University professors and blended learning from the perspective of the students

El profesorado universitario frente a la modalidad semipresencial desde la óptica del estudiante

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Resumen: Con el propósito de posibilitar el fortalecimiento de la diversificación de modalidades educativas y la toma de decisiones institucionales en la Universidad Autónoma de Baja California se desarrolla el presente artículo. Se comparten los resultados de un estudio exploratorio descriptivo que aporta de forma relevante a la construcción de un diagnóstico de necesidades actuales de formación docente específicas para la operación y aseguramiento de la calidad educativa en la modalidad semipresencial. Se reflexiona sobre el origen de la modalidad semipresencial, su actual configuración y caracterización en la institución, así como una inicial exploración cuantitativa de las necesidades de formación de los docentes que operan en dicha modalidad, desde la óptica de los estudiantes. Se reitera que el profesorado de todo el mundo, particularmente los de educación superior, deberemos estar preparados para guiar a las futuras generaciones para la apropiación de sus procesos formativos, con actitud positiva y desarrollando habilidades tecnológicas.

Palabras clave: *Profesorado Universitario, Modalidad Semipresencial, Educación Superior.*

Abstract: This article is developed with the purpose of making possible the strengthening of the diversification of educational modalities and institutional decision-making in the Autonomous University of Baja California. The results of a descriptive exploratory study are shared, which contributes in a relevant way to the construction of a diagnosis of current needs for specific teacher training for the operation and assurance of educational quality in blended learning. It reflects on the origin of the blended modality, its current configuration and characterization in

the institution, as well as an initial quantitative exploration of the training needs of teachers who operate in this modality, from the perspective of the students. It is reiterated that teachers from all over the world, particularly those of higher education, must be prepared to guide future generations for the appropriation of their learning processes, with a positive attitude and developing technological skills.

Keywords*: University Professors, Blended Learning, Higher Education.*

1. Introduction

The ubiquity of technologies and interest in information and knowledge are characteristics of society today. Therefore, it is necessary to construct mechanisms that provide people with critical skills that allow them to make responsible decisions to effectively manage their lives, develop their full potential, and encourage all members of society to participate fully in it and influence the decisions that affect them. A "workforce trained in information and communication technologies (ICT) that is reflective, creative, and capable of solving problems in order to generate knowledge" will also be necessary [1].

The ideal tool to achieve the social and economic goals above at the international level is undoubtedly the educational systems of all nations. Teachers worldwide, particularly those in higher education, must be prepared to guide future generations to appropriate these goals.

In line with these challenges, the Universidad Autónoma de Baja California (UABC) states in its institutional mission, in the Institutional Development Plan (IDP) 2019-2023, its interest in "Educating professional citizens, competent in the local, national, transnational, and international spheres, free, critical, creative, supportive, enterprising, with a global vision, and capable of transforming their environment with responsibility and ethical commitment" [2].

The Educational Model of the university [3], as part of its curricular proposal, details the characteristics of curricular flexibility, which includes diverse possibilities, programs, and learning scenarios. It is a model with a competency-based approach, based on humanism, constructivism, lifelong learning, and diverse programs to help the students choose the most convenient school career path to strengthen their overall training.

There are three education programs recognized in the School Statute of the institution: on-site learning (an educational program developed in the classrooms, workshops, and laboratories, as well as through internships, practices, and school, technical, and professional visits, in particular schedules and periods); off-site learning (an educational program developed outside the classrooms and capable of adjusting to the availability and needs of each student based on open or distance education programs); and blended learning (or mixed). The latter "combines the various existing educational programs to achieve the desired learning outcomes" [4].

This article shares the results of the first stage of the research "Diagnosis of teacher training needs for the blended learning program of the Universidad Autónoma de Baja California", which consists of a descriptive exploratory study that will make it possible to analyze current teacher training needs, especially those necessary for the operation and assurance of educational quality in the blended learning program. The purpose is to make it possible to strengthen the diversification of programs and institutional decision-making.

This publication reflects on the origin of the blended learning method and its current configuration and characterization in the UABC, with the support of the Center for Open and Distance Education (Spanish: *Centro de Educación Abierta y a Distancia*, CEAD) of the university, as well as an initial quantitative exploration of the training needs of the teachers operating in this program, from the perspective of the students.

2. Background

Learning programs mediated by technology are not a recent phenomenon—"since the 19th century in Mexico in areas of attention to social groups such as adult education, extracurricular education, or rural schools, possibilities were considered such as combining study with work through flexible schedules" [5]. The possibility of self-managing study circles in communities far from educational institutions or cities was also considered, as well as the introduction of communication figures as intermediates in the educational dialogue between teachers and students.

Subsequently, higher education programs in programs different from the traditional one emerged in various public and private universities. Particularly at UABC, the blended learning program originated in the *part-time learning* program—defined as a program that does not consider the presence of the student on school premises to be obligatory. However, that does not mean the disappearance of teaching, but rather that it acquires a different dimension and meaning to the traditional method since it is organized and exercised as a support for the educational needs and requirements of the students [6].

This program arose in the Faculty of Human Sciences in 1998 from the concerns of a group of citizens of Ensenada's neighboring city, who on several occasions raised before various university bodies the need to offer a social sciences degree in their city. They argued that although the campuses were not far, their living and working conditions prevented them from relocating (Sociology was offered in Mexicali). After meeting with authorities from the UABC in Ensenada, they traveled to Mexicali and presented this request to the Faculty of Human Sciences Directorate [7].

When this group of people from Ensenada began their process, the conditions already existed to address the educational demand in a way different from the traditional one since they had the experience of a growing number of educational institutions that had already incorporated open and distance learning systems, adapting electronic media (video, CD, among others) to the educational process.

The concrete proposal was to offer the degree in Sociology in a blended learning program exclusively for Ensenada. It is worth noting that creating a program with these characteristics was aided by the existence of an academic and regulatory framework that enabled its operation. This framework was the policy of curricular flexibilization of the UABC, particularly the document entitled *Curricular structure, study plans and programs of the School of Educational Sciences,* UABC, which takes recommendations by the National Association of Universities and Higher Education Institutions (Spanish: *Asociación Nacional de Universidades e Instituciones de Educación Superior*, ANUIES) such as "promoting new professional training programs which are flexible, versatile, and less based on formal schooling, as well as promoting the introduction of innovations in teaching" [7].

Hence, one of the aspects to highlight in the justification of the project is reforming the purpose and aim of curricular flexibility established at the UABC. It was indicated that it was necessary "to diversify the training models, promoting self-learning and continuous updating; to make the forms of incorporating and learning more flexible, providing a diverse range that responds to the multiple forms of potential demand for educational services" [8].

The new program entailed abandoning lectures to make way for group methodologies instead of the dissertation of contents. Thus, the educational proposal promoted the creation of spaces for training rather than information.

As can be seen, this method was designed "for an adult public that, due to different circumstances, did not have sufficient time to regularly attend classes," that is, from Monday to Friday. Unlike the schooled program (on-site), "this new program proposed fewer hours of learning in the classroom and instead gave greater importance to the hours of self-learning and learning guided by occasional academic mentoring" [9].

Twenty-one years after its creation, enrollment in the program, now called blended learning due to the necessary incursion of technology, has increased from the initial number of 33 students in its first year to 767 students out of a total of 2,276, only in the Faculty of Human Sciences (Spanish: *Facultad de Ciencias Humanas*, FCH), which represents 37% of the total population of the faculty.

The FCH offers five educational degree programs: Educational Sciences, Psychology, Communication Sciences, Sociology, and History; the first three are in the on-site and blended learning programs, and the latter two only in the blended learning program. The characteristics of this blended learning educational program allow students today "to study a degree program based on a blended learning system of tutorial teaching, which promotes self-learning, stimulates the development of study habits, and the performance of the student and teacher-advisor as responsible for the teaching-learning process" [10].

3. Blended learning method and teacher profile

This program has been institutionally renamed at UABC as "blended learning" since it responds to the current institutional regulations. Furthermore, its operation has been significantly modified with the necessary introduction

of information and communications technology (Spanish: *Tecnologías de la Información, la Comunicación y la Colaboración*, TICC).

Internationally, the blended learning method has had high uptake levels among students of higher education and teachers, who consider that the promotion of self-taught skills, among others, "allows them to achieve good results" [11], as well as essential knowledge. Furthermore, they maintain that "teachers play a significant role as long as they adjust to the conceptual and practical aspects and adopt different learning styles" [12], and make efforts to improve the quality of the training process in professional training.

Given the above, the following questions arise: Are specific teaching skills required to teach in the different learning programs? Do students perceive that teachers develop teaching strategies according to the delivery method? Do students perceive that their teachers have adequate training to teach in that delivery method?

As mentioned, teachers must play a crucial role in developing this method, internationally called Blended Learning. Blended Learning or B-Learning is defined as an "educational strategy that integrates activities and resources from the on-site and virtual methods in different ratios to achieve the objectives of a course or subject with greater efficiency and quality" [13].

It is, therefore, "the combination of classroom teaching and the mentoring of the teacher or tutor as a complement to the consolidation of learning" [14], and it is worth highlighting that teacher training is essential. "Teachers must play an important role in the development of these methods; thus, training is an essential element" [15]. Otherwise, misconceptions about blended learning may arise, and different approaches may be adopted to design the teaching and learning processes.

Blended learning is at the heart of a logical and transformative evolution of education, particularly higher education, "and it is based on three fundamental premises: restructuring of traditional class times; integration of on-site and online learning times; and redesign of the course to enhance student participation" [16].

Interestingly, every time a teacher profile is analyzed, and the desired competencies of a teacher in the distance education system are listed, "contemporary authors refer almost exclusively to the skills required for the management of communication technologies through computers" [17].

Therefore, in terms of teacher knowledge, particularly in the blended learning method, there is a need to master the theoretical foundations of information and communication technologies (ICT) so that, in turn, they master the basic communication tools such as chats, forums, and e-mail, among others.

For their part, Simonson *et al*. [18], in line with the above, highlight the importance of knowing the guidelines in teaching, such as time organization in learning modules, e-mail communication, chats, discussion questions, and progress reports, to create continuous interaction between students and teacher.

Undoubtedly, blended learning teachers must reinforce their technological competencies and continuously participate in specialized training processes to be up to date with technology-driven learning processes, allowing clear communication with students through the use of technology, whether it be asynchronous or synchronous.

At the UABC, the commitment to train and update teachers in the educational technology dimension is a reality. Through CEAD, they insist "on training for the development of courses that contain attractive learning environments for the student within the current educational programs, both in the on-site category supported by ICT and, particularly, in the blended and distance learning categories" [19].

Due to the theoretical references and the context of the need to develop technological teaching competencies, particularly for blended learning and distance learning, the CEAD created a certification course with the following general aims: "To design and teach courses in the blended or distance learning category through mastery of ICT, teaching strategies, and virtual learning platforms, as well as to acquire theoretical knowledge that supports those categories" [20]. The CEAD obtained interesting results from 2016 to date: 200 teachers have obtained the certification. Many additional teachers have completed several of its courses and are on their way to obtaining the certificate. However, it is necessary to evaluate the impact of the teachers who have completed this certification on their students' learning processes.

Del Hierro [17] proposes a five-stage structure to describe blended learning course teachers' current profile. She created it using a methodological orientation to improve the teaching-learning process and the teacher training and improvement processes. The first stage corresponds to the description of "ideal" teacher characteristics in the blended learning category. The second stage deals with the design of documents from the profile categories outlined in the previous stage. The third stage addresses the management of the documents and the description of information. The fourth stage corresponds to the description of the current characteristics of blended learning teachers. It is based on the information generated in the previous stage, thus generating the first approach to the

blended learning teacher's current profile based on their essential categories (skills, attitudes, and knowledge). Finally, in the fifth stage, steps to improve performance and the blended learning method are suggested.

The analysis that Del Hierro [17] carries out to outline the ideal teacher profile for the blended learning category is interesting. The table below (Table 1) presents the results of the first stage of the proposed methodology, which contains a set of knowledge, skills, and attitudes.

Table 1. Ideal teacher profile for the blended learning method [17].

Knowledge	Skills	Attitudes
Basic grasp of Information and Communication Technology (ICT).	Use of technological tools (e-learning platforms, videoconferencing).	Openness to change when accessing the technological platform to teach subjects.
Basic grasp of technological platform elements (chat, forums, e-mail.	Communication with the students (asynchronous, synchronous).	Availability for interaction with the students by e-mail or another ICT tool.
Basic grasp of strategies or techniques to create learning environments and self-management of blended knowledge.	Use of hardware and software (text processor, slideshows, Internet).	Motivate learning in blended environments. Encourage course progress.

The questionnaire applied and analyzed in the research exercise of this article was derived from this analysis of knowledge, skills, and attitudes.

4. Method

A quantitative research exercise of a descriptive character was carried out to understand students' perception of their experiences in the blended learning category and their perception of their teachers' performance in this category. A descriptive study makes it possible to describe phenomena by highlighting how they are and how they manifest themselves. With this type of study, it is possible to specify the properties, characteristics, and profiles of people or groups. In other words, “they are only intended to measure or collect information independently or jointly about the concepts or variables to which they refer, that is, their object is not to indicate their relationship” [21].

The method used consisted of a proposed attitudinal scale developed by Del Hierro [17], 2014, based on the ideal teacher profile variables. It includes three dimensions and a section for sociodemographic data: age, gender, semester, and employment situation. The first dimension refers to the teacher's technological skills in teaching a class in the blended learning category. The second dimension refers to the attitudes of the teacher to the category. Finally, the third dimension summarizes the level of satisfaction with the first two sections.

This attitudinal scale presents items as statements to measure attitudes on a Likert scale, which was developed by Rensis Likert in 1932. It consists of a set of items presented as statements to measure the subject's reaction in three, five, or seven categories [21]. An attitudinal scale measures a subject's predisposition to respond consistently positively or negatively to symbols presented as situations or events. The items have the following possible answers: *never (1)*, *almost never (2)*, *sometimes (3)*, *almost always (4)*, *always (5)*. Regarding the content reliability measures, they are based on expert opinion, and reliability was obtained through Cronbach’s alpha with a value of 0.90.

The electronic scale was created using the *Qualtrics XM* program. The data were collected by applying the questionnaire. They were analyzed using the IBM SPSS (Statistical Package for the Social Sciences) version 20 statistical program. The study took place during the 2020-1 school cycle. The study population included students in the blended learning category (549) of the Faculty of Human Sciences.

Table 2. Sample calculation.

n=	$\frac{N \times Z^2 \times p \times (1 - p)}{(N-1) \times e^2 + Z^2 \times p \times (1-p)}$
Universe size: 549	Desired level of reliability: 95%
Maximum acceptable error: 5%	Sample size: 226

Source: Created by the authors.

A stratified probabilistic sample type was used to increase the accuracy of the sample [21], considering as segments the five educational programs that are given with the blended learning method. The sample size was determined according to the subpopulations, where *nh* and *Nh* are the sample and population of each stratum, and *sh* is the standard deviation of each element in a given stratum (Table 2). Therefore: ksh=nh/Nh, which is: 226/549=0.4117. Thus, each educational program's total will be multiplied by this constant fraction to obtain the sample size for the stratum, when substituted: (Nh) (fh) = nh, as shown in Table 3.

Table 3. Stratified probabilistic sample of the Blended Learning educational programs.

Educational program (stratum)	**Total population *(fh)* = 0.4117 *Nh (fh) = nh***	**Kch**	**Required sample**
Degree in Educational Sciences (LCE)	135	0.4117	56
Degree in Psychology (PSI)	251	0.4117	103
Degree in Communication Sciences (CSC)	71	0.4117	29
Degree in Sociology (SOC)	41	0.4117	17
Degree in History (HIS)	51	0.4117	21
TOTAL	549		226

Source: Created by the authors.

The sample required by stratum (educational program) was obtained with accuracy after two mass mailings were sent to this student population. Of the students who responded, 129 are women, and 97 are men, reporting an age range between 18 and 45. One hundred thirty-two are between 18-22 years, 37 between 23-27 years, 39 between 28-37 years, and only 18 are between 38-45 years. They range from the third to the eighth semester. 45% of the population work 8 hours a day, 36% work less than 6 hours a day, and 19% do not work.

5. Results

This study presents the results of applying the opinion scale to the characteristics of the teachers of blended learning courses in the Faculty of Human Sciences from the students' perspective, analyzing the three dimensions that comprise the scale.

The results of the first dimension, "*Technological capacity of the teacher to give blended learning courses*" (comprising 22 items), show that, in general terms, students perceive that their teachers lack the technological skills to teach blended learning courses. However, particularly in the items *How often does the teacher use the tool: Publication of class plan (e.g., session plan, calendar of activities and assignments)* and *the tool: Publication of the course program (e.g., Program, general design of the course)*, the assessment was positive, that is, 76% of the population surveyed reported that their teachers do comply with the planning and design of their courses adequately. It is worth noting that the sector with the most positive results is that of the Educational Sciences program, and the least positive is that of the Communication Sciences program.

On the other hand, as illustrated in Table 4, regarding the items corresponding to the tools teachers used in their sources, the results are the following:

Table 4. Technological capacity of the teacher to teach blended learning courses (general media).

1. Uses the following tools in blended learning courses:	LCE	PSI	CCC	SOC	HIS
a. Text processors (e.g., Microsoft Office Word)	2.45	4.66	3.60	3.45	3.10
b. Traditional presentations (e.g., Microsoft Office PowerPoint)	4.24	4.98	4.14	4.14	4.14
c. Audiovisual and interactive presentations (e.g., Videos, Powtoon)	3.22	3.06	3.12	2.22	2.12
d. Spreadsheets (e.g., Microsoft Office Excel)	1.08	1.68	1.87	1.94	1.08
e. Internet (e.g., Hyperlinks, files in HTTP format, applications)	4.02	4.38	3.24	3.12	3.20
f. Chat (e.g., MSN, Skype, Meet)	1.12	1.34	1.88	1.62	1.02
g. Distance course platforms (e.g., Blackboard, Moodle, Classroom)	3.22	3.12	1.88	1.22	1.92
h. Discussion forums and wikis	2.98	2.19	1.88	1.11	1.18
i. Social media (Facebook, Twitter)	2.52	3.22	4.20	3.52	4.32
i. Videoconferencing (e.g., Blackboard Collaborate, Meet)	2.08	2.08	2.02	2.08	2.22

Source: Created by the authors.

When it comes to communication tools such as chats and video conferencing, students report that their teachers rarely use them. Similarly, the discussion forums—understanding these as tools for communication, debate, and construction of learning—are unfortunately not used, despite their use being "essential for the development of these blended learning methods" [15]. 79% of the group agree that these tools facilitate communication and both individual and group learning. The sector with the most favorable results is once more the Educational Sciences program.

According to the participants' perspective, the inference is that the teacher's technological skills in teaching the blended learning category do not play an important role most of the time. Constant monitoring and clear feedback are needed. There is a lack of dialogue and debate in electronic media on the construction of knowledge, a lack of innovative and interactive media and materials, and an excess of documents.

The second dimension views the students' perspective as the "*Attitudes of the teacher in implementing the blended learning course*". The results analyzed show that the perception is that only 42% of teachers address the suggestions and requests of their students, while the rest do so only sometimes or never consider them (58%). The item "*How often do they carry out activities so that you can organize yourself, set your work schedule, or encourage reflection on your learning?*" indicates that only 23% of teachers carry out activities that promote the student organizational attitudes that allow them to set their work schedules and motivate them to reflect on their learning.

The answer to the item "*How often is feedback provided when the student requires it to achieve their goals despite the physical distance?*" is alarming. It indicates that 47% of teachers almost never provide feedback when the student requires it. In contrast, the answers to the item "*How often is there feedback on a task before the next activity?*" indicate that 21% of teachers always provide feedback on a task before the next activity, 43% almost never, and 36% sometimes.

Therefore, not all teachers make time for feedback with their students, although feedback can be considered an essential component of teacher-student interaction that ensures effective learning in this form of instruction. This suggests an opportunity to think of a feedback process that favors virtual learning environments. Regarding the analysis by sectors (educational programs) of this dimension, it is worth noting that the differences between programs are minimal.

Finally, the third dimension, "*General satisfaction with the use of blended learning courses*," includes three major items, which make it possible to grasp the degree of satisfaction of the students surveyed concerning their experience, skills, and attitudes demonstrated when developing or teaching blended learning courses.

According to the results obtained, the level of satisfaction reported by the students is low. For the first two items, they report being *unsatisfied* and *very unsatisfied:* "How satisfied are you with your experience regarding the development of the blended learning course?" (30.9% *very unsatisfied* and just 3.4% *very satisfied*), "How satisfied are you with the technological skills demonstrated by the teacher in giving the blended learning courses?" (44.6% *very unsatisfied* and just 1.6 *very satisfied*).

There is greater dissatisfaction regarding the technological skills demonstrated by their teachers. As for their experiences in a blended learning course, 30% of students report a high degree of dissatisfaction, which suggests that the teachers' digital skills are an area that must be dealt with since it affects the students' experience.

On the other hand, concerning the teachers' attitudes, the percentages are radically inverted, which reflects the fact that students recognize that it is not an attitude problem; the problem is the training of their teachers in this teaching method: "How satisfied are you with the attitudes of the professor to developing or giving the blended learning courses?" (7.9% *very unsatisfied*, 16.3% satisfied and 32% *very satisfied*). In this dimension and the previous one, there are no significant differences by sector.

6. Conclusions

This study confirms that educational systems are efficient tools for eradicating attitudes in student attitudes that are contrary to established social goals. It does so based on documentary analysis and an initial reflection on the origin of the blended learning method and its history at the Universidad Autónoma de Baja California, as well as a theoretical conceptual review on the matter and some empirical proposals for the construction of ideal teacher profiles in the blended learning method.

Teachers worldwide, particularly higher education teachers, must be prepared to guide future generations in appropriating these objectives with a positive attitude and by developing technological skills.

It is recognized that at present, it is almost impossible to provide quality education without the presence of ICT´s, since their benefits include support to teachers in the fulfillment of their functions, as well as "their contribution to the cognitive, procedural and attitudinal development of the learner" [22].

For this, teachers will need to develop skills that allow them to adapt "to the changing digital ecosystem in which they operate, but also to complement the quality of educational programs through the inclusion of ICT´s in the teaching-learning of the various areas of knowledge" [23].

Therefore, there is a need to continue analyzing the perceptions and, mainly, the students' experiences who are taught using this method. It is also necessary to continue the study and self-evaluation of teachers to achieve the construction and definition of the ideal teacher profile to work with the blended learning method.

This first statistical approach to the object of study constitutes a call to action so that the findings lead to more positive results for the teachers, the students, and the institution.

Among other aspects, there is a clear need for the students to receive proper attention and feedback from the teachers. That is why it´s important to confirm in the future if the lack of attention to feedback is the product of an attitude problem.

Simonson *et al*. [18] emphasize the importance of knowing the guidelines for teaching in blended learning programs with the support of technology. However, teachers using this method do not make real or at least clear distinctions between it and on-site learning. Time organization when using a method like this is essential, and the learning modules illustrate a lack of this skill.

Based on our research outcomes, we will work on the development of an institutional strategy proposal that will enhance faculty teaching, particularly with regard to instructors who work in the blended learning modality, so that the work methodologies and didactic strategies are favoured and clearly oriented towards students' learning processes, and with particular emphasis on learning feedback issues.

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