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

by

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Introduction

- Presenting a higher education case study from Mexico City, ITESM-CCM College, describing faculty best and worst practices using a blended learning approach in e-learning and face-to-face instruction.

- The presentation will comment on conceptual definitions of blended learning, its epistemological and pedagogical bases and foundations, and the technological and instructional problems, difficulties, constraints, and successes that ITESM-CCM faculty has when they are using a blended learning approach.
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 “El Instituto Tecnológico y de Estudios Superiores de Monterrey" (ITESM) has done in Mexico.
ITESM (also named TEC de Monterrey) is one of the most competitive private higher education institutions in Mexico, and this institution 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, CD-Roms, 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 intention of this presentation is to show such best and worst teaching 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.
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).
- 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 and Graham, 2003, p. 227).
Other 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”.
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 states that: “[...] blended learning refers to four different concepts:

a) 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.

b) To combine various pedagogical approaches (e.g., constructivism, behaviorism, cognitivism) to produce an optimal learning outcome with or without instructional technology.
c) To combine any form of instructional technology (e.g., videotape, CD--ROM, Web-based training, film) with face-to-face instructor-led training.

d) 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”.
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 treated by the current researchers.
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).
Because blended learning, as a topic to be studied, is so new that there are few academic sources and attempts in the sparse literature to reflect theoretically on its didactical and epistemological foundations.

There is an urgent need to reflect on this new educational field, because the lack of well established theoretical principles to understand what does imply blended learning as an educational and instructional approach make this need a priority.
One didactical reflection has been based on the blended learning goals that it offers:

1. *pedagogical richness*;
2. *access to knowledge*;
3. *social interaction*;
4. *personal agency*;
5. *cost effectiveness*; and
Another reflection has been based on a different didactical criteria, more practical one, such as:

- A. Skill-driven learning (combines self-paced learning with instructor support to develop specific knowledge and skills).
- B. Attitude-driven learning (combines various events and delivery media to develop specific behaviors).
- C. Competency-driven learning (combines performance support tools with knowledge management resources and mentoring to develop workspace competencies) (Valiathan, 2002).
Another one more reflection has been based on the didactical methods and formats used in B.L. courses, such as:

1. Didactical methods (expository presentations, discovery learning, cooperative learning, etc.); and

2. Delivery formats (personal communication, publishing, broadcasting, etc.) (Kerres and De Witt, 2003).
B.L. Didactical Bases IV

- Other one reflection has been based on the components existing within B.L.course arrangements. These components are:
  - a. content,
  - b. communication, and
  - c. construction (Kerres and De Witt, 2003).
Finally, another important didactical reflection about B.L., are the following theories that discuss the interaction processes involved:

- **Social Presence Theory** (Mclsaac and Gunawardena 1998; Lombard and Ditton, 1997),
- The **Media Richness Theory** (Dennis and Kinney, 1998) and
- The **Media Synchronicity Theory** ((Dennis & Valacich, 1999).
The following figure 1 shows the different combinations and mixes that can occur in blended learning environments (with traditional face-to-face learning and on-line learning).

This figure presents three typical models of blended learning arrangement, that are usually find in many institutions that are using face-to-face instruction combined with on-line instruction:

When I talk about best practices, I mean those pedagogical strategies that help and facilitate learning and instructional processes within a blended learning situation and the advantages that they imply.

In the same way, when I talk about worst practices, I mean those pedagogical strategies that constraint teaching and learning processes within a blended learning situation and the disadvantages that they involve.
Currently, at ITESM-Mexico City Campus (CCM), the majority of courses offered each semester (80%) use Blackboard V.6 or WebTec (e-learning platforms for deliver course content and learning activities at a distance).

These e-learning platforms are important tools to help professors to organize and delivery their class content and instruction. Classroom activities and assessment are designed, tested and produced to be post and implemented through these e-learning platforms (this process is named "Rediseño").
The majority courses combine face-to-face instruction with these electronic and technological platforms, creating many blended learning arrangements.

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, to those instructors that highly interact with their students at a distance, using asynchronous and synchronous communication through these e-learning platforms for delivering and perform their courses.
The following table shows the number of courses that use e-learning platforms in the entire ITESM System.

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

*ITESM campuses final estimation for this academic period.
ITESM-CCM blended learning courses use any of the e-learning platform already mentioned (BlackBoard or WebTec), and each professor or instructor is responsible for update and maintain his or her course ("rediseño") within one of these platforms.

The majority of ITESM-CCM 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 program of face-to-face tutorials during office-hours.

Traditional face-to-face, pedagogical strategies and a combination of distance delivery communication technologies create a large spectrum of blended learning arrangements 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

- **Rationale for the study.** The main reason for this qualitative study was to document and analyze the current teaching practices and strategies used by ITESM-CCM faculty within their blended learning courses, which were not yet documented in any existing study.

- A second reason was to determine the current instructional situation in ITESM-CCM blended learning courses, how its faculty combines face-to-face instruction with distance education technology devices during their instructional processes.

- A third reason was to discover if these blended learning teaching practices and strategies represent those described as desirable and appropriate in the sparse research literature on distance education.
This case study about ITESM-CCM faculty blended learning best and worst teaching practices, was conducted from the perspective of the *Naturalistic Inquiry* qualitative research paradigm (Lincoln and Guba, 1985).

**Data collection.** Data were gathered from *unstructured interviews* (semi-structured) of ten ITESM-CCM instructors (faculty) and *participant observation* was conducted on their blended learning courses (Lincoln and Guba, 1985). Also, participants were asked to answer one questionnaire, and to record the range of teaching practices of their blended learning courses.
Case study participants’ criteria selection. The cases in this study are based on ten ITESM faculty members who were teaching in blended learning courses at Mexico City Campus during the spring semester of 2004.

Data analysis. The qualitative methods used to analyze and examine the data (from interview notes, fieldwork observation notes, non-verbal cues, and course documents and a questionnaire) were: Formal Content Analysis (Lincoln & Guba, 1985), Constant Comparative Method (Glaser & Strauss, 1967), and the construction of trustworthiness through triangulation (Lincoln & Guba, 1985). Most of the research tasks in the remaining steps of the study involved detailed analysis of the data using these qualitative and interpretive methods.
Instructor-Participants

Description of instructor-participants. At ITESM-CCM, several professors were invited to participate, looking for those instructors that were reflective practitioners. From those who responded, 10 professors were recruited, they represent a diversity of interests, disciplines and course topics at undergraduate level (within the Colleges of Humanities and Engineering) and graduate level. 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). The following table 2 describes in brief manner faculty participants' characteristics.
The following table describes faculty participants' characteristics:

<table>
<thead>
<tr>
<th>Participants</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Full Professor</td>
<td>Full Professor</td>
<td>Full Professor</td>
<td>Full Professor</td>
<td>Full Professor</td>
<td>Full Professor</td>
<td>Full Professor</td>
<td>Full Professor</td>
<td>Full Professor</td>
<td>Full Professor</td>
</tr>
<tr>
<td>College</td>
<td>IESM -CCM</td>
<td>IESM -CCM</td>
<td>IESM -CCM</td>
<td>IESM -CCM</td>
<td>IESM -CCM</td>
<td>IESM -CCM</td>
<td>IESM -CCM</td>
<td>IESM -CCM</td>
<td>IESM -CCM</td>
<td>IESM -CCM</td>
</tr>
<tr>
<td>Area of Expertise</td>
<td>Communications</td>
<td>Social Sciences</td>
<td>Liberal Arts</td>
<td>Communication</td>
<td>Liberal Arts</td>
<td>Journalism</td>
<td>Electronic Engineering</td>
<td>Research Methodology</td>
<td>Research Methodology</td>
<td>Educational Technology</td>
</tr>
<tr>
<td>Course Taught</td>
<td>Organizational Communication</td>
<td>Sociology, Sustainable Development</td>
<td>Oral Expression</td>
<td>Content Analysis</td>
<td>Discourse Analysis</td>
<td>Communication Theory, Journalism Theory</td>
<td>Thermodynamics</td>
<td>Quantitative Methodology</td>
<td>Qualitative Methodology</td>
<td>Educational Technology</td>
</tr>
<tr>
<td>Level of Course</td>
<td>Undergraduate</td>
<td>Undergraduate, Masters, Doctoral</td>
<td>Undergraduate</td>
<td>Undergraduate</td>
<td>Undergraduate</td>
<td>Undergraduate</td>
<td>Undergraduate, Masters</td>
<td>Undergraduate, Masters</td>
<td>Undergraduate, Masters</td>
<td>Masters</td>
</tr>
<tr>
<td>Face-to-Face Teaching Experience</td>
<td>15 years</td>
<td>14 years</td>
<td>20 years</td>
<td>18 years</td>
<td>20 years</td>
<td>15 years</td>
<td>16 years</td>
<td>9 years</td>
<td>18 years</td>
<td>17 years</td>
</tr>
<tr>
<td>Distance Education Experience</td>
<td>0 years</td>
<td>2 years</td>
<td>0 years</td>
<td>0 years</td>
<td>0 years</td>
<td>1 years</td>
<td>0 years</td>
<td>1 year</td>
<td>9 years</td>
<td>12 years</td>
</tr>
<tr>
<td>Blended Learning Experience</td>
<td>6 years</td>
<td>4 years</td>
<td>6 years</td>
<td>1 year</td>
<td>4 years</td>
<td>2 years</td>
<td>6 years</td>
<td>2 years</td>
<td>3 years</td>
<td>12 years</td>
</tr>
<tr>
<td>E-learning platform used</td>
<td>Learning Space &amp; Black Board</td>
<td>Learning Space &amp; Black Board</td>
<td>Learning Space &amp; Black Board</td>
<td>Learning Space &amp; Black Board</td>
<td>Learning Space &amp; Black Board</td>
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<td>Learning Space &amp; Black Board</td>
<td>Learning Space &amp; Black Board</td>
<td>Learning Space &amp; Black Board</td>
<td>Learning Space &amp; Black Board</td>
</tr>
</tbody>
</table>
Findings

- Based on Reigeluth, C.M. (1983) instructional design components model the findings were divided in three main areas: a. *instructional conditions* (e.g., needs assessment, learning objectives, content, etc.), b. *instructional methods* (e.g., learning activities, teaching strategies, delivery techniques, motivation, student feedback, etc.), and c. *instructional results* (e.g., learning outcomes, formative and summative evaluation).
The best blended learning teaching practices and strategies found, related to Instructional Conditions, are:

1. Those instructor-participants that developed and adjust, before classes start, their course learning objectives have fewer problems with the management of face-to-face teaching and e-learning teaching (using an e-learning platform, such as: BlackBoard or WebTec). They got a more easy way to handle the combination of F-t-F and e-learning technology.

2. One of the best practices was to establish a direct social contact with the students at the beginning of the courses, especially when they offered orientation sessions on the use of the e-learning platform and the information to be found within it.

3. Another best practice was to establish a well define set of assignments to be develop by the students at the end of each unit or module. It means, to describe well within the e-learning platform what they have to do to avoid confusion.
The worst blended learning teaching practices and strategies found, related to Instructional Conditions, are:

1. The majority of instructor-participants do not develop any instructional analysis before their courses start. They do not use any needs assessment. They define their learning objectives based on the content of their syllabus (content-driven are their courses).

2. Interesting was to find that some of the instructor-participants do not pay attention on student individual learning needs; students learning needs are "ignore" in many cases, what it is important is to carry out the entire syllabus content.

3. Because many of the courses are syllabus-driven, the administration of the face-to-face instruction subordinate the e-learning component, making it just a communication tool to delivery syllabus information, resting the distance education potentialities of the e-learning component.
The best blended learning teaching practices and strategies found, related to **Instructional Methods**, are:

1. Instructor-participants who developed orientation and tutoring sessions during the entire course had a high degree of communication among their students, and had fewer problems with the planned learning activities.

2. Those professors that developed visual and audio teaching materials had a better students understanding about the concepts, themes and issues to be seen during class; the e-learning component was a great tool to complement the face-to-face instruction because allowed to storage many of these visual and audio materials.

3. Instructors that knew how to handle the e-learning component (Blackboard or WebTec, e-mail, discussion boards, forums, and so on) have a better control on the use of the communication and information delivery technology used; they accept the use of the e-learning component in a positive way, with less resistant than those who have a negative disposition toward it. It seems that the acceptance and the knowledge on the use of any e-learning component in blended learning situations is a key element in the success of any blended learning course.
The worst blended learning teaching practices and strategies found, related to **Instructional Methods**, are:

1. Saturate the e-learning platform (BlackBoard or WebTec) and instructor’s e-mail account with student assignments. It is a very bad idea to request for every assignment to be sent to instructor's e-mail address and e-learning platform professor’s drop-box. In blended learning situations the administration of two modes of collect and receive students’ assignments can be pretty complicated.

2. Mix assignments and homework within the e-learning platform in a disorganize way, it can make a "mess".

3. Do not know how to handle a technical problem was a big issue among instructor-participants, they lose a lot of class time trying to fix it; also the lack of institutional technical support can be an obstacle for the success of a blended learning course.

4. Do not know how to use correctly each technological medium to delivery the instruction and learning activities can create important problems in the process of teach and administrate the blended learning course.
The best blended learning teaching practices and strategies found, related to Instructional Results, are:

1. The organization of every learning outcome on time through the complete semester helped greatly to accomplish learning objectives.

2. Those instructors who were flexible with the administration of students' assignments have a better educational respond from the students.

3. Professors that always gave feedback to their student requests, questions, and doubts have more impact and motivation on their students performance, than those who do not gave immediately feedback or null kind of feedback.
The worst blended learning teaching practices and strategies found, related to Instructional Results, are:

1. One of the worst practices found was within those instructor-participants that made the e-learning platform (BlackBoard or WebTec) the "main and only engine" of their blended learning class. To depend and relay entirely on the e-learning components and do not prepare class for the face-to-face class sessions diminish the learning potentialities of face-to-face instruction.

2. Those professors that gave too much information in an exaggerated way saturate students and create a great confusion among them.

3. Finally, one of the worst practices, more related with the humanitarian and psychological aspects, than the pedagogical ones, was to mistreat students when they do not reach the expected final learning outcome.
Findings: ITESM-CCM Faculty Teaching Best and Worst Practices found using a Blended Learning Approach

<table>
<thead>
<tr>
<th>INSTRUCTIONAL DESIGN COMPONENTS</th>
<th>BEST TEACHING PRACTICES</th>
<th>WORST TEACHING PRACTICES</th>
</tr>
</thead>
</table>
| **Conditions**                 | 1. Before courses start instructors outline the specific learning activities related to their course content.  
                                   2. Instructors establish social contact with their students about their particular learning interest at the beginning of the course.  
                                   3. Instructors create a set of quizzes and assignments related to each course session to see students’ progress. | 1. The majority of ITESM-CCM case study instructor-participants do not develop any instructional analysis (needs assessment) before courses start.  
                                   2. Some faculty does not pay attention on individual student learning needs.  
                                   3. To accomplish the entire syllabus as main course objective, forgetting other learning needs.                                                                                       |
| **Methods**                    | 1. Instructors have orientation and tutoring sessions with students during the entire academic period.  
                                   2. Visual and audio aids are excellent to explain concepts and processes if delivery systems are used.  
                                   3. To think in a positive way on the advantages of the communication technology available to delivery instruction helped a lot instructor-participants to cope with a blended learning course. | 1. Instructors request for every assignment to be sent by e-mail or other delivery system.  
                                   2. Instructors mix assignments and homeworks within Blackboard and WebTec in a disorganize way.  
                                   3. Instructors do not know how to fix a technical problem or they lack of technical support.  
                                   4. Some instructors do not use correctly each medium to delivery the instruction.                                                                                                                                 |
| **Outcomes**                   | 1. Instructors organize every learning outcome on time through the whole semester.  
                                   2. To be flexible with the assignments allowing student personal development.  
                                   3. Instructors give feedback as soon as possible and motivate students. | 1. Instructors make their e-learning platform (BlackBoard or WebTec) the “main engine” of their courses, “forgetting” the face-to-face instruction.  
                                   2. Some instructors give too much information and saturate students.  
                                   3. Some instructors mistreat students when they do not reach the expected final learning outcome.                                                                                           |

Conclusion

- I would like to finish this presentation with the following citation, which allows us to reflect more on the complexity of this “new educational modality” 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 favor of online strategies, using face-to-face contact infrequently. Still others will mix the two forms of instruction somewhat equally” (Osguthorpe and Graham, 2003, p. 228).
References


Young, J.R. (2002). Hybrid teaching seeks to end the divide between traditional and online.

The End

Thanks!