Developing Autonomy Through Student-Centered English Language Learning Process for Engineering Students. [1]

Desarrollo de la autonomía a través del proceso de aprendizaje del idioma inglés centrado en el estudiante para estudiantes de ingeniería.

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Abstract

This article focuses on how the incorporation of autonomy into university students' learning process improves their English language performance. The participants of this study were 25 students of engineering programs in a public university. Data collection was done through observation, a survey, and a group interview. Two categories that emerged after the data analysis supported the main finding that technology-based activities can be conceived as a starting point for the incorporation of autonomous learning in the English language education at the university.

Key words: autonomous learning, language education, technology-based activities

Resumen

Este artículo está enfocado en como la incorporación de la autonomía en el proceso de aprendizaje de estudiantes universitarios mejoran su desempeño en el idioma inglés. Los participantes de este estudio fueron 25 estudiantes de los programas de ingeniería. Los procedimientos de recolección de datos fueron hechos a través de observación de clase, encuestas, y una entrevista grupal. Dos categorías que surgieron después del análisis de datos que sustentan los

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resultados; las actividades basadas en tecnología pueden ser concebidas como el punto inicial de la incorporación del aprendizaje autónomo en la enseñanza de inglés en la educación superior.

Palabras clave: aprendizaje autónomo, educación de idiomas actividades basadas en tecnología.

Resumo

Este artigo está focado em como a incorporação da autonomia no processo de aprendizagem de estudantes universitários melhoram o seu desempenho no idioma inglês. Os participantes deste estudo foram 25 estudantes dos programas de engenharia. Os procedimentos de coleta de dados foram realizados através de observação de aula, enquetes, e uma entrevista grupal. Duas categorias que surgiram depois da análise de dados que sustentam os resultados; atividades baseadas em tecnologia podem ser concebidas como o ponto inicial da incorporação da aprendizagem autônoma no ensino de inglês na educação superior.

Palavras chave: aprendizagem autónoma, educação de idiomas atividades baseadas em tecnologia

Introduction

Being able to learn independently has become imperative two or three decades ago because of the technological revolution with the desire of fostering autonomy, but it is not the only cause for it. Educators and trainers who are willing to explore autonomous learning courses often have questions about the skills needed to be an effective self-regulated learner because students today are more dynamic and spend many hours online or using social networks. A blended learning approach combines face to face classroom methods with computer-mediated activities to form an integrated instructional approach. According to Yigit, Koyun, Yuksel, and Cankaya (2014, p.808) "The term 'blended' has a broad meaning and it includes the integration of e-learning and traditional learning. The blend of these learning models depends on the online materials, the needs of the students, and the instructor requirements". There are established skills that students need to be familiarized with to be part of the student-centered learning approach, and one of the most important is setting their own learning goals. Unfortunately, many people have not learned how to decide what is important for their lives or their learning process, even how to select from different learning possibilities.

According to Long (as cited in Eslaminejad & Nakhaee, 2012, p. 41) "These individuals have become accustomed to having questions and problems identified for them and not developing the cognitive ability to engage themselves in problem identification and problem-solving. As a result, they may also have limited observational skills that inhibit their ability to determine what is important in their learning environment". This has been the case of Engineering students at a public university who do not see much importance of determining what is beneficial for them in their current living situation as students. Moreover, there are some cases when students are about to graduate and start their English courses because it is a requirement for job interviews.Therefore, some changes are required to develop these skills before a person becomes a successful autonomous learner; when we are working with students with little experience in autonomous learning, careful attention should be given to help them to select possible outcomes of their learning, and then encourage them to know what to choose from multiple attractive goals and why.

A successful self-regulated learner has an active role in their learning performance. "Self-regulated learners take on challenging tasks, practice their learning, develop a deep understanding of the learning material, and exert extra effort, which leads to academic

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success" (Perry, Phillips, & Hutchinson, 2006 as cited in Kan'an & Osman 2015, p. 791). Therefore, engineering students should develop the ability to identify their weaknesses and strengths as learners, to know if they can call up additional strategies of concentration, to know their ability to use a different approach, to know what is important in their learning environment, to know the importance of a given learning activity, to know when they need assistance, to have a realistic perception of their ability to achieve their learning goal and finally to show them they can easily become autonomous learners.

Justification

Teaching students to be responsible not only for their lives but also for their academic performance is an imperative task. In the case of language teachers, they encounter students in their classes with several personality differences, learning strategies and cultural domains which interfere with the learning process; therefore, educational programs must be reoriented or redesigned.

"in the classroom, there is practical implementation of an SCL approach that includes a number of following components: problem-based learning, group project work, student-centered active learning, resource-based learning, use of the case method, role plays, classroom workshops, group presentations, use of a web-conferencing environment, particularly in distance education, small group work that enables students to learn how to work in a team, in the process of which they identify and fill the gaps in their knowledge. They also stress the importance of involving students after the task is completed, making self-assessment comments, making peer-assessment feedback comments, suggesting self-assessment grades and negotiating self-assessment grades" (Marinko, Baužienė, Daniels, Gołębiowski, Hughes, & Rees, 2016 p.17).

It means, in higher education, especially English courses, which are not mandatory in the university, need some changes to involve students in a more interesting educational method to support their real needs based on their interests.

Engineering students in the context of this study are people who need orientation in self-motivation, self-regulation, and time management in their process of learning English. They are very motivated to the career they are studying but when they talk about the process of learning English the attitudes are totally different. It

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was evidenced during the project observation stage in which 74 % of the students did not know what they were good or bad at in terms of English, they did not know the kind of activities that facilitated their learning, and they were constantly complaining about their lack of time to focus on their English learning process.

A diagnostic survey was implemented to find out students' attitudes and perceptions about the English courses in the university and 74 % of students affirmed that they see 6 subjects per semester, which affects their grade average and they do not dedicate time for learning English because it does not affect their grade average.

On the other hand, 43% of students admitted English courses need reorientation in terms of including content related to their majors. Therefore, as it was mentioned before, one of the alternatives for the students to take part in making good decisions that shape their learning is their inclusion in a set of self-regulated technology-based learning activities that strengthen their skills and affirm their attitudes to the adaptation to the English courses. "Students need a sense that the education they are receiving and the activities they are completing will enable them to pursue the career they want or make other personal goals" (Herman, 2012, p. 372.).

The aim of the present study was to examine the role those student-centered learning activities might play in facilitating the English learning process to the busy Engineering students. Its purpose was to conduct students through a process to become more independent learners and aware of their own learning process in the course of improving their writing skills, so they could produce their own articles related to any research they are involved in. They were enrolled in the student-centered learning environment in which instructional materials were transferred electronically or through the Internet with the help of technology-based activities, social networks, Web 2.0 tools, and computer-related tools.

These conditions encouraged Engineering students to engage in their own knowledge construction by integrating new information into their English courses, and by associating and representing it in a meaningful way.

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Literature Review

Student-centered learning

Student-centered learning refers to the variety of activities that are oriented towards the student learning process to meet students' needs and interests. "The concept of student-centered learning is to bring the classroom and students to life. The teacher is considered a "guide on the side, assisting and guiding students to meet the goals that have been made by the students and the teacher" (Overby, 2011, p.109)

When student-centered activities are implemented, two behaviors are evidenced: the first autonomous behavior is when learners can select from a variety of activities that call up their attention and they present the results as they decide to. It shows that when they take responsibility for their own learning process the results are impressive. Eslaminejad & Nakhaee (2012, p.40), affirmed that a "self-directed learner is responsible for development of her/his learning skills and deciding when and how she/he going to learn. The benefits of self-directed learning include having a greater control over learning and an increase in self-concept, motivation, and sense of self-control"

The second behavior is centered on the students' desire for taking responsibility for their learning. Becoming autonomous learners is a continuous process and it involves different factors. First, the possibility to work collaboratively (Reeves, Herrington & Oliver, 2004, p. 53) believe that by being able to collaboratively solve authentic tasks online "the learning outcomes accomplished by these learners will be of the highest order, including improved problem-solving abilities, enhanced communication skills, continuing intellectual curiosity, and robust mental models of complex processes inherent to the performance contexts in which their new learning will be applied"; second, to reinforce other learning skills, Kim and Davies (2014, p.7) affirmed "The ultimate goals of student-centered learning are more closely related to the facilitation of higher-order thinking skills (i.e. comprehension, application, analysis, synthesis, and evaluation of knowledge) rather than knowledge and recall of facts". And finally, a self-evaluation process, "Course objectives and learning goals will be clearly stated, and students will be taught to assess their own work and that of their peers by asking critical questions in a constructive manner" (Wright, 2011, p.95).

Consequently, the term student-centered involves many factors that help a young learner to take direction into their own learning performance. In the case of Engineering students in the university, the course was designed and presented to promote autonomous decisions

based on their needs, and interests, and to encourage them to create a positive learning environment.

Learners' autonomy

Benson (2001, p.2) stated "the concept of autonomy is grounded in a natural tendency for learners to take control over their learning". It does not mean isolated work; instead, students control their decisions and work without any pressure. For the purposes of this project, autonomy was a crucial factor because students are teacher-dependent, and in many cases, students are not interested in the topic or the activities proposed. Engineering students in the context of this study need to foster their autonomy because they do not have much classroom contact time for English classes. Autonomy involves students in a range of activities that are an essential role in becoming professionals.

Rao (2016, p.5) established "Autonomous learning, based on the theoretical foundations of both humanism and constructivism, takes the effect on learners into account and encourages students to take responsibility for their own learning". Therefore, autonomy must be conceived as the routinized process (it is daily and continuous) in which learning is the result of the integration of self-sufficiency into their learning process. It means, if students participate in autonomous learning activities daily, the results will show independent, self-evaluator and responsible learners.

There are many benefits of the incorporation of autonomy into a learning process such as learning from the environment, learning from the experiences, and making mistakes. In the process of learning a language, autonomy reveals the ability to take responsibility of their own learning process, it means, to use strategies, methods or tools to foster their language proficiency. Fotiadou, Angelaki and Mavroidis (2017, p.97) mentioned "It is essential that the students have acquired studying strategies and habits that will enable them to define the learning steps and master their own learning". Therefore, teachers should encourage learners to build that knowledge and skills to fulfill the requirements of the autonomous learning process.

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Technology in language education

When learning a language, it is frequent to find different teaching styles; for that reason, it is important to have tools for teaching that impact all students learning process. Technology appears to be one of the latest tools to increase students' motivation through autonomous

learning processes because nowadays learners are more active and dynamic than before because of the use of technology. Costley (2014, p.2) stated, "Due to the large use of technology in the world in which we live, the use of technology in teaching and learning is essential if we are to make a lasting impact on how students learn". Thanks to the incorporation of technology and by changing students' learning attitudes and enhancing their self-confidence, students' performances are improved. The incorporation of technology has many benefits in the process of English language learning because learners become aware of what they are learning and can self-monitor their performance. New technology enables students to collect information and interact with resources, such as images and videos. Teachers can promote students' participation and their engagement in the class. In this study, blogs were the main technological tool used. It allowed learners to build their knowledge by past English language learning experiences that have influenced their English performance and for developing new ideas, for example: making decisions, fostering collaborative work and using the language in different situation and contexts. In addition, the use of blogs in language learning contributes to gaining cultural knowledge, provides opportunities to explore the target culture, and increases cultural awareness (Hauck, 2007).

Blogs

For the present study, I decided to use blogs to motivate students towards autonomous behaviors. The reason for choosing this tool is because students are willing to use technology on a daily basis and I want them to use it to foster their future professional development path. According to Tíscar (2015), "blogs are free virtual spaces thanks to which anyone can have access to them without having to pay anything" (p. 9). Vurdien (2013) argued that blogs and blogging are extensively explored by the researchers because they can be used for various pedagogical purposes, encourage learners to express their ideas, help teachers to ask their learners questions, and provide the opportunity for collaboration.

There are different advantages of using blogs not only because it is a technological tool but also because it shapes autonomous behaviors. Among the benefits, I can say that students are exposed to authentic reading and writing material and, using blogs increases the sense of working collaboratively. Blackstone, Spiri, and Naganuma (2007) argued "Within the scope of classroom-based blog activities, assignments can require the student blogger to communicate closely

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with a particular group of student bloggers. Moreover, the exchange can be almost instantaneous (during class time) or at the leisure of the student bloggers" (p. 2). By the incorporation of spontaneous and planned activities, blogging becomes an engaging communicative activity which fosters the use of English language in the classroom.

Research Design

Type of research

This research is a qualitative case study research which, according to Yin (as cited in Kohlbacher 2005, p.4), "[it] allows investigators to keep the holistic and meaningful characteristics of real-life events". The need for this project arose from the aim to understand how autonomy would help Engineering students to foster their English language competences. For the purpose of this case study, three instruments were considered to analyze data, observation, interviews, and surveys. Once I had collected the information, I analyzed it and triangulated it to find common topics.

Data Collection Procedures

To develop this research and collect the data, three instruments were used; class observations, a survey for students, and a group interview. These instruments were valuable because I could collect information about students' perceptions, attitudes, and opinions towards the use of technology-based activities especially blogs and the way they see the concept of autonomy after being involved in that kind of learning process.

Class observation: According to Turnock and Gibson (2001), "Observation is a way of gathering data by watching behavior, events, or noting physical characteristics in their natural setting" (p.43). It was the first step to find out students' perceptions and needs about the English learning process at the university. It was a crucial factor because the idea to design an autonomous course was born from these observations. (See Appendix 1)

Survey: Fowler (2013, p.1) established that "the purpose of a survey is to produce statistics, that is, quantitative or numerical descriptors about some aspects of the study population". This instrument was designed to collect information, especially the interest in learning English and the perception of the autonomous course by Engineering students. (See Appendix 2)

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Group interview: Kelly (2003, p.50) stated that "group interviews are designed to elicit perceptions, information, attitudes and ideas from a group in which each participant possesses experiences with the phenomenon under study". It was implemented during and at the end of the course to find out students' attitudes and perceptions of the incorporation of autonomy in the English language teaching process (See Appendix 3)

Participant

The participants come from a public university which offers a variety of programs for the community. Sogamoso branch is characterized by the high quality of the Engineering majors. It means most of the students are students of Systems, Industrial, Electronic, Mining, and Geological Engineering. Engineering students and engineers have expressed long-term dissatisfaction with their English ability (Wattanasakunpusakon, 1996; Kittidhaworn, 2001). Besides, language teachers play an important role in teaching English to future engineers because of the challenges of the Engineering faculties in general; Ramírez, Borja and López (2018, p. 149) stated "This new teacher, in the Engineering context, must have the ability to investigate the reality, intervene in it, by proposing innovations and changes in the institutions that offer this kind of programs". With that in mind, the need for modifying the English courses in the university is determined by students' interests and expectations. The last two semesters students have asked the language institute which is in charge of the English course within the university, to offer other kind of syllabus and methodology that fulfills their needs as future engineers. It seems that courses offered to these students have serious problems considering their specific needs.

The participants of the project have said they need more technical vocabulary to be able to keep a conversation or do a job interview and most of them have said they must be able to write articles about research they always do as a daily process in their subject' matters. According to Shrestha, Pahari, and Awasthi (2016):

> "In the field of Engineering education also, the English language is being used as a common means of communication all over the world whether it is for acquiring knowledge from books or publishing their research reports, or for giving oral presentations or for presenting papers at the seminars and conferences" (p.182)

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In this sense, the ability to communicate in formal and informal contexts is essential for the education of engineers. I consider that the incorporation of dynamic English activities plays an imperative role in the professional development of future engineers. However, one of the weaknesses was the lack of motivation when this project was implemented.

Another important issue is time; these students spend much time doing lab work and internships, and they are enrolled in projects which need many hours of effort. For that reason, they do not attend English courses regularly, their reason is that an English course does not affect their average grade, it is just a requirement and they need time to focus just on their core subjects. It has been a great concern in the university because students are unmotivated, they do not see English as a subject as important as the others.

For that reason, I chose a group of 25 Engineering students who accepted to enroll in an autonomous and blended English learning process. A blended approach instead of a traditional face to face course means that the class meets once per week instead of the usual three-session format. Learning activities in class can be used to encourage students to ask questions, clear up doubts and reinforce the communication with the rest of the class. Blended learning also allows education 24/7; it reaches a bigger number of learners; and it ensures a learning environment which is independent of time and places (Dziuban, Hartman, & Moskal, 2004). Based on that, the best way of meeting the challenges of tailoring learning and development to the needs of Engineering students was by integrating the innovative and technological advances offered by online learning with the interaction and participation presented in the best of traditional learning that served to fulfil their needs. Maguire (2005) stated that "In order to meet the requests of the various types of students who prefer to attend courses via distance learning, either for convenience, preference of learning style, etc., higher education administrators must find ways to motivate and support faculty in their development and teaching of online courses and programs" (p.6).

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Pedagogical Intervention

A variety of technology-based-activities were designed with the purpose of involving students in a process in which they must be responsible for their learning process taking into account instructions for the outcomes they are expected to do, especially, blogs.

Writing lab reports was the central skill. White and Arndt (as cited in Alves, 2008, p. 5) viewed:

> "writing as a form of problem-solving which involves such processes as generating ideas, discovering a 'voice' with which to write, planning, goal-setting, monitoring and evaluating what is going to be written as well as what has been written and searching for language with which to express exact meaning".

They suggest that producing a text involves six recursive ways. As it is a process, each stage was divided into three mandatory activities to become autonomous learners and succeed in writing scientific articles as a requirement of their majors. Engineering students must write a lab report considering the demands of scientific texts: Introduction, methods (hypothesis), and results.

During the implementation of the activities certain autonomous behaviors were taken into consideration. The behaviors were: Cooperating with partners, self-assessing their process of learning, defining clear goals and organizing learning processes. Doing a lab experiment involves the autonomous behaviors mentioned; learners must define their goals or objectives, students must work in cooperation with their partners, and finally, they have to evaluate their performance during the activity.

Syllabus design

The autonomous English course was designed based on the student-centered learning foundations and it was divided in three main stages to be implemented during the academic semester which has 16 working weeks. Table 1 shows a summary of the activities implemented.

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Table 1. Summary of activities implemented

Week	Activity
1	Assign task one
	Teaching how to create a blog
2	Peer check-list on task one
	To chat about doubts on the task
3	Talk about task one
	Group interview
4	Assign task two
	Doing lab experiments based on their majors and interest
5	Create a blog
6	Peer check-list
	Group discussion about task two
7	Assign task three
	Collaborative work to improve blogs
8	Group check-list
	Group discussion on task three
9	Oral presentation of lab experiments on the blog
10	Written lab report check list
	Visiting all the blogs of the group
11	Group interview
12	Self-assessment
13	Grouped assessment
14	Final feedback
15	Final group discussion

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Data Analysis and Results

As I mentioned before, the data of the three instruments were validated by doing content analysis. According to Babbie (2001, p.304), "content analysis can be defined as the study of recorded human communications". That analysis allowed me to determine similarities and differences in the information gathered and it finally revealed common codes that were transformed into two main categories. The first related to feelings, and attitudes toward English language learning through a self-directed model and the second related to the incorporation of technology, collaborative work and becoming an autonomous learner. The preliminary findings obtained during the process of analysis were classified as shown in *Figure 1*:
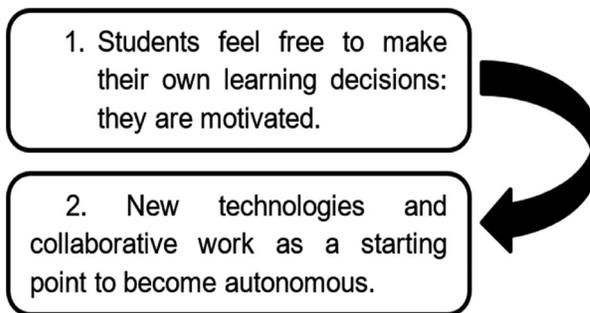
Figure 1. Categories that emerged after data analysis

Students feel free to make their own learning decisions: they are motivated.

While the project was implemented, students showed a positive attitude towards the incorporation of technology in their English learning process; during the interview one of the students said, "working online helped me because I did the activities when I was free and I wanted to practice English at home" (extracted from interview); it means they showed a significant responsibility towards their own learning process. Encouraging learners to make their own learning decisions also helps them to maximize their control of making good decisions. Pingxiao (2017, p. 357) said "Positive classroom environment can stimulate and maintain students' interest in learning, promote students' autonomous learning. The creation of classroom environment here is not only a physical environment suitable for students to study, but also a learning atmosphere suitable for students' autonomous learning".

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Some of the students said during the group interview:

• "I liked that kind of activities because I see the need of writing lab reports in the subjects of my career, if I see I need to write in English for my career, I will enjoy and take advantages of the English courses". (translated by the author)

Promoting learner autonomy is a vital factor of motivation because students do not have a language teacher available all the time; a language learner to be proficient in a foreign language needs someone who assists them at any time; for that reason, the incorporation of technology-based activities promoted opportunities for them to practice and self-evaluate.

In the group interview, student "D" argued:

• "The job interview helped me a lot because I could check my pronunciation mistakes and record the interview again; I will never forget that pronunciation".

Students who were never enrolled in this kind of English learning activities required a special support, in this sense; autonomy was reflected as a continuous adapting process. At the beginning, students did not know what to do or what activities really met their language needs. At this point, it is imperative to mention those language teachers need patience to transfer responsibility to the learners gradually.

The importance of learners' understanding the purpose of classroom activities is crucial when developing autonomy because they show their motivation to learn. They start seeing the importance of communication in another language for their future professional development. In terms of self-directed learning, Kan'an and Osman (2015, p.795) stated "rewarding for the students to be academically successful in not only science subjects, but also other subjects as well as be successful in the business of life". Another important issue is the need to practice in their own time not to complete any assignment but to reinforce the abilities acquired. It means that the incorporation of active learning activities must be conceived as a continuously engaging process.

Learning the language autonomously showed that students feel greater confidence when reporting their activities because they have given importance to their attitudes and capabilities for learning a language. These students have made an important step to their language development process, according to Froyd and Simpson (2008, p.3) "positive influences of student-centered learning approaches to teaching on academic performance, attitudes toward learning, and persistence in programs".

From that perspective one student said during the interview that "I realized that I liked watching videos related to the topic more than reading, and the results are better".

New technologies and collaborative work as a starting point to become autonomous.

As I mentioned before, when the project was implemented; the autonomous learning behaviors considered were: first, learners chose from different set of activities based on their interests, it means that the activities let students choose the kind of activities of their preference. Second, students cooperate with their partners; the incorporation of technology-based activities gave students the opportunity to work with other students and evaluate their performance. Third, learners self-assess their process of learning; each student had the opportunity to evaluate their own results from a neutral perspective. Finally, students define clear goals, this behavior was shown at the final stage of the project because students set their objective and the activities they were going to present; this step was the final proposal designed by the students to improve their language level.

During the implementation of the project, students showed a good attitude toward the fact of changing the way language teachers at this university usually teach. Most of the students argued in the survey that autonomous activities improved their learning outcomes because they were free to do the activities they were interested in. The integration of technology in language education in the context of the study was quite challenging because it was time-consuming and kind of frustrating at the beginning. However, this kind of active environment encouraged students to learn when they were willing to, instead of going to a traditional class and sit for two or more hours just working on the mandatory English book.

The most important finding in this category is that students started to feel more confident about them; they could work collaboratively and develop a higher level of thinking skills. During the last class observation, a student said "it was clear that at the beginning the process is not as easy (as regular face-to-face classes) as I thought but the good thing was that I was excited because I love working on my computer, and during the process I found out I was good at creating conceptual maps and I enjoyed a lot watching the videos of my classmates on the web". student's comments allowed me to state that the incorporation of technology in a blended English course facilitated the learning of the English language in terms of a proper teaching context based

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on students' interests; the participation and interaction among the participants were also active and clear in the blogs.

Based on the experience of implementing this project, it can be said that students start being motivated to learn and use English in their daily activities. However, becoming a self-directed learner in the contexts of this public university requires time, effort, and support of administrators so students start being conscious of the need to speak another language.

Limitations of the study

In general terms, when I implemented the project based on the main constructs of autonomy, student-centered learning and technology-assisted strategies:

First, it became a limitation to control the effect and efficiency of technology because I could not know if students received any extra help or if they did all the activities on their own. To monitor and control students work at home, there should be more financial resources which are too difficult to obtain.

Second, when working online there is always a limitation because all the work depends on the type of connection students have. Some students in this public university do not have the best economic conditions which means, they do not have access to Internet. That issue was presented when the project was implemented, so some students had to stay in the university to accomplish the activities.

Conclusions

Working with a student-centered approach and the use of technology-based activities to foster autonomy in a blended course could be conceived as one of the many alternatives language teachers should bear in mind, so learners can construct an effective and a positive learning environment. From my personal point of view, I consider students need opportunities to learn English in an easy way. I want to highlight that this easy way means where they become motivated, responsible for their own learning process, and learn in more flexible time. Consequently, it is important to incorporate technology-based activities in Engineering students learning process to expand their possibilities to learn autonomously.

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Overall, autonomy in language depends on the capacity of how critical learners can become and how process of self-reflection and independent work appears. In the case of Engineering students in the context of this study, the implementation of activities such as reports, interviews, and the teacher's comments let students understand autonomy as a social ability. They had the opportunity to interact with other students and the teacher to find information regarding the task assigned, to assess their performance, to participate in planning and designing the activities, to focus on learning cooperatively, and to learn how to learn to face future learning challenges.

Results also showed that language programs need to incorporate a different kind of instruction based on what students need, expect, and are good for. The use of technological tools such as blogs was suitable to help learners to take control of their own decisions based on their interests and needs as future engineers because all the activities allowed them to choose from real and authentic situations about their learning process.

The use of a student-centered approach encouraged students to self-regulate their learning process; they showed an improvement in the autonomous behaviors selected (cooperation with their partners, self-assessing their process of learning, defining clear goals, and organizing their learning process). Students had the opportunity to listen to their own videos, and to see how their writing improved. Collaborative work was helpful because students had the opportunity to share ideas, construct new knowledge based on their needs, past experiences, and interests. Self-assessing their learning process was supportive as it helped students to develop skills to become objective critics.

The findings of this project have implications on the role of the teachers and the implementation of different technology-based activities in their teaching practice. First, administrators should provide necessary support and facilitate the integration of technology; second, teachers should improve cooperative skills; and third, language should train in implementing technology-supported projects. It is also important to keep on researching about the building of blended courses for higher education.

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Appendix 1.

Class observation checklist

Class observation criteria			
Autonomous behavior	**Always**	**Sometimes**	**Never**
Students look for materials or strategies to learn in a better way			
Students use internet to develop the tasks			
Students use internet to learn about their interests			
Students prefer to do the task by using internet that using text books			
Students showed a better attitude when choosing the topics of the tasks			
Students help their classmates when they do not understand			
Students develop their activities in a better way when their classmates help them			
Students give suggestions to their classmates to improve their tasks			
Students showed a good attitude when working with partners			
Students liked to received suggestions			

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Appendix 2.

Survey on Students´ attitudes and perceptions towards the English language courses

Questions	I agree	I somewhat agree	I don't agree
Do you like the new English language course?			
Do you enjoy working online?			
Do you prefer text books?			
Do you prefer working on activities of your selection or guided activities?			
Do you like helping to your classmates?			
Do you like receiving suggestions?			
When you finish an activity, you check it			
When I receive feedback, I correct the mistakes			
After I finish an activity, I think how it can be improved			
When I start a task, I know the goal			
When I finish an activity, I self-assess			
If I do not accomplish my goals, I do other activities to improve			
I follow a schedule to develop the activities			
I manage my time			
I set my goals before looking for some information online			

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Appendix 3.

Group interview questions

Do you like the new English language course? Why?

Do you prefer sitting in a traditional language class or being enrolled in a blended course? Why?

What are the advantages and disadvantages of this blended course?

Did you like working with colleagues? Why?

What criteria did you use to choose from the variety of activities?

How did you set your own goals? Explain

What criteria did you use to do the self-evaluation?

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