Effects of Blended English Learning in Superior Education: A Case Study

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Abstract

Learning English, not as a native language, has fostered the application of tools and methods in the teaching-learning process. The combination of virtual classes and face-to-face learning is looked at as a new procedure with students at superior undergraduate institutions of Loja. The purpose of the study focuses on showing how Blended learning benefits learners more than Virtual lessons only by implementing ICT resources for teaching, and its effect is significant in quantitative analysis. This study uses a quasi-experimental method of Difference-in-Difference estimation to compare the grades of 296 students. Additionally, this study uses an observation checklist and a teacher's questionnaire to get the qualitative revision. The study's outcomes focus on showing how Blended Learning benefits learners compared to virtual lessons, especially in class participation. To conclude, the authors mentioned how the interaction of students with facilitators and peers helps students to engage with better results. However, there is a necessity for changes in institutional conditions to have real innovative progress in education.

Keywords: Virtual Classes, Blended Learning, Difference-in-Difference

Introduction

According to EF English Proficiency Index (EPI) (2022), Latin America has improved its English level, and most countries' students' scores have increased. Hence it passed from a low to a moderate level.

The world has changed the way of working, and education was no exception which adapted the teaching-learning process to online tools and platforms (Mishra et al., 2020; Coman et al., 2020; Ali & Kaur, 2020; Almonacid-Fierro, 2021; Iglesias-Pradas et al., 2021; Aydin, 2013; Nguyen, 2022). This kind of learning allows good interaction between teachers and students. According to Onyema et al. (2020), approximately 100 countries must take an unscheduled closure of their infrastructures, and one billion learners must consider digital learning as the main means. But now, educational agents have adopted a combination of the educational path, taking personal and virtual classes into account. This well-known procedure is Blended learning (Holiver et al., 2020). This tool is defined as a strategic and systematic approach combining face-to-face and virtual communication by applying better technological communication (Rahman et al., 2020). Creating a good atmosphere is the most successful way to teach English, where the language can be used properly among students. Fisher et al. (2006) mention English needs a mixture of didactical methodology and resources of technology to carry out effective learning. Modern

teachers started to apply a recognized learning model called blended learning combining faceto-face instruction with technological resources (Graham, 2006). The principal aim of this type of learning is to involve learning by keeping learners interacting with a professor, thus making them quite autonomous in their process of learning (Adas & Bakir, 2013).

Moreover, hybrid learning focuses on the student's needs, where its development is modified, encouraging creativity and critical thinking. It also allowed educators to provide continuous feedback to learners (Buran & Evseeva, 2015). It means that the instructor becomes a guide and the students the focal point of the class (Anthony et al., 2019). Using this kind of model provides more opportunities for teachers to in teaching English skills because students have daily contact with others through the Internet, and access to a wide variety of English information, thus facilitating the hybrid learning process. In addition, according to Miyashita (2021), it allows the development of higher-order thinking of EFL learners, drawing on the construct of mediation from sociocultural theory.

In Ecuador, English is mandatory for primary schools and high schools as the Council of Education (2014) mentioned. Therefore, it encourages teachers to get into the teaching and learning process with different methodologies and implement technological resources and innovative activities according to the students' necessity. According to Solano et al. (2017), technology is not well applied in classrooms, and in other cases, it is excluded from the teaching-learning process in some Ecuadorian schools. Furthermore, high schools keep using traditional methodology, and even teachers do not explore technologies in the teaching process, affecting students because they are just listeners and not active participants in the process (Karanezi & Rapti, 2015).

The Superior educational institutions in Ecuador consider Blended learning the most suitable way of developing the teaching-learning process because it engages students again with the conventional way of personal learning and conserves the virtual activities to accomplish at home (Francis & Shannon, 2013). For that reason, this study will focus on the analysis of the effects of Blended Learning English learning in Superior Education using as data a sample of non-graduated students of a Superior Institute in the city of Loja, Ecuador. The study collected data using a survey and grading scores from two groups of students.

The proposed hypothesis is based on the thought that Blended English learning has promoted continuous accompaniment and better interaction between professors and pupils. Likewise, there is a positive significative difference in the final grades when students attend blended and just virtual classes.

To get the results, a general objective was established to find the effects of Blended English learning in Superior Education using qualitative and quantitative methods for creating a better environment in the teaching-learning process for undergraduate students. To achieve the general aim, there are some specific objectives, such as collecting the data of students' scores in two periods of the academic term using suitable software to compare them and get quantitative results. The second objective was to identify the strengths and weaknesses of students when they work on blended English learning by applying a survey to show qualitative information. The last objective was determining the effectiveness of blended English learning on undergraduate students in a superior institute using the collected data to specify the usefulness of this new approach.

Literature review

Face-to-face vs. Online learning.

The life of human beings is continuous learning. According to Azizan (2010), humans continuously learn new words, concepts, and ideas which change their manner of thinking; and it does not depend on where they are and whom they interact with.

In table 1, there is a range of strengths and weaknesses in Face-to-face and online learning. Therefore, according to Azizan (2010), effective blended learning is necessary to associate the strengths of this learning to encourage the link among instructor, learner, classroom, and technology. Moreover, Buran and Evseeva (2015) stated that blended learning had promoted many characteristics of the educational process, such as social interaction, personalized learning, and direct contact with the target language.

Advantages Disadvantages Distractions can lead to a loss of Interactive conversations through body expressions and using real interest in the class. material such as readings, scripts, and The lack of mastery of the content role plays. from the teacher. Little access to some types of Real interaction and contact between materials. instructor and students. Face-to-Abuse the use of classroom time for Creating a good atmosphere face supporting students' necessities by content development. Learning Lack of resources for monitoring helping them, responding to students' work. questions, and handing out material. Effective teamwork and getting new The assessment process requires experiences by discussing topics. more details and responsibility. Easy access to manage and evaluate students. Online establish A variety of contexts for discussions resources to discussions through forums and during the meetings for providing feedback and corrections. chats. Effortless The lack of confidence to discuss access to learning regarding time, place, and schedule. with each other leads to extensive Online and disconnected interactions. Learning Ongoing facility to connect with others Hard to keep students' participation to update the community of learning. in the teamwork. Affordable communication between Miss of voluntary participation and teachers and students about activities unexpected moments.

Table 1. Face-to-face vs. online learning

that must be done.	Resources such as equipment, devices, and IT skills always depend on Internet access to find information.
	The low quality of the Internet may produce a loss of concentration and
	interest in learning.

Note. Adapted from Azizan (2010).

What is Blended Learning?

Research on blended learning is overcoming the predictability of the teaching process since it is related to other educational fields like English teaching methodology, teaching and learning tools at technology, computer-assisted language learning (CALL), and distance education (Picciano, Dziuban & Graham, 2013).

Bonk and Graham (2012) stated that blended learning is the mixing of face-to-face training with computer-assisted guidance. It means that blended learning uses both kinds of learning, a conventional classroom and e-learning, applied in the educational procedure. Moreover, Tayebinik and Puteh (2013) claimed that traditional face-to-face or fully online teaching and learning methods are not much effective and have less sense of engagement than blended learning. It is a new opportunity to motivate students to be involved and perform an interactive role both in and out of the class due to it being a supple and functional form of improving the educational process (Senffner & Kepler, 2015). Furthermore, as technology grows, the teaching process has experienced great innovative transformations which allow the designing of updated activities, instruments, methods, and approaches aimed at current generations to get ideal learning results.

Parts and structure of Blended learning

Mirriahi and Fox (2015) mentioned that blended learning is a procedure that includes the appropriate learning and teaching approaches, strategies, technology, and/or tools to give a significant, variable learning experience to accomplish educational outcomes. The standards-based framework proposed could be applied to a course design to get consistent, high-quality Blended learning training across an Educational Institution; instructors could employ it as a self-assessment tool to recognize students' strengths and weaknesses in Blended Learning lessons and could enlighten professional development programs.

Shih (2010) affirmed that Blended learning is based on main elements like the classroom, where it is developed through face-to-face sessions; the instructor, who provides comments and feedback about the learning process; technology, which helps the teacher with a variety of resources such as videos, websites, multimedia software, chats, forums; and students who are part of active and independent learning. The suggested Blended Learning structure has criteria, which are the indicators of the skill of experts creating and implementing a Blended Learning course and standards that delimited the superiority of preparation.

The criteria are related to resources (availability); activities (facilitate learning experience); support (provide ongoing feedback); and assessment (creation of tasks for assessment, student

accessibility, and self and peer assessment). Meanwhile, standards are the academic digital references asked in Blended Learning spaces and could be used as a hierarchy of abilities and attributes. According to Bennet (2014), the superior level of the standard allows Faculties to account individually for the scale and diversity of Blended Learning and e-learning procedures across an institution.

Regarding Rachmadtullah et al. (2020), the Covid-19 outbreak has changed the manner of teaching and brought some problems to education, like the lack of a good Internet connection in institutions. However, a helpful way to accomplish educational goals has become the use of blended learning through webinars such as Zoom, GoToWebinar, Cisco WebEx, Adobe Conex, and Google Hangouts, among others.

Models of Blended Learning.

The application of Blended Learning combines different methods to accomplish the goal in two sceneries of learning. It combines different event-based activities, considering face-to-face classrooms, live e-learning, and self-paced learning (Valiathan, 2002). The models are skills-driven, attitude-driven, and competency-driven learning.

	What?	Why?	How?
Skill-Driven Model	It is the combination of self-paced learning with facilitator support to insert knowledge or abilities.	The facilitator or peer supports. It is like regular feedback.	Group learning plans. Pad self-paced learning material and closed sessions Labs of traditional classroom settings. Email support Long-term projects.
Attitude-Driven Model	It combines a variety of events and media to achieve detailed behaviors.	The application of peer-to-peer interactions and a risk-free environment helps attitudes and behaviors.	
Competency-driven model	It blends performance support tools with knowledge management resources and mentoring to develop workplace competencies.	To obtain and pass on tacit knowledge, the learner may interact with and check experts in the field.	Assign professional assistants. Develop a knowledge repository such as an LCMS or LMS.

Note. Model of Blended Learning (Valiathan, 2002).

Benefits of blended learning in EFL Classroom.

Nowadays, using blended learning is essential in EFL classrooms. For instance, Nazarenko (2015) claimed that the application of this type of learning gives *a* chance to integrate wonderful technologies into the teaching-learning process in this century, plus the traditional forms of learning.

In addition, Buran and Evseeva (2015) proposed a list of benefits that blended learning provides to EFL classrooms since it is focused on the needs of learners, and the materials can be adapted to students' requirements. Consequently, the teacher could use a variety of materials or activities in the learning process to increase motivation and develop creativity and critical thinking in students. Moreover, independence is another benefit because students improve the target language by practicing it autonomously as part of their learning, where they get the teacher's feedback when it is the case. Hence, the teachers become mentors and facilitators.

Furthermore, Singh (2003) states that Blended Learning decreases both times and cost in relation to equipment, resources, and skills; however, applying face-to-face sessions costs less since it is easier to use videos, documents, text assignments, PowerPoint presentations, and chats which potentially improve learning outcomes. Moreover, Vasbieva et al. (2016) and Siew-Eng and Muuk (2015) claim that meaningful and productive experiences are given to learners while working with English using innovative methods that enhance learning results and strengthen the satisfaction and interaction of the learners in the class.

As a result of all these advantages, many EFL educators have implemented Blended Learning in their lessons to boost students' engagement to create a positive learning environment in class.

Research Questions

To achieve the purpose of this study, the survey and analysis were on the lookout for answering the following research questions:

1. What are the differences in undergraduate students' achievement when they get Blended learning versus Virtual learning classes?

2. What effects do Blended learning versus Virtual learning classes have on undergraduate students' achievement?

3. What are teachers' perceptions towards blended learning vs virtual learning classes?

Methods

Pedagogical Setting & Participants

Participants

The setting of the study is a technologically superior institute in Loja, Ecuador. This educational place is recognized as a provider of education in the South of the country, known as Zone 7 (Loja, El Oro, and Machala provinces). This institute has its center of teaching English annexed, and this is called Centro de Idiomas Sudamericano, its acronyms CIS. Therefore, the study takes as the sample students from 7 undergraduate technological professional degrees who belong to

this English center.

The study took place during English classes which were over a complete academic period of four months. During that period, the institute had two types of modalities: virtual (first bimester) and blended learning classes (second bimester) due to the remote circumstances of the emergency of Covid-19. 296 students were part of the study. Thus, the first bimester was worked by virtual lessons, while the next was blended learning, which means that students took both modalities, although just the second exam was face-to-face.

Setting

The purpose of this quantitative analysis is to check students' progress considering the variety of grading parameters that CIS and its teachers have; for instance: individual participation in classes, group work activities, autonomous assignments, and quizzes. All these parameters are considered for the first and second bimesters, as seen in Table 3. It will be easy to compare because the DID estimator allows working in this kind of analysis within a treated and non-treated group in two distinct moments, the first and second bimester.

	Student evaluat	ation method		
	Detail of Activities	Percentage	Score	
-	Autonomous work	20 %	3	
First & Second –	Collaborative Works	10 %	1	
Bimester	Practical-experimental work	15 %	2	
_	Unit Quiz 1	25%	6	
_	Mid-Term Exam	30 %	8	
_	Total	100 %	20	

Table 3. Student Evaluation Method at CIS

Note. Grading detail at CIS

Design of the Study

The choice of students was not random due to this quasi-experimental study which needed to apply similar groups as part of the variables. The groups thought that they had related course levels and numerous students. Therefore, there were 117 in the treated group and 161 in the non-treated group.

Data were collected from 14 classes whose English proficiency level was A1 and A2 according to the Common European Framework Reference (CEFR). Considering this data, the DiD estimation was run to get specific quantitative details. Consequently, descriptive statistics and Difference-in-difference (DiD) estimator were the best tools for applying quantitative analysis.

This level is according to the course that they take from the first level until the A2.2 to getting the required level by the Higher Education Council (CES, acronym in Spanish) delivered by the Academic Regime Regulation and its article 64 that specifies to students at the technological level need to reach A2 English level based on CEFR; therefore, Education development plan considers A2 EFL proficiency level as one required to achieve the degree.

Furthermore, the qualitative analysis includes an observation checklist for participant teachers in the research project with each group of treatment and non-treatment and a teacher's questionnaire where the importance of practicing blended learning classes vs. virtual learning classes was analyzed.

Data collection & analysis

This research includes a treated and non-treated group. Their scores were analyzed in two stages: the first and second bimesters. A descriptive analysis allows the study to detect between both groups in two bimesters that there is a difference in the average score. Similarly, figure 1 shows that the data is balanced in the number of members, the groups are identified properly, and the treated and non-treated groups have differences in scores when taking virtual classes vs. blended learning.

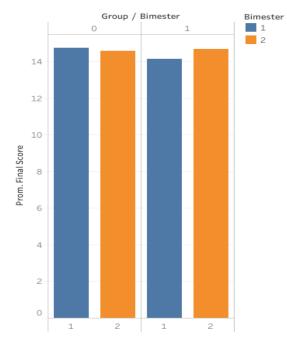


Figure 1. Average Score in Treated and Non-Treated groups.

Note. The figure shows the results of average final scores between non-treated and treated groups in the first and second bimesters.

Likewise, all sub-scores were analyzed individually to get clear outcomes and express reliable results. Most of the treated groups in the second bimester showed maintenance or an improvement in their academic performance when they were taking blended learning (Figure 2).

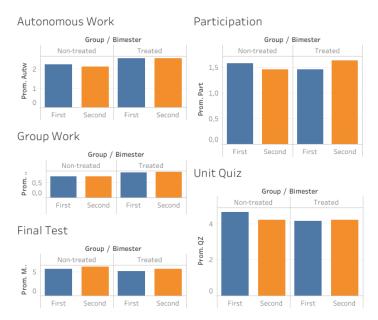


Figure 2. Summary of descriptive statistics in sub-scores.

Note. The figure shows the results of average scores at autonomous work, participation, group work, and unit quiz between non-treated and treated groups in the first and second bimesters.

In addition, it had a pre and post-test to check the effectiveness of the methods using a quantitative method. In the data analysis, two differences were the best estimation, for instance, one difference between the starting and the final of the semester, the cross-sectional difference, and non-treated and treated students.

The diff-in-diff estimator was generally from a linear parametric model (Wooldridge, 2007; Athey & Imbens, 2006). The regression equation to be used to get DiD was given:

$$Y_{i} = \alpha + \beta Typeofgroup_{i} + \gamma time_{i} + \delta(Typeofgroup * time) + u_{i}$$
(1)

Where Typeofgroup is the treated or non-treated group and t is time. The first one refers to 0 when it regards the non-treated group and 1 when it refers to the treated group. On the other hand, time was equal to 1 when it was analyzed during the blended classes and 0 when classes were out of the blended process.

Furthermore, this research uses a qualitative analysis through an observation sheet and a questionnaire to the teachers to measure the use of both methods in different parts of the class.

Results/Findings and discussion

In this section, all data is explained in detail. The data have the same level to make it easy to compare the analysis and results. The non-treated group could be higher than the treated one because it helps as a great group of comparison. Thus, table 5 has the results of the DiD where all the data was estimated through a software program to find the relationship between the dependent and independent variables.

Variable	DiD	Per-value
Autonomous working score	0.1129434	0.295
C	(0.1076624)	
Group work activities	0.0135178	0.746
-	(0.0416811)	
Class participation	17.33813	0.024*
	(7.651127)	
Unit Quiz	0.5321372	0.016*
	(0.2201331)	
Final Exam	-0.0662158	0.818
	(0.2875165)	
Final Score	0.7143671	0.221
	(0.5830878)	

Table 5. Estimator DiD

Note. The results from statistical data software.

* Significant values at a significance level of less than 5%.

The results agree with the descriptive analysis, where it was shown that class participation increased from the first period to the second. In addition, Table 5 demonstrates that there is a positive value of class participation improvement on average when students face virtual classes vs. blended learning. It is favorable for blended learning because it shows an increase in the treatment group. This outcome is a great feature that blended learning creates more interaction between teacher and students because when learners are in face-to-face classes, they feel comfortable participating with the instructor, in pairs and in group discussions. In the EFL teaching-learning process, it is advantageous to create a good environment where students participate actively because it allows the development of skills such as reading, listening, writing, and speaking. Hence, class participation is not the same in virtual classes due to the environment, and the access to participate at home is not always the best place to do it. It means that students could wish to interact in virtual classes, but their circumstances at the moment do not allow them to open the microphone and give an opinion. In addition, students have many distractors when taking virtual lessons; therefore, these external factors avoid students' participation, while blended learning provides better conditions.

Next, there is another variable with a level of significance less than 5%, which means it is significant at 95%. It is the unit quiz. This value is smaller on average compared with the previous one. The Unit Quiz during the study was used in virtual circumstances in both parts of time. However, in the second bimester, students could record a short video as part of the unit quiz to be considered as a speaking part of the scoring. Students were set on a topic, and they prepared their video in a week. It was just a part of the total grade, but it gives students the opportunity to be independent and work at their own pace in blended learning and using ITCs too. Therefore, it has the desired results of increasing students' interest and performance.

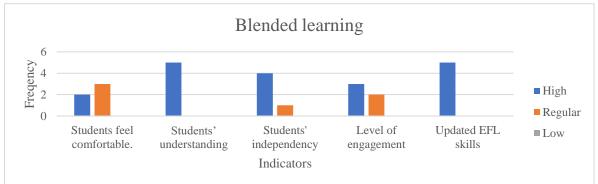
Other independent variables also show a positive effect on the dependent one on average for

blended learning, but they are not significant at 5%. However, the quantitative analysis demonstrates that blended learning increases the different sub-scores.

Also, the observation sheet (Appendix 1) was used to analyze the situation during the blended learning lessons that students and teachers face during the treatment. When students take blended learning lessons, they can bring up questions to face-to-face lessons and development tasks at home, but all of them aim to improve students' development and accuracy. Hence, the highest things in blended learning were the activities that increased students' understanding of the content and showed updated EFL skills and knowledge at a good level. In addition, fluency of EFL skills was another characteristic as much in speaking, writing, reading, and listening tasks. This data corroborates the effect of blended learning which is connected to the quantitative results of students' participation.

Another important indicator is that Blended learning helps students work more independently because they develop the sense of completing tasks in classes, and they need to continue learning in virtual lessons at the same time. As all topics are focused on learning outcomes, they should follow the threat and check themselves every content continuously. Hence, the activities that they develop are easy-going and familiar for them due to they are working the content as a whole unit.

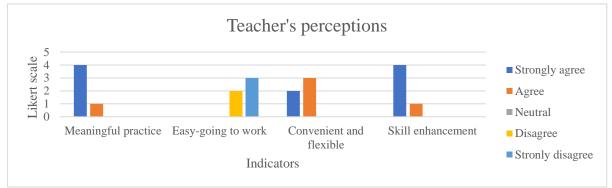
Figure 1. Results of observation checklist.



Note. The figure shows the responses to the survey questions.

Lastly, Figure 1 shows the teacher's perceptions in a short questionnaire about the use of Blended Learning. Most teachers agree that this type of learning is meaningful to the practice of oral and written activities and is efficient and skill-enhancement because the material is available in the classroom and in a virtual environment. The use of the material is directly addressed to the development of activities in classes, teachers' conferences, and students' tasks; the teachers agree with that; however, they disagree that Blended learning is comfortable and easy-going to work due to they find it difficult to start this type of study and the use of material from one class to another, in addition to the management of time with the EFL skills. The content, time, and learning outcomes were established, but the material, procedures, and carry-on activities were difficult to perform at the beginning and the process. However, the opportunity to consider new material and information was able to find new types of ITCs and apps that are useful to implement in classes nowadays.

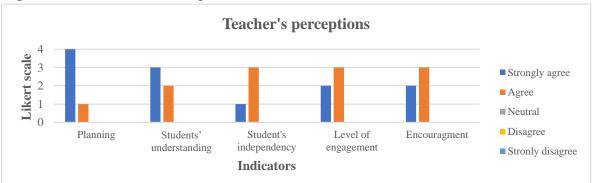
Figure 2. Teacher's perceptions

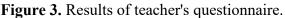


Note. The figure shows the responses to the survey questions.

Lastly, figure 2 demonstrates that most teachers agree that blended learning gets major planning according to students' needs, and the activities during this process increase students' understanding of the content. First, planning requires time and effort to make differentiated material depending on the type of lesson and according to students' needs. For that reason, it takes major participation of the teacher's thinking at the moment of planning. On the other hand, understanding content relates to the time and effort teachers put into the plan. Therefore, all activities and strategies are guided to improve students' comprehension and guide significant learning.

Likewise, most teachers claimed that blended learning allows students to work more independently and increases engagement, and the blended learning models encourage students to learn actively. In the beginning, the use of a proper plan and detailed material help students be more autonomous in the lessons and have self-control in the activities, which contributes to the student's motivation and active participation inside and outside the classroom.





Note. The figure shows the responses to the survey questions.

Regarding these results, the effectiveness of blended learning for superior undergraduate students evidences a quantitative and qualitative impact on the EFL learning process.

Discussion

Students faced two types of lessons in one academic period due to the current conditions of the COVID-19 emergency. The opportunity was real and well applied because all students adapted to working in online lessons and knew how to work on their LMS system. Moreover, it made course administration easier and helped reduce the cost and time of delivering instruction, as Dennis (2013) found in their results.

When students returned to face-to-face classes, it was possible to interact with teachers and confirm that learners in virtual lessons did not learn as well as having instructors' support and partners nearby, which is a feature of blended learning. It is noticeable that working in Blended lessons is challenging, and it increases students' and teachers' experience since the major role is the student's interaction, in which the teacher immediately clarifies their doubts. It means that pedagogy for developing this type of process requires a high level of understanding and management of ITCs (Fleischmann, 2021).

The results of these studies are suitable and helpful for educators because they allow interaction with students and prepare them for Blended learning (Azizan, 2010; Picciano et al., 2013; Mirriahi & Fox, 2015). In online lessons, students go forward at their level of control over the pace, time, and place of their learning (Fleischmann, 2020) and show favorable attitudes as Nguyen (2022) found too. Even though they have these advantages, the outcomes cannot be compared with blended learning.

Moreover, blended learning provides extra advantages over face-to-face classes. For instance, blended learning students can get instant feedback from educators, provide ideas to instructors and peers, and achieve projects to check students' learning progress (Fleischmann, 2020; Bonk & Graham, 2012). Along with this, the quantitative and qualitative analysis confirms that the use of blended learning improves students' participation and understanding; and it is an efficient skill enhancement (Anthony et al., 2019; Tayebinik & Puteh (2013). In addition, according to Anthony et al. (2019), it is the best opportunity to provide students with a major role in the classroom, to enhance and motivate them to continue learning.

Likewise, blended learning leads to good interaction between teachers and students, supporting students' independence and allowing them to be creative and self-confident. Adas and Bakir (2013) demonstrate their own criteria. Another important feature is the flexibility that it allows students (Senffner & Kepler, 2015), even teachers have the biggest responsibility of accomplishing detailed planning plus online material, and in the classroom, blended learning has the advantage of instant feedback that learners could get in their learning process (Buran & Evseeva, 2015).

However, the learning process in superior undergraduate institutions must be guided by the administrators of institutions and supported by institutional vision and mission, as remarked by Garrison and Vaughan (2008).

Conclusion

Using blended learning in superior institutions for undergraduate students should be an option to engage students in EFL classes and let them learn by themselves. It is a challenge because the implementation would be hard at the beginning, but the use of face-to-face classes can be traditional as it had always been. Therefore, providing some degree of autonomy to students would give a different view of EFL learning.

Blended learning provides a good space to involve technological tools and face-to-face activities by focusing attention on what skills are required to practice in classes with the help of teachers and peers. It gives learners get easy access to study and develop their own activities. Furthermore, students from different places can carry-on classes easily, and the need to move to the institution would be reduced in an EFL blended class. However, it aims for stakeholders and policymakers to study these implementations and improve faculty development and support structures (Moskal, Dziuban & Hartman, 2013). In Ecuador, there needs to be more proper support and planning for implementing innovative blended learning to achieve a positive transformation. Thus, there is a chance for further research to work on it.

Future research can be applied to specific types of English classes in academic content, such as academic writing and programs for exam preparation. In addition, this research helps improve the assessment process with students using personal goals. Besides, it is advisable to train teachers to work in these types of learning processes because it aims to create independence and autonomy in learners.

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