**Faculty Best Practices Using Blended Learning
in E-learning and Face-to-Face Instruction**

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Blended Learning (B.L.) is widely used nowadays in many higher education institutions, especially those which have embraced distance education and any other form of e-learning as one of their major institutional and teaching efforts, such as "The Instituto Tecnológico y de Estudios Superiores de Monterrey" (ITESM) has done in Mexico.

One of the most competitive private higher education institutions in Mexico, "El Instituto Tecnológico de Monterrey" (ITESM) (also named *TEC de Monterrey)*, has implemented for more than 8 years videoconferencing, TV satellite and online instruction to deliver distance education courses and programs, and also more than 6 years using different e-learning platforms (LearningSpace, BlackBoard, FirstClass, BSCW, WebTec) to enhance its traditional face-to-face and distance education programs at undergraduate and graduate level (Masters and Doctoral).

This effort has produced new and unique teaching and instructional experiences in blended learning environments (*a combination with computer technology and Internet components with traditional face-to-face teaching forms and e-learning formats*), going from those environments which are entirely e-learning (online, web-based, videoconferencing, TV-satellite), to others which are just mediated by computer communication (using multimedia, CDRoms, Internet), and also, from those environments which are just traditional face-to-face instruction using computer and online tools to enhance their courses.

This blended learning continuum has produced many teaching, instructional, and learning situations and practices; some with success, others with failures and frustrations for teachers, instructors and learners. ITESM has a particular background on faculty best and worst practices using a blended learning approach for its e-learning courses and face-to-face courses. The intend of this conference paper presentation is to show such best and worst practices, and reflect on them and present an urgent need on a more deeply pedagogical and academic reflection on this kind of education (*Blended Learning*) so widely used nowadays in many places around the world. As Russell T. Osguthorpe and Charles R. Graham (2003), said: "The term *blended learning* is being used with increased frequency in academic journals and conferences as well as industry trade shows and magazines. However, closer scrutiny reveals that there is considerable disagreement regarding the meaning of the term ... [*and a great need to conduct more research and reflection on it*]" (p. 227).

The presentation will also comment on pedagogical and technological problems, difficulties, constraints, and successes that faculty has at ITESM-Mexico City Campus when they are using a blended learning approach in their teaching practices.

What Is Blended Learning?

Blended Learning has been defined in a variety of ways in the current specialized literature. The most common and current definition states that *blended learning* combine face-to-face instruction with distance education delivery systems (Osguthorpe and Graham, 2003). In the same sense other researchers declare that: "Blended learning arrangements combine technology based learning with face-to-face learning and have become quite popular in different contexts" (Kerres & De Witt, 2002, p.101). These different contexts can be K-12 schools, universities, and work places - for training and learning purposes. One of the basic conceptualizations for this common definition is that: "Those who use blended learning

environments are trying to maximize the benefits of both face-to-face and online methods [*or technology delivery methods*] – using the Web for what it does best and using class time for what it does best" (Osguthorpe & Graham, 2003, p. 227).

Some authors have suggested the term *hybrid* when referring to courses that mix face-to-face instruction with distance delivery systems (Brown, 2001; Young, 2002). Because this last term implies a very specific meaning and it can produce confusion the word blend is preferred to explain this particular educational and learning event "that focuses on the mingling together of face-to-face and technology in ways that lead to a well-balanced combination" (Osguthorpe & Graham, 2003, p. 229).

Therefore, the term blended learning is used to describe a solution that combines several different delivery methods, such as collaboration software, Web-based courses, and computer communication practices with traditional face-to-face instruction. "Blended learning also is used to describe learning that mixes various event-based activities, including face-to-face classrooms, live e-learning, and self-paced learning." (Valiathan, 2002). With the development of new delivery technology systems we are seeing the integration of e-learning into traditional learning programs, creating blended learning.

Other authors have defined blended learning in a more detailed way, such as Margaret Driscoll (2002), she stated that: ... blended learning refers to four different concepts:

- Blended learning: To combine or mix modes of Web-based technology (e.g., live virtual classroom, self-paced instruction, collaborative learning, streaming video, audio, and text) to accomplish an educational goal.
- To combine various pedagogical approaches (e.g., constructivism, behaviorism, cognitivism) to produce an optimal learning outcome with or without instructional technology.
- To combine any form of instructional technology (e.g., videotape, CD-ROM, Web-based training, film) with face-to-face instructor-led training.
- To mix or combine instructional technology with actual job tasks in order to create a harmonious effect of learning and working.
- The point is that blended learning means different things to different people, which illustrates its widely untapped potential.(p. 54)

Finally, I agree with Michael Fox's (2002) definition of blended learning as "... the ability to combine elements of classroom training, live and self-paced e-learning, and advanced supportive learning services in a manner that provides a tailored learning..." (p. 26). The different definitions of *blended learning* make us to reflect on the complexity and richness of this type of learning and educational process. The definitions presented here in a brief manner do not cover all the existing definitions within the specialized literature; however the intention was to present a conceptual background about what does it mean *Blended Learning* and how it is treat by the current researchers. The successful implementation and use of blended learning requires the understanding of the strengths of the different mediums, how learners engage in this type of learning process and how they use information from each different medium and how they can handle online (or other distance education modalities) and the traditional (face-to-face) teaching methods in a combined form. (Reay, 2001).

The following list shows the most used elements within blended learning situations (in order of relevance):

- Traditional classroom or lab settings (face-to-face instruction).
- Reading assignments (print-based workbooks).
- CD-ROM (self-paced content).
- Performance support tools (e.g., collaboration software, threaded discussions, online testing, etc.).
- Teletraining (e.g., videoconferencing, audioconferencing).

- ▪ Stand-alone Web-based training and learning (virtual classroom)
- ▪ Asynchronous Web-based training / online instruction (e.g., e-mail-based communication, e-learning platforms, discussion boards).
- ▪ Synchronous Web-based training (e.g., chat rooms, computer conferencing). (Kerres & De Witt, 2003; Hoffman, 2001)

Russell Osguthorpe and Charles Grahanm (2003) stated that:

> Those who are currently experimenting with blended learning environments are doing it with certain purposes in mind, and the purposes often differ from one course to another. [...] The purposes vary widely from one case to another. And this only shows the potential of blended learning to adapt itself to different settings, students, and content. (pp. 230-231)

These authors also have identified six important goals that educators might espouse as they design blended environments: (a) pedagogical richness, (b) access to knowledge, (c) social interaction, (d) personal agency, (e) cost effectiveness, and (f) ease of revision (2003).

ITESM Faculty Blended Learning: Best and Worst Practices

This section will show the result of a case study among ITESM faculty of Mexico City Campus using a blended learning approach. In particular, this section will describe ITESM-CCM faculty best and worst teaching practices using a blended learning approach. When we talk about best and worst practices, we mean those pedagogical strategies that help ease and facilitate or are constraining any teaching and learning process (advantages and disadvantages) in a blended learning situation.

At ITESM-Mexico City Campus (CCM), the majority of courses offered each semester (80%) used either LearningSpace, Blackboard or WebTec (e-learning platforms for deliver course content and instruction at a distance). These e-learning platforms are an important tool to help professors to organise and delivery their class activities. Classroom activities and assessment are designed, tested and produced to be posted and implemented through these e-learning platforms (this process is named *"Rediseño"*). The majority of these courses combine face-to-face instruction with these electronic and technological platforms, creating many blended learning approaches. There is a myriad of blended learning situations, in a continuum that goes from those instructors that only use the e-learning platforms (BlackBoard or WebTec) for content information (e.g., syllabus, readings, activity instructions, quizzes, etc.), to those instructors that highly interact with their students at a distance, using asynchronous and synchronous communication (e.g., discussion boards, e-mails, file exchange, chat rooms, white boards, etc.) through these e-learning platforms for delivery and perform their courses.

Table 1: *Number of Course Using the Different ITESM E-learning Platforms at System Level*

E-learning Platform	Fall Semester 2001	Spring Semester 2002	Fall Semester 2002	Spring Semester 2003	Fall Semester 2003	Spring Semester 2004*
LearningSpace	11,000	10,500	9,500	7,500	2,000	-
Blackboard	250	1,250	3,300	5,500	10,000	12,000
WebTec	-	50	200	350	2,200	3,000
Total	11,250	11,800	13,000	13,350	14,200	15,000

* ITESM campuses final estimation for this academic period.

At ITESM-CCM each professor or instructor is responsible for update and maintain his or her course (*"rediseño"*) in BlackBoard or WebTec. Professors teach their classes in the traditional face-to-face way,

incorporating diverse pedagogical techniques and strategies, such as: Project Oriented Learning (POL), Problem Based Learning (PBL), and Collaborative Learning; however there are some professors that keep teaching classes in the lecture mode. Professors give discipline-specific support for learning through e-mail, e-learning platforms, and facilitate a programme of face-to-face tutorials during office-hours. Traditional face-to-face, pedagogical techniques and a combination of distance delivery mediums create a large spectrum of blended learning approaches among ITESM-CCM faculty and within their courses. While the tutorial and face-to-face teaching are the traditional platform for collaborative learning, POL, and PBL, within ITESM-CCM courses; on the other hand, tutorial performance is not assessed, and student attendance and the use of the e-learning (Blackboard or WebTec) are mandatory.

Methodology

The findings described here are taken from a case study of ITESM-CCM faculty blended learning best and worst teaching practices, drawn from observations, structured and unstructured interviews, and reflections of participant professors or instructors. Although the data for this case study is primarily qualitative, we also draw on simple quantitative data recorded by participants through a questionnaire (with 20 questions). The underlying paradigm to case studies is a 'naturalistic' philosophy (Lincoln & Guba, 1985) within the phenomenological perspective, which is concerned with the study of a phenomenon in its natural setting, without separating the phenomenon from the social and cultural context. I adopted this approach in order to construct a detailed picture of perspectives, and to describe the extent of diversity in strategies of faculty teaching practices and strategies in blended learning situations. This philosophy has guided our approaches to purposive sampling. This sampling was a non-random one, constituted by 10 university professors (5 female professors and 5 male professors). These 10 professors were recruited, they represent a diversity of interests, disciplines and course topics at undergraduate level (with the College of Humanities and Engineering). Some professors had extensive experience in dealing with blended learning situations and contexts, while others were relatively new to this kind of blended learning situations. Although they all had a basic familiarity with Blackboard and WebTec, the extent of their use of online media for the support and delivery of content and learning activities to students varied widely. All of them teach in the traditional face-to-face mode, given lecture, but at the same time using diverse distance education mediums (e.g., e-mails, discussion boards, white boards, chat rooms, e-learning platforms).

Findings

Table 2 shows the diverse faculty teaching practices found at ITESM, Mexico City Campus. This table presents, in a brief manner the results of the case study. These findings are presented within this document in a concentrated manner, which does not mean that all the diverse practices found are outlined here; however the most significant ones are show.

Conclusion

I would like to finish this paper with the following citation, which allows us to reflect more on the complexity of this "new educational event" named *Blended Learning*.

> The balance between online and face-to-face components will vary for every course. Some blended courses, because of the nature of their instructional goals, student characteristics, instructor background, and online resources, will include more face-to-face than online strategies. Other courses will tip the balance in favour of online strategies, using face-to-face contact infrequently. Still others will mix the two forms of instruction somewhat equally (Osguthorpe & Graham, 2003, p. 228).

Table 2. *ITESM-CCM Faculty Teaching Best and Worst Practices Found Using a Blended Learning Approach*

INSTRUCTIONAL DESIGN COMPONENTS	BEST TEACHING PRACTICES	WORST TEACHING PRACTICES
Conditions	1. Before course start outline the specific learning activities related to course content. 2. Establish social contact with students about their particular learning interest at the beginning of the course. 3. Create a set of quizzes and assignments related to each course session.	1. The majority of ITESM-CCM case study participants do not develop any instructional analysis (needs assessment) before courses start. 2. Some faculty do not pay attention on individual student learning needs. 3. Accomplish the entire syllabus as main course objective, forgetting other learning needs.
Methods	1. Have orientation and tutoring sessions with students during the academic period. 2. Visual and audio aids are excellent to explain concepts and processes if delivery systems are used. 3. Think in a positive way of the advantages of the mediums available to delivery instruction.	1. Request for every assignment to be sent by e-mail or other delivery system. 2. Mix assignments and homework within Blackboard and WebTec in a disorganize way. 3. Do not know how to fix a technical problem or lack of technical support. 4. Do not use correctly each medium to delivery the instruction.
Outcomes	1. Organize every learning outcome on time through the entire semester. 2. To be flexible with the assignments to allow student personal development. 3. Give feedback as soon as possible and motivate students.	1. Do not make your e-learning platform the "main engine" of your course. 2. Give too much information that saturate students. 3. Mistreat students when they do not reach the expected final learning outcome.

Note: The instructional design components are based on Reigeluth, C.M. (1983). *Instructional-design theories and models: An overview of their current status.* Hillsdale, NJ: Lawrence Erlbaum Associates.

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