



PERCEPTION OF BLENDED LEARNING IN FACULTY AND STUDENTS OF HIGHER LEARNING

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ABSTRACT

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Technology, globalization, and work environments are changing the educational environment which has necessitated to train teachers and students. Teachers who recognize the potential benefits of blended learning for student achievement are more likely to embrace the integration of technology and use it to improve classroom teaching and learning. Blended learning (BL) is a teaching/learning method with a wide range of different techniques that emerge from online education, including the evolution of new ways of teaching, the openness to change, and the innovation of learning strategies. This research aimed to present the results and experiences of teachers and students of higher learning, emphasizing the use of the hybrid educational model against the traditional model. The findings revealed that students developed critical, reflective and constructive thinking and problem-solving skills when taught through BL or hybrid learning. The development of competencies in both students and teachers facilitating the construction of meaningful learning was also reported. The study recommends the need to make the use of BL in order to make their learning and skills development more coherent.

Contribution/Originality: This study revealed that blended learning can help teachers recognize the potential of students and help them embrace the integration of technology in their classroom. The study's contribution is the conviction of hybrid training being a significant method of teaching and learning provided it is assisted by empathetic advisors with a variety of intrapersonal skills.

1. INTRODUCTION

Education has undergone a great metamorphosis during the last decade and has shown the need to adapt to the various tools provided by Information and Communication Technologies (ICT). The globalization of technologies is adopted in every corner of educational institutions: in classrooms, cafeteria, and gardens, among others. This has transformed the concept of education, driven by the technological revolution where students are the protagonists of their formation, based on the success of an intelligent education. In recent years, with the continuous development of (ICT), the educational modality Blended learning (BL) or hybrid learning has emerged as the most prominent method of instruction in education, especially in higher education. The traditional environment in which the learning process is carried out, in person, regardless of the intensity with which the technology is used, has some important restrictions. Some of these restrictions include the limited interaction between faculty and student. Therefore, an important factor is to develop courses using BL to offer a viable option to students who seek the flexibility of distance learning, but who also want to have some personal contact with faculty and other students in

the classroom. The teaching/learning process using the BL modality goes beyond the barriers of time, location, and culture, and has created many improved opportunities for students and teachers. Blended learning is a method that enhances and combines face-to-face and virtual learning through the use of novel and refined methodologies that bring together the ideas of each one to offer a quality education (Cano, 2015). This educational modality contributes to a more collaborative participation among students. Students are inspired and their skills such as creativity and the desire to innovate skills are awakened, although remain inherent in them and do not surface due to a lack of drive and motivation. The postmodern change in unison with BL plays a very important role in the teaching practice, by showing the conjugation of the benefits of face-to-face learning with the functionalities of electronic-learning (e-learning), strengthening the teaching/learning process. This change becomes a challenge for the teacher because this facilitates and impels individual and collaborative participation, transforming the role of a traditional teacher into a co-constructivist process. Thus unifying various classroom experiences and promoting autonomy by creating teaching/learning process driven by the student.

Teaching/learning strategies have generated a radical change over the past several years, and have faced many challenges in terms of the dynamics in which learning is wrapped in reflection, autonomy, and co-construction of knowledge. Students try to problematize situations and solve them by creating spaces for co-collaboration and exchange of knowledge. Critical reflective, and creative thinking can direct a career path more assertively for them.

2. LITERATURE REVIEW

In the present study, a review of documents from various databases, was conducted in the educational field as well as under the BL category. The review of research evidence states the importance of integrating this educational modality into higher education: "University transformation is an urgent need that must assume various changes and challenges in a world that is frequently ever-changing and dynamic" (González, 2015).

The analysis of the process of adoption of the educational innovations has been carried out from different perspectives. It is assumed that it generally occurs through a sequence of the acceptance of these innovations, which occurs gradually and in stages. Therefore, the faculty goes from a state of minimal contact with the innovation to one in which the purpose is a normalized integration of teaching practice (Martín, Sánchez, & Costa, 2019). Several studies have been conducted concerning the teaching/learning process for blended learning, such as Bartolomé (2004); Gebera and Washington (2010) and Muñoz-Repiso and Tejedor (2017). These authors confirm that the student values the incidence of ICTs in the development of effective strategies in the teaching /learning process. Furthermore, "blended learning offers a solution to the space and time limitations of face-to-face lessons" (Graham, 2006). Meta-analyses also clearly demonstrate the effectiveness of blended learning on the student performance, compared to online learning and face-to-face learning (Batdi, 2014; Cırak, Yıldırım, & Cücük, 2018). On the other hand, Graham, Henrie, and Gibbons (2014) and Staker and Horn (2012) provide typologies or models of BL that correspond to criteria for the distribution of activities between the face-to-face and online environment. As a result of his research, Cırak (2016) identified nine effective components of blended learning, such as teacher roles, activities in design, learning management system (LMS), face-to-face lessons, online course materials, student interaction, assessments and evaluations, student roles, and online sharing.

Martín et al. (2019) conducted a study on the perception of teachers when using blended learning in the teaching/learning process, indicating a high acceptance among teachers of the advantages of using environments based on this modality. However, Martín and Sánchez (2014) in their research on the predictive model of the intention to adopt blended learning among university professors, mention that many teachers know this training modality but either they are not full users of it or they transfer part of their teaching routine based on face-to-face learning to the e-learning format without the necessary balanced integration of both modalities. On the other hand, Fernández (2018) in his study regarding the perception of teacher-student performance in the mixed modality from

an ecosystem perspective, shows that teachers recognize students' improvement in the aspects of their competences such as planning, management of the learning environment, and evaluation, promoting self-management.

The ICT revolution implies novel conceptions of the teaching/learning process, due to which universities are committed to change to fulfill their mission and vision, systematically categorizing and identifying the mechanisms that intervene in the teaching/learning process. Moreover, the environment of globalization in which a university builds itself has been shaping new opportunities for higher education, which is continuously experiencing changes that represent opportunities and challenges, in the face of the demanding society that now demands a new student profile. This profile should respond to the new requirements of the productive process and the forms of organization of work resulting from the technological revolution in which flexible educational models are required to make instruction more effective and facilitate access to the learning path regardless of space and time.

3. METHODOLOGY

Based on the general approach expressed above, the development of a process of analysis according to the following research question is proposed as follows: Are there differences between teachers and university students in the perception of use in the classroom of the blended learning methodology? To answer this question and achieve the proposed objective, this study is based on a qualitative and interpretative methodology. This methodology considers teachers' experiences concerning the BL educational modality and its inclusion in their educational work in the classroom. It also caters to the perception of the students regarding the possibilities of this modality and their ability to generate change and innovation in the teaching/learning process.

3.1. Participants

A total of 54 teachers and 120 students (all active) participated in this study. In terms of gender of teachers, 24 (44.4%) were female and 30 (55.6%) were male. The distribution by age ranged from 32 to 46 years. The sample size accounted for more than 7% of the population. The teachers were affiliated with the Departments of Basic Sciences and Technological Sciences and taught in the areas of Computer and Informatics Engineering at the University Center of La Cienega (CUCi) belonging to the University of Guadalajara (UDG). On the other hand, the student participants comprised (58.3%) of male and (41.7%) of female, the majority under the age of 22 years. Sixty-two percent of students reported using virtual platforms in the teaching/learning process. Participants were informed of the aim of the study and all freely and voluntarily agreed to partake.

3.2. Design, Procedure, Instruments, and Data Analysis

Two parallel questionnaires were selected as the research instrument for data collection. These were organized into three sections with a cross-sectional design and different dimensions, both according to the research participants and keeping a focus on general data. Secondly referring to the teacher/student perception concerning the teaching/learning processes itself through the use of BL tools, there were a few items applicable to the resources from different virtual platforms on teachers' tasks.

3.3. Teacher experiences

The main factor in teachers was the reluctance to change their academic practices because it was a difficult change for those whose knowledge construction has been traditional. In this line of research, the objective was to comprehend teachers' experience using the pedagogical tools provided by using BL as support in the classroom. Teacher training has been focused on these digital tools and the traditional formation of teachers has prevailed.

However, initiatives have been taken to promote change through curricular courses oriented to same themes. According to the result of a few surveys, the perception of the teachers is essential for the use of appropriation of educational modalities and the cohesion of these within the teaching practice. This provides a stepping stone for

higher effectiveness because it is compatible with the future of teaching in higher learning. BL proposes an alternative that aims to overcome the limitations of the informative solutions for self-development. As is known, this paradigm is based on the implementation of different learning strategies through the utilization of each of their virtues which enables the integral development of the student (Arranz & Aguado, 2005).

4. RESULTS

4.1. Teacher

This section describes the experience of teachers in the educational programs in Computer and Informatics Engineering, concerning the use of the BL process in teaching–learning in the classroom. Virtual environments included dynamic tools that offered us synchronous and asynchronous communication. The incorporation of these technologies in teaching entails a new modality of the teaching/learning process.

Table 1 demonstrates that 75.4% of teachers consider emigrating to an educational model that uses BL requiring more work and effort for the teacher. Furthermore, 73.6% of teachers deem their information in novel learning strategies required to guide students on the proper use of technological resources. However, a smaller number (56.1%) thought it was necessary for both the teacher and the student to believe in their new role in the teaching/learning process and that this process supposed a change in their roles as teachers and students.

Table 1. Teacher experience related to the optimized face-to-face paradigm.

What do you think about novel learning strategies (optimized face-to-face paradigm)?	
The student's guidance on the proper use of technological resources in/out of the classroom	73.6%
The adaptation of the new role of the teacher / student	56.1%
Creation of more work and effort for the teacher	75.4%

Regarding the impact of a hybrid modality on the teaching/learning processes, Table 2 depicts that 82.6% of teachers consider that novel ways of co-constructing knowledge with a collaborative approach are emerging. Furthermore, 91.4% affirm that the insertion of technology in the classroom contributes to the autonomy of students in their educational journey without time or specific space. This implies strengthening the development of other potentialities as well.

Table 2. Influence of a hybrid modality in the teaching/learning process.

How does the insertion of a hybrid modality influence the teaching–learning process?	
New ways of learning.	82.6%
Autonomous work of students in education without time and space restrictions.	91.4%

These findings coincide with Carranza (2017) whose study states that teachers recognize this modality as complimentary. A modality in which technology is employed and knowledge reinforced in face-to-face classes. In the opinion of 77.6% of teachers, as shown in Table 3, the BL modality affects diversity in the teaching/learning process and implicates increasingly widespread ease of access while 81.1% of teachers consider the flexibility that technology offers to be permissive to a combination of methodologies. The development of a transcendental change in students is due to the current technological, social, and innovational process of change, that is taking place in education. Accordingly, 85.4% of teachers believed that the use of BL influenced the development of thinking and acting skills (Table 3).

Table 3. Use of blended learning.

What advantages do you find in experiencing the alignment process using <i>blended learning</i> ?	
Diversity of the teaching/learning process.	77.6%
The flexibility of the use of technology allows the combination of methodologies by developing a transcendental transformation in students.	81.1%
thinking and acting abilities.	85.4%

Teachers have utilized different strategies for critical thinking development through meaningful-collaborative learning in students. Table 4 shows that 85.4% of teachers have used problem-based projects, 81.1% say they have worked with the cooperative learning strategy, and 57.2% enjoy working with readings and videos.

Table 4. BL strategies.

What <i>BL</i> didactic strategies do you use more often?	
Projects based on problem-solving, critical challenges, and encouragement of participation.	85.4%
Cooperative learning with full freedom for the students.	81.1%
Lectures, videos.	57.2%

The use of different strategies in teaching/learning process in the mixed modality is in line with Alcántar and Montes (2018) whose study affirms that the effectiveness of the technologies depends on the relevance of the strategies use regarding the type of learning to be developed. In other words, the selection of strategies mediated with technology must consider how it wants to influence learning and determine which resources are the most suitable to reach them.

4.2. Technological Innovation in Educational Modalities

Socio-technological advances have made different educational modalities proliferate. This in the face of a constant evolution that has surpassed the educational field in a surprising way in the context of globalization. The focus on lifelong learning does not propose that one has to spend a lifetime attending university. Although it does suggest that an individual should understand learning as a continuous and open process. They should be capable of combining the acquisition of explicit knowledge (codified or systematized) with tacit and skillful knowledge demanded by global society in different contexts and stages of life (Cobo & Moravec, 2011).

Educational institutions are appropriating novel educational models that are more flexible and effective. This marks a new milestone in education and modifies the methodology in which learning is more reflective, self-critical, and personal. Thus, generating an educational panorama where the different ways of learning are transformed into more critical and autonomous thinking. It is not a question of discarding what is already known, but of learning in other ways. BL is considered a key element in bi-directional communication, which promotes personal interaction in the classroom between the teacher and the student as a preferred means of teaching. The systematic and joint action of various didactic resources and tutorial support, provide students with autonomous learning. This is in addition to reinforcing the ability of effective communication through user-friendly platforms (González, 2015).

4.3. Student Experience

In the real sense, students are offered opportunities to develop thinking, reasoning, and problem-solving skills. All doors are opened for them to access the necessary knowledge and skills without the limitation of time or space. It is time to avail the opportunities and analyze how new teaching methods can be utilized to enhance student learning, in a new social and technological context.

5. RESULTS

5.1. Student

It was evident that modern methods of teaching help develop the cognitive, affective, social, and cultural dimensions of students' learning. The hybrid learning in the current scenario is fundamental and inevitable in directing both the process of education and learning and their personality development. The quality and strengthening of their learning is reflected in the amount of training imparted to them. It was therefore important to know what they thought of the hybrid modality in teaching/learning process.

The study analyzed the surveys carried out on students of higher learning for hybrid learning, their experience was found increasingly important for their transcendental development. Eighty-seven percent of students believed that it was effective to learn with BL methods, since this modality allowed them to have feed-back in the classroom and made for a perfect combination with the activities on the virtual learning platform. A majority (79.3%) believed that the adoption of this hybrid modality as classroom teaching has been successful because students had access to the teaching activities on any device, regardless of time or space. Likewise, 71.4% considered themselves satisfied to learn with this modality because of the benefits obtained both in the virtual classroom and in the traditional class setting (Table 5).

Table 5. Student when working with BL.

Is the adoption of a hybrid modality as effective as BL in the classroom?	
Students benefit from classroom after BL, which makes for the perfect combination.	87.6%
There is open access to activities without the restriction of time or space through tablets and mobiles.	79.3%
They offer benefits from both virtual classrooms and traditional classes.	71.4%

Carranza (2017) stated in her research that students enjoyed being self-managed in hybrid learning as "it allowed them to develop the ability to remember what they already know while simultaneously relating it to what they are learning, trying to understand the knowledge acquired" (p. 15).

Didactic strategies have been decisive in co-constructing and developing collaborative knowledge in students. Teachers developed these strategies to overcome the apathy in students that they showed towards working in teams, motivating them, and awakening their interest in knowledge, thus developing their critical, reflective and collaborative thinking. When students were asked about the didactic strategies, and whether their advisor used any methods to develop these skills, 73.6% said that these skills contributed them to become more motivated and participate more actively in the classroom. Meanwhile, 69.3% said that they became more autonomous in their learning and no longer depended on what the advisor shared with them. Moreover, 65.4% affirmed that they acquired the ability to work in a team and be more collaborative (Table 6).

Table 6. Didactic strategies.

Has the didactic strategy used by your advisor to develop your critical and reflective thinking seemed useful? Why?	
Yes, because I feel more motivated and I participate actively	73.6%
Yes, because I have developed more autonomous learning	69.3%
Yes, because I have learned to work in a team	65.4%

The positive assessment of ICTs in the development of learning strategies corroborates the study of Dominguez (2009) who states that technologies promote autonomous learning, collaborative work, creative thinking, the development of problem-solving strategies, interactive work, the ability of oral and written argument, and the creation of non-linguistic representations of what students learn. Alternatively, in this scenario, the teacher/advisor uploads on their platform lectures recorded on video by him or by some other professional. These

resources were available to students outside the classroom, when they went back to their corresponding activities. This approach facilitated learning by allowing students to ask questions to their teacher or collaborate with their peers while doing their work. It also avoided difficulties at home or, having to ask the advisor for help the next day in the classroom (Arfstrom, 2014).

The didactic videos are very useful in class and have a motivational objective, rather than transmitting exhaustive and systematized information on the subject. It opens dialogues and generates a participatory dynamic between the teacher and the student. These videos are used among other actions, as a complement to learning in both individual and in class sessions. When surveying students, 77.3% considered that the videos proposed in the classroom have been useful because the advisor complemented them in the classroom as well. They are practiced self-evaluation where they recovered what they had learned. Meanwhile, 52.3% mentioned that during the transmission of the video the advisor intervened to explain details that may have not been clear to them. However, only a small number of 37.2% students commented that educational videos were useful in the process learning because they were a means of support (Table 7).

Table 7. Educational videos as support in the teaching/learning process.

Do you consider that your advisors' proposed videos have been useful in the teaching/learning process? Why?	
Yes, because they are always accompanied by self-evaluation helpful in reviewing what has been learned.	77.3%
Yes, because the advisor intervenes during the transmission of the video to clear up details.	52.3%
Yes, because these are means of support in the learning process.	37.2%

The increasing levels of digital literacy among students and teachers are a milestone where videos become the dominant teaching medium on the internet. Table 7 results show that educational videos can play a role in documenting the individual environment and contribute to students' learning process. These results coincide with those in García (2014) study, which stated that the didactic videos had an impact on learning, by allowing the student to analyze and assess reality from descriptions and images that may be impossible to experience. Additionally, these videos also stimulated their search for new knowledge promoting the search for solutions to situations and problems presented through videos, and aided in assessing their knowledge, abilities, and skills by comparing their behaviors with those shown in the video.

Chaves (2015) also suggested that it was possible to obtain a better interest in the subject under study by using innovative methodologies that incorporate technology as part of the teaching/learning process. Consequently, according to the constructivist position, knowledge is not a genuine version of reality, but creation of a human being. People have constructed it fundamentally with the schemes that they already possess, for example, what they had already built in their relationship with the environment. This construction process depended on two fundamental aspects (Bernheim, 2011):

1. Previous knowledge or presentations or the new information that one possesses, or the activity or task to be solved.
2. External or internal activity that the apprentices carry out in this regard (Bernheim, 2011).

In virtual learning environments, forums are built for asynchronous participation that contributes to learning, debate, consensus of ideas, and sharing construction of knowledge. For this reason, a fundamental role is played by the advisor, who creates threads, moderates and responds when necessary. These productive discussion forums increase the development of new and dynamic questions that contribute to broadening the horizons of new knowledge and igniting the topic of reflection even if they may be unrelated topics.

In this process of communication and exchange, the advisor can observe how the group builds new knowledge in an autonomous and collaborative manner. In addition to being the moderator and who intervenes successfully

with different ideas or participations in order to strengthen, the advisor leaves the option of continuing the debate open. The students were directly asked a question related to the educational importance of the discussion forums in virtual classroom: How do you consider that the discussion forums created by the advisor support the virtual classroom and whether these forums are useful?

Most students (87.1%) considered that the forums enhance cooperative work and that this, in turn, favored collaborative learning; 63.6% considered that the flexibility of time in the forums made it easier for them to reflect on the topic under discussion in addition to being able to give feedback on their classmates' participation; while 54.2% said that the forums facilitated interaction with classmates (Table 8).

Table 8. Have the debate forums been useful?

In what way do you consider that the advisor-created debate forums support virtual learning?	%
These forums encourage work in cooperation with others and facilitate collaborative learning.	87.1
Its benefits are time flexibility, facilitating investigation, reflection, organization, and the overturning of ideas concerning the opinions of other participants	63.6
It facilitates the process of interaction and multidirectional communication.	54.2

Arango (2003) reported that academic forums promoted mechanisms of participation through discussions that should lead to a pragmatic dialogue. Although they used arguments and reflections raised by the participants, the ultimate intention was not to persuade the interlocutor, but to investigate and use the dialogue for the exchange of thoughts, ideas, and various approaches on the topic being discussed. Moreover, the dynamics of work in virtual forums invite participants to review daily activities and discussions, which implies greater dedication and time to get used to the virtual component (Arango, 2003). From the aforementioned results, it was evident that students had taken classes using BL method had changed the way they interacted with their peers. According to their own perception, they had transformed their individual work into collaborative work and had modified their way of learning. They felt that they performed well in their teaching/learning process and properly adopted the use of technological tools. This result coincides with Fëdorov (2006) study regarding the use of discussion forums, which showed that there was a broad consensus among students on the value of virtual forums as a didactic tool that made a positive, significant, and integral impact on the development of different aspects of high-quality thinking.

6. ANALYSIS AND CONCLUSION

Globalization has also affected the field of education by highlighting challenges in the technological revolution faced by teachers and students. Teachers require training in ICT to achieve quality and innovation in their pedagogical practices so that they could offer great opportunities to improve the quality of education. This would also update their professional skills to improve the quality of the teaching/learning process. However, students showed the inherent ability with the use of ICTs. The flexibility in the use of ICTs and networks for higher education is rooted in the structure of content as well as in synchronous and asynchronous communication, peer evaluation, and other aspects of education. This dispels a hierarchical framing of power among those who decide and lead, and those who are led, those who teach and those who learn. It also allows the teachers and students to differentiate between design, management, and evaluation as dissociated moments, between cost and benefit, which are only useful to do an economic analysis and does not make any social impact (Fainholc, 2016).

The impact of a hybrid modality in the classroom also depends on how convinced the advisor is that ICTs are fundamental support tools for today's academic society. The group of teachers who partook in this study reported considering the use of BL in the classroom as important, but a large majority declared that there was more work in using it than in working with the traditional modality in which they are trained and are accustomed to. The results of this study coincide with the opinions of various authors, which have confirmed that the student positively values

the development of learning strategies as they facilitated academic tasks and became the key to academic success (Arango, 2003; Chiu & Hsiao, 2010; Fëdorov, 2006; Mortis, Parra, García, & Valenzuela, 2015; Muñoz-Repiso & Tejedor, 2017; Vernadakis, Giannousi, Derri, Michalopoulos, & Kioumourtzoglou, 2012).

On the teachers' front, it was observed that teachers could attain high learning outcomes in their students when working with this modality. Hence, they preferred to continue working on hybrid methods or they would likely give up and return to traditional modality. In this context, it is recommended that institutions should initiate training of teachers for hybrid learning, select empathetic advisors with various interpersonal and self-leadership skills including collaboration, team work, time management, and more. It is important to select such advisors from within university education system so that they can help young people become well-rounded professionals. The advisors would also train teachers to work with a hybrid modality. To conclude, it can be said that technology, globalization, and work environments are changing the way people will work in future. Many of the jobs of the past are disappearing. It is therefore necessary to train teachers and students to include soft skills in their development. Teachers who recognize the potential benefits of blended learning for student achievement are more likely to embrace the integration of technology and use it to improve classroom teaching and learning.

This study is one of the first attempts to prove the conviction that teachers must work with a hybrid modality based on their own conceptions and discover how students live this experience. This study proposes the need to continue analyzing the beliefs and conception of teachers and students regarding the use of BL and its relationship with what academic society demands to make their training and skills increasingly coherent.

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