be met through their commitment to be together where both students and teachers share similar values, ideals, and goals [7]. In this scenario blended learning may be important due to its more flexibility and convenience as argued by [8] as a hybrid from traditional face-to-face and online learning so that instruction occurs both in classroom and online, and where the online component becomes just a natural extension of traditional classroom learning. Because of the inherent flexibility of blended learning the course design may supports the blending of different times and places for learning by offering some of the conveniences of fully online courses without a complete loss of the importance of the face-to-face contact that potentially may result in a more robust educational experience than traditional or fully online learning can offer. [9] also pointed out that in academic settings blended learning must be the result of a combination of good practices of face-to-face and online environments. Blended learning creates a flexible

environment in which students are engaged in their own learning experiences and in which social interactions between peers and teachers are unrestricted by time and location [10]. As [11] argued blended learning has the potential to integrate immediate, spontaneous, and rich verbal communication with reflective, rigorous, and precise written communication, as well as visually rich media and simulations. When blended learning will become more prevalent, educators will discover new ways to foster communication with and among students, will gain insight into students' learning activities, will appeal to diverse learning styles, and will improve learning outcomes [12]. In the opinion of [13] considering blended learning as a knowledge construction process with learner intention and self-consciousness, learning activities need the support of reflection and self-regulated learning by requiring that students must have the consciousness and capability for self-regulated learning. The basics for self-regulating learning are planning, monitoring, and reflection that must be put in practice.

II. MULTI-DEFINITIONS OF BLENDED LEARNING

It is very common assumed that every process of teaching and learning is blended learning. The most known and consensual definition of blended learning is: "Blended learning represents systems that combine face-to-face instruction with computer mediated instruction." This definition reflects the combination from two historically separate models of teaching and learning i.e. face-to-face learning systems and electronic distribution of learning systems with the emphasis of the central role of computer-based technologies in blended learning.

The term "blended learning" had gained a description of different and particular forms of teaching and learning with technology, [14] considered three different combinations on this issue: a) The integrate combination of traditional learning with web-based online approaches; b) The combination of media and tools employed in an e-learning environment; c) The combination of a number of pedagogic approaches, irrespective of learning technology use. When comparing with the previous definition, the second concerned the use of a combination of various delivery modes rather than privileging e-learning. The third proposal presents, according to [15] a more substantial and richer set of learning strategies or dimensions that can be blended in ways such as: a) offline with online; b) self-paced with live and collaborative; c) structured with unstructured; d) custom content with off-the-shelf...

Another opinion about what means "blended learning" is proposed by [16] identifying four concepts: a) Combining or mixing web-based technology to accomplish an educational goal; b) combining pedagogical approaches to produce an optimal learning outcome with or without instructional technology; c) combining any form of instructional technology with face-to-face instructor-led training; d) combining instructional technology with actual educational tasks. In resume, according to [16] blended learning means different things to different people that may illustrate its untapped potential. In the opinion of [3] blended learning may be also considered as a learning program that it is cut into modules by determining the best medium to deliver each module to the learners.

In order to give a better insight about the difficulty of the definition of blended learning is presented by [17] who describes blends in terms of the focus for learning or about intended learning: a) skill-driven learning which combines self-paced learning with instructor or facilitator support to develop specific skills and knowledge; b) attitude-driven learning which mixes various events and delivery media to develop specific behaviors; c) competency-driven learning which blends performance support tools with knowledge management resources and mentoring to develop workplace competencies. According to her point of view there are some purposes with some kind of intended learning outcomes with a mix and combination of resources, learning and pedagogy. As [18] pointed out blending learning is not a new idea because a variety of pedagogical approaches are quite normal and have been used in every educational institution, for example, lectures, seminars, case studies, tutorials, role play, action learning groups... The difference now is that information technology and the development of virtual learning environments are used to support the learning process. In fact, these technology-rich environments are making a major impact on our thinking about pedagogy and learning theory.

III. MODELS, DESIGNS AND REASONS FOR BLENDED LEARNING: SOME REFLECTIONS

The assumption that blended learning is the result of a "mix" is quite consensual. But what kind of "mix"? What and how may be "mixed" and delivered? [19] argued that the issue of the choice of delivery methods becomes a central one and remarked that another critical factor in the success of the courses was the maturity of the participants as 'e-learners'. The reason for that is due to the fact that a blended programme should be less directed than a traditional course of e-learning. The blended course must offer multiple paths to a common goal or to sequence differently methods in a particular way that provides the most effective results for the greatest number of learners. It is also evident that one of the more grown-up aspects of blended learning is its very high flexibility because it is not pretended to offer a one-size-fits solution for every type of organizational learning community.

The role of teacher(s)/instructor(s) is very important because in blended learning he might have multiple individuals, each taking a modality or role in the blend. Up front clarification of teacher(s)/instructor(s) roles is essential for success and the reduction of potential conflict and learner confusion. Good communications among teacher(s)/instructor(s) and careful planning is another important element in the success of blended learning. To reach this aim is also necessary be sure that as different segments of the blend are designed, all prerequisites are met by the previous learning objects. The management of expectations is important for teacher(s)/instructor(s) and learners to realistically perceive the benefits and work to be performed during the training or course. Another aspect is referred by [20] about a high level of interpersonal trust among the elements of the learning communities. According to them the development of trust in blended learning modules is directly related to the type of content being taught and the timing of the face-to-face event because it appeared that when people know there is a classroom experience planned later in the program, they might withhold trust until they meet each other face-to-

face. This raises a kind of surprise, and a further research, and may suggest if trust is more closely linked to course content or the expectation of meeting. In the opinion of [21] a blended design may ultimately deepen trust in a community because online activities have the potential to extend relationships after face-to-face sessions and, also argued that the amount of learner investment depends on the amount of value received from the community.

In the opinion of [22] it is possible to propose three categories of blended learning systems: a) enabling blends (the focus is on addressing issues of access and convenience in an attempt to provide the same opportunities or learning experience but through a different modality); b) enhancing blends (promotion of pedagogical changes with the inclusion of additional resources and some supplementary materials to be included on-line); c) transforming blends (promotion of a radical pedagogical change from a model where learners are just receivers of information to a model where learners actively construct knowledge through dynamic interactions only possible with technology). The challenge of finding blends in order to take advantage of the strengths of each environment and avoid the weakness. As [23] pointed out that the designers of blended learning systems should seek best practices for how to combine instructional strategies in face-to-face and computer mediated environments.

[24] propose a Learning Ecology Matrix from learning ecology to knowledge ecology. According to the viewpoint of [24] (2006), learning ecology includes four vectors from: «learner self-navigation» to «guided navigation», and «content delivery focus» to «experience and practice focus». Within this assumption the individual learners play a very important role in personalizing their own experience because they make decisions. The importance of the development of feedback modes, improved navigation cues as well as other meta-modalities for the ecological mix are very important. [24] also argued that it is important to envisage the possibility to move to a knowledge system because it enables the creation of an environment in which people are provided opportunities to gain knowledge or learning through methods and models that best support their needs, interests, and personal situations and learning styles. However, as argued [18] there was a general feeling that levels of dedication and motivation needed to be higher online than in traditional courses, and some students found it difficult to remain focused online.

It is important to realize that technology should not be used just and merely to emulate traditional methods of delivery information. The real challenge is to be able to identify the gains from applying technology and use these alongside existing best practices in multimodal delivery. [25] also stressed that it is essential that technology is not incorporated into programs uncritically. Because technology is not just another way of delivering courses and contents. Blended learning must be more because it is challenging our education practices and underlying epistemologies and theories. The design of blended learning courses must and needs to be grounded in education theories because if we design online courses and ignore education and learning theories, we are in danger of leaving learning to chance. [26] agreed by affirming that such innovative field experiences require institutional commitment and instructional designs that

support new forms of collaboration and extended notions of blended learning instruction. For this purpose, continuous staff development programs that emphasize course design and interaction strategies for blended learning courses, appropriate technical skills need to be integrated into a university system in order to improve the quality of blended learning [27]. We agree with [4] who also argued that blended learning resources need to be integrated with learning activities and embedded into online curriculum resources. The design of blended learning resources should be considered within the overall design of the curriculum in order to adjust to the vast new resources and activities of e-learning and classroom learning. Several models of instructional design usually correspond to classroom instructional settings, which fail to meet the requirements of blended learning because blended learning must be assumed as the integration of e-learning and classroom learning. In consequence, there is a pressing need to consider many instructional design questions and issues, such as those related to time distribution, the design of online as well as classroom activities, the relationship between resources and different learning modes, and the balance point of e-learning and classroom learning. For example, [28] proposed a model of pedagogical strategies for blended learning by presenting four different purposes of blended learning: a) Open interaction: the first purpose aims to create a small-group debate/discussion teams, encouraging integration of classroom lectures and readings in debate and discussion by assigning facilitator and wrapper; the need of integrating online activities in evaluation of student performance and reducing classroom time during online activities; b) Knowledge creation: the second aim provides the invitation of external experts to online classroom by combining asynchronous and synchronous online interactions, and promoting anchored learning by requiring students to preview materials for online discussion; c) Information distribution: the third purpose includes the post of articles to read before each class begins, the post of materials used during class to review afterward and also tracking students' viewing of articles and materials as well as sending personal messages to students who do not check articles and materials; d) Efficient management: the last purpose will allow electronic submission of assignments, the creation of a list of standardized feedback and the combination of this standardized feedback with personal messages.

Another example presented by [4] also shows the complexity and the need of the integration of multiple elements and variables. In their opinion the design procedures for blended learning include: Preanalysis, Activity and Resource Design, and Instructional Assessment Design. At the first step (Preanalysis) three different factors must be regarded: 1) a regular assessment of learners' prior knowledge, their learning styles and strategies; 2) content analysis of the curriculum (factual knowledge, conceptual knowledge, and, meta-cognitive knowledge); 3) environmental features analysis where the learning activities and organizational methods should be clearly spelled out and defined, thereby enabling the creation of an initial analysis report. At the second step (Activity and Resource Design) the authors suggest three sub-stages: 1) an overall design of blended learning (learning unit, delivery strategy, and learning support); the design of the unit (definition of performances, activity

objectives, activity organization, and the assessment of the unit); the design and development of resources (selecting contents, developing cases, presenting design and development); there is a focus on teachers' instructional methods for organizing course events and activities and also the basic principles for curriculum assessment; the most important difference from traditional instructional design is that it focuses on which activities and resources fit the e-learning context and which fit the typical classroom context; 3) the last procedure (Instructional Assessment Design) will promote the assessment of learning process, curriculum examination, and activity organization; this assessment design depends on the activity objectives, performance definitions, and the general environment of blended learning.

IV. CONCLUSION

We agree with Privateer [29] who argued that: "Opportunities for real change lie in creating new types of professors, new uses of instructional technology and new kinds of institutions whose continual intellectual self-capitalization continually assures their status as learning organizations." This assumption means that with blended learning there is possible to promote context where learning comes first and educational experiences are provided for learners anyway, anyplace, and anytime with emphasis on active learning through collaboration and social construction of understanding. Interaction may be considered as a «glue» that holds all these pieces together because interaction comes in different forms, not just learner and teacher, but also learner-to-content, learner-to-learner, learner-to-infrastructure, and learner-to-context. This must be assumed as a «learning ecology» instead of a blend of a traditional classroom and an e-learning platform. Because as [30] pointed out, and ecological system is basically open, complex, adaptive system comprising elements that are dynamic and interdependent and what makes an ecology so powerful and adaptable to new contexts is its diversity. Blended learning must have the ability to bring coherence and simplicity to an ever changing diversity of new possibilities for technology application. Moving forward, what will differentiate institutions from one another will not be whether they have blended learning, but rather how they do the blending and where they fall on blended learning spectrum.

An important caution is that blended learning is not strictly an instructional phenomenon because all aspects of the institution must be involved in a systemic way to enable student and school success in the online environment. When all those elements are in place and functionally effectively, blended learning may produce satisfied and high-achieving students, professionally satisfied school, opportunities for innovative and responsive program design, more efficient and effective use of facilities, and improved relationship with the community. According to [31], [32] and [33] the blended learning model has the potential to transform because it can change online learning from something the institution does to something the institution is, and it can lead to fundamental changes in the way teachers teach and students learn, strategies for delivering services, and space needs and new resource use efficiencies. The norm today is to be proficient in face-to-face meetings but also to work asynchronously and electronically with other

stakeholders to achieve the desired learning outcomes. Future professionals must be able to electronically access the materials they need, when they need them, to solve a problem. Seldom do professionals consult textbooks when they leave the formal learning environment, so it makes sense to develop the competencies and skills to access information they need during they formal education. According to this, blended learning is an ideal approach to capitalize on the relative strengths of classroom and online learning and to develop the communication and information skills needed for successful future professional citizens.

If the desired reform and change occurs in European and Worldwide education and training systems, then a decade from now, we may find that every term Blended Learning has disappeared from our vocabulary with the seamless integration of technology into lifelong learning, whether in full-time or part-time education, in the workplace, at home, or in our communities.

REFERENCES

- [1] Barr, R. & Tagg, J. (1995). "From teaching to learning: A new paradigm for undergraduate education". *Change*, 27 (6),13-25.
- [2] Rovai, J. (2004). "Blended Learning". *The International Review of Research in Open Distance Learning*, Vol. 5, N° 2, ISSN: 1492-3831, 14-28.
- [3] Gardiner, L. (1998). "Why We Must Change: The research evidence". *Thought and Action*, 14 (1), 71-88.
- [4] Huang, R. & Zhou, Y. (2006). "Designing Blended Learning Focused on Knowledge Category and Learning Activities". In: Bonk, C. & Graham, C. (Eds) (2006). *The Handbook of Blended Learning: Global Perspectives, Local Designs* (pp. 296-310). San Francisco: John Wiley & Sons.
- [5] Marino, T. (2000). "Learning Online: A view from both sides." *The National Teaching & Learning Forum*, 9 (4), 4-6.
- [6] Hara, N. & Kling, R. (2001). "Students distress in web-based distance education." *Educase Quarterly*, 3, 68-69.
- [7] Swan, K. (2001). "Virtual interaction: Design factors affecting student satisfaction and perceived learning in asynchronous online courses". *Distance Education*, 22(2), 306-331.
- [8] Collis, B. & Moonen, J. (2001). *Flexible learning in a digital world: Experiences and expectations*. London: Kogan-Page.
- [9] Osguthorpe, R. & Graham, C. (2003). "Blended learning systems: Definitions and directions." *Quarterly Review of Distance Education*, 4(3), 227-234.
- [10] Dennis, A. et all. (2006). "The Cisco Academy: A Model for the Study of Student Success in a Blended Learning Environment." In: Bonk, CC. & Graham, C. (Eds) (2006). *The Handbook of Blended Learning: Global Perspectives, Local Designs* (pp. 120-135). San Francisco: John Wiley & Sons.
- [11] Owston, R., Garrison, D. & Cook, K. (2006). "Blended Learning at Canadian Universities: Issues and Practices." In: Bonk, C. & Graham, C. (Eds) (2006). *The Handbook of Blended Learning: Global Perspectives, Local Designs* (pp. 338-350). San Francisco: John Wiley & Sons.
- [12] Ross, B. & Gage, K. (2006). "Global Perspectives on Blending Learning: Insight from WebCT and Our Customers in Higher Education." In: Bonk, C. & Graham, C. (Eds) (2006). *The Handbook of Blended Learning: Global Perspectives, Local Designs* (pp. 155-168). San Francisco: John Wiley & Sons.
- [13] Jonassen, D. & Land, S. (2000). *Theoretical foundations of learning environments*. Mahwah: Erlbaum.
- [14] Whiteleock, D. & Jelfs, A. (2003). "Editorial: Journal of Educational Media Special Issue on Blended Learning." *Journal of Educational Media*, 28 (2-3), 99-100.
- [15] Singh, H. (2003). "Building Effective Blended Learning Programs." *Educational Technology*, 43, 51-54.

- [16] Driscoll, M. (2002). Blended Learning: let's get beyond the hype. *E-Learning*. Retrieved July 02, 2008, from <http://elearningmag.com/ltimagazine>
- [17] Valiathan, P. (2002). *Blended Learning Models*. Retrieved June 29, 2008, from www.learningcircuits.org/2002/aug2002/hofmann.html
- [18] Jones, N. (2006). "E-College Wales, a Case Study of Blended Learning." In: Bonk, C. & Graham, C. (Eds) (2006). *The Handbook of Blended Learning: Global Perspectives, Local Designs* (pp. 182-194). San Francisco: John Wiley & Sons.
- [19] Oliver, M. & Trigwell, K. (2005). "Can 'Blended Learning' Be Redeemed?" *E-Learning*, Volume 2, Number 1, 17-26.
- [20] Sergiovanni, T. (1994). *Building community in schools*. San Francisco: Jossey-Bass.
- [21] Hanson, K. & Clem, F. (2006). "To blend or not to blend: A look at community development via blended learning strategies." In: Bonk, C. & Graham, C. (Eds) (2006). *The Handbook of Blended Learning: Global Perspectives, Local Designs* (pp. 136-149). San Francisco: John Wiley & Sons.
- [22] Graham, C. (2006). "Blended Learning Systems: Definition, Current Trends, and Future Directions." In: Bonk, C. & Graham, C. (Eds) (2006). *The Handbook of Blended Learning: Global Perspectives, Local Designs* (pp. 3-21). San Francisco: John Wiley & Sons.
- [23] Osguthorpe, R. & Graham, C. (2003). "Blended learning environments." *Quarterly Review of Distance Education*, 4(3), 227-233.
- [24] Wenger, M. & Ferguson, C. (2006). "A Learning Ecology Model for Blended Learning from Sun Microsystems". In: Bonk, CC. & Graham, C. (Eds) (2006). *The Handbook of Blended Learning: Global Perspectives, Local Designs* (pp. 76-91). San Francisco: John Wiley & Sons.
- [25] Jones, N. & O'Shea, J. (2004). "Challenging hierarchies." *Higher Education*, 48(3), 379-395.
- [26] Reynolds, T. & Greiner, C. (2006). "Integrated Field Experiences in Online Education: A Natural Blend?" In: Bonk, C. & Graham, C. (Eds) (2006). *The Handbook of Blended Learning: Global Perspectives, Local Designs* (pp. 209-220). San Francisco: John Wiley & Sons.
- [27] Jung, I. & Suzuki, K. (2006). "Blended Learning in Japan and its application in liberal arts education." In: Bonk, C. & Graham, C. (Eds) (2006). *The Handbook of Blended Learning: Global Perspectives, Local Designs* (pp. 267-280). San Francisco: John Wiley & Sons.
- [28] Jung, I. (2003). "Online Education for Adult Learners in South Korea." *Educational Technology*, 43(3), 9-16.
- [29] Privateer, P. (1999). "Academic technology and the future of higher education: Strategic paths taken and not taken." *The Journal of Higher Education*, 70 (1), 60-79.
- [30] Brown, J. (2000). "Growing up digital: How the Web changes work, education, and the ways people learn." *Change Magazine*, March-April, 11-20.
- [31] Dziuban, C. et al. (2006). "Blended Learning Enters the Mainstream." In: Bonk, C. & Graham, C. (Eds) (2006). *The Handbook of Blended Learning: Global Perspectives, Local Designs* (pp. 195-208). San Francisco: John Wiley & Sons.
- [32] Bonk, C., Whisher, R. & Nigrelli, M. (2004). "Learning communities, communities of practice: Principles, technologies, and examples." In: Littleton, K., Faulkner, D. & Miell, D. (Eds), *Learning to collaborate, collaborating to learn* (pp. 199-219). New York: NOVA Science Publishers.
- [33] Hofmann, J. (2001). *Blended Learning Case Study*. Retrieved June 06, 2008, from www.learningcircuits.org/2001/apr2001/hofmann.html

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