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Scientific Articles

Propuesta didáctica-pedagógica para fomentar la autonomía del aprendizaje en los centros de autoacceso de idiomas en modalidad virtual

Didactic-pedagogical proposal to foster learning autonomy in self-access language centers in virtual mode

Proposta didático-pedagógica para promoção da autonomia de aprendizagem em centros de autoacesso de línguas na modalidade virtual

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Resumen

El objetivo de esta investigación fue determinar el impacto que tiene la implementación de una propuesta didáctica en el aumento del grado de autonomía y el uso de estrategias que contribuyen al aprendizaje del idioma inglés en el Centro de Autoacceso (CAA) en modalidad virtual en la Universidad Autónoma de Querétaro, México. El diseño metodológico fue cuantitativo, descriptivo y correlacional. Para alcanzar el objetivo de la investigación, se diseñó y administró un cuestionario antes y después de la implementación de la propuesta. Este instrumento fue validado por juicio de expertos, y se recurrió a la relevancia entre ítem-constructo a través de la V de Aiken.

Los resultados obtenidos muestran cambios significativos en la percepción de la autonomía, ya que la propuesta incorpora elementos que buscan desarrollar esta habilidad. Antes de su implementación, se abordaba el aprendizaje a nivel de contenidos lingüísticos. Este cambio de percepción se atribuye al diseño de actividades para fomentar el aprendizaje autónomo dentro de la propuesta. Entre los cuatro grupos de estudio, se observó una diferencia en los niveles de autonomía entre el pretest y postest, siendo los estudiantes de semestres avanzados los que presentaron una mayor variación. Esto se atribuye a una mayor familiarización de los alumnos de grados superiores con el uso de actividades de autoaprendizaje en el CAA. Se concluye que

la autonomía en el CAA se incrementa cuando una propuesta didáctica-pedagógica contiene estrategias y actividades que contribuyen a su desarrollo.

Palabras clave: aprendizaje autónomo, aprendizaje de idiomas, centros de autoacceso, diseño instruccional.

Abstract

The objective of this research was to determine the impact of the implementation of a didactic proposal to increase the level of autonomy and the use of strategies that contribute to English language learning at the Self Access Center (SAC) in virtual mode at the Autonomous University of Querétaro, Mexico. The methodological design was quantitative, descriptive and correlational. To achieve the research objective, a questionnaire was designed and administered before and after the implementation of the proposal. This instrument was validated by the judgement of experts, and the item-construct relevance was used through Aiken's V. The results showed significant changes in the perception of the respondents.

The results obtained show significant changes in the perception of autonomy, since the proposal incorporates elements that aim to develop this skill. Before its implementation, learning was focused on linguistic content. This change in perception is attributed to the design of activities to foster autonomous learning within the proposal. Among the four study groups, a difference in autonomy levels was observed between pretest and posttest, with students in advanced semesters showing the greatest variation. This is attributed to a greater familiarity of students in higher grades with the use of self-learning activities at the SAC. It is concluded that autonomy at the SAC is increased when a didactic-pedagogical proposal contains strategies and activities that contribute to its development.

Key words: autonomous learning, instructional design, language learning, self-access centers.

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Resumo

O objetivo desta pesquisa foi determinar o impacto que a implementação de uma proposta didática tem no aumento do grau de autonomia e na utilização de estratégias que contribuam para a aprendizagem da língua inglesa no Centro de Autoacesso (CAA) na modalidade virtual. na Universidade Autônoma de Querétaro, México. O desenho metodológico foi quantitativo, descritivo e correlacional. Para atingir o objetivo da pesquisa, um questionário foi elaborado e aplicado antes e depois da implementação da proposta. Este instrumento foi validado por julgamento de especialistas, e a relevância entre item-constructo foi utilizada através do V de Aiken.

Os resultados obtidos mostram mudanças significativas na percepção de autonomia, uma vez que a proposta incorpora elementos que buscam desenvolver essa habilidade. Antes da sua implementação, a aprendizagem era abordada ao nível do conteúdo linguístico. Esta mudança de percepção é atribuída ao desenho de atividades para promover a aprendizagem autônoma dentro da proposta. Entre os quatro grupos de estudo, foi observada diferença nos níveis de autonomia entre o pré-teste e o pós-teste, sendo os alunos dos semestres avançados os que apresentaram maior variação. Isto é atribuído à maior familiarização dos alunos do ensino superior com o uso de atividades de auto-estudo em CSA. Conclui-se que a autonomia na CAA aumenta quando uma proposta didático-pedagógica contém estratégias e atividades que contribuem para o seu desenvolvimento.

Palavras-chave: aprendizagem autônoma, aprendizagem de línguas, centros de autoacesso, design instrucional.

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Introduction

The teaching and learning of foreign languages in Mexican universities has experienced various scenarios that facilitate this process. On the one hand, teachers seek strategies that foster an optimal environment in which the learning process takes place. On the other hand, the university student must meet institutional requirements or international standards that show the level of linguistic competence they possess after completing an educational program. Each university establishes the level in accordance with the standards of the Common European Framework of Reference for Languages, whether to cover curriculum credits, degree requirements or as a filter for postgraduate studies.

Educational policy in Mexico establishes that it is necessary to prove the “mastery” of one or more additional languages other than Spanish, with English being the first option, where the central objective of graduates is to train professionals who can compete internationally in

the workplace, both academic and scientific (Rubio, 2006). Within this context, in the 1990s, measures were taken to develop the teaching and learning of foreign languages in the country's public universities. One of the decisions taken by the Ministry of Public Education and the British Council was the creation of the self-access centers (SAC) in 32 Mexican public universities through the training of language teachers (Castillo and Domínguez, 2019).

With the passage of time, SACs have acquired different directions and modalities, adapting to the changes that have arisen over several decades since their creation. However, there are cases in which these initial centers have had to disappear due to administrative policies, particular interests, budget or poor dissemination. Despite this, many SACs in public universities have adapted their facilities and services to meet the requirements of new students.

In this sense, the SAC initially incorporated computer equipment with multimedia programs, and gradually the insertion of activities carried out with digital resources that made language learning fun and dynamic in these spaces. For several years, the services offered were mostly face-to-face, and those centers that began to incorporate the use of technology for remote learning integrated the concept of tandem learning, “a method that creates contexts of interaction between people learning foreign languages.” (Bueno and Alvarado, 2022, p. 114) which allowed language students, through videoconferencing, to carry out a linguistic and cultural exchange in both directions, between the learner and the native speaker of the language of study.

Despite the efforts to incorporate digital resources in the SAC, both students and language advisors opted for completely face-to-face activities, since not all centers had the financial resources to incorporate the success stories proposed by tandem learning. There is no current record on what percentage of SACs in Mexico incorporate the use of technology. In this regard, there is a descriptive directory of Mexican SACs that indicates that only 30% of the SACs in this report included the use of technology for the production of virtual learning activities or environments (UNAM, 1999).

It was unimaginable that the paradigm shift to the virtual modality in educational institutions, and therefore within the SAC, could occur suddenly. However, the COVID-19 pandemic forced education to rethink new strategies and methodologies that trigger learning. According to UNESCO reports, 87% of the student population at different educational levels was affected by the definitive closure of educational centers around the world (IESALC-UNESCO, 2020). On the other hand, Brown and Salmi (2020) report on the panorama that was experienced within universities worldwide, where there was no consensus to decide how teaching could continue remotely, and evident deficiencies in infrastructure and teacher training come to light. This caused improvised measures to be taken or attempts to replicate a

face-to-face environment to a completely remote one, a case not very distant from the reality in Mexico.

In this sense, when educational institutions were closed, the administrative authorities of the institutions that had a SAC established a work network in Mexico, where virtual meetings were organized to find out what strategies had been implemented in order to continue offering the service to students. Some of these meetings arose at conferences on language teaching and learning, or specifically on the topic of SAC.

Despite the efforts made, there was a lack of a structure that, on the one hand, would solve the problem of including SAC students in virtual mode, and on the other hand, the central concept of autonomous learning should now be addressed from the concept of virtuality; that is, autonomy in learning had to continue to be promoted.

Whether in face-to-face or virtual spaces, one of the main precepts of the SAC is to "enhance the autonomy of learning and autonomous language learning" (Lázaro, 2011, p. 27); That is, the student is capable of developing skills that allow him to achieve autonomy in learning through his own knowledge of strategies that contribute to his discovery and development, to finally use them in learning a language.

Now, citing Dickinson (1987), the term self-access is defined as the way in which the materials and equipment available to the learner are brought together; That is, the free access that the student has to select the type of resources that contribute to their learning objectives. For his part, Sturtridge (1992) specifies it based on the way in which the materials are available to the learners to freely select those that satisfy their needs, in addition to the fact that they were created to be used with limited support from the teacher; or rather, autonomously.

Other references such as Gardner and Miller (1999) establish that a SAC is made up of the combination of materials and human and technological resources that provide a learning environment in which one interacts individually or collectively to achieve learning objectives. According to Sheerin (1990), ~~when he points out that~~ one of the objectives of the SAC is to provide the appropriate environment where self-learning and self-correction take place; that is, students are able to direct their own learning.

Therefore, it is pertinent to mention that the result of the pandemic brought with it the acceleration towards the virtuality of the SAC in the country, where new strategies are necessary through the use of technology incorporating teaching materials, based on an analysis of needs to structure a didactic proposal, which provides teaching tools that truly contribute to this self-directed process (Arrieta and Borloz, 2010).

It should be noted that in 2018, an approach to the virtuality of SAC began at the Autonomous University of Querétaro (UAQ), beginning with grammar activities sent to

students via email and that digital resources and free access platforms were gradually incorporated to facilitate language self-learning in this modality. However, there was no proposal on what type of activities could contribute to student-centered learning, a skill established in the University Educational Model (UEM) where learning must be focused on the needs of the student based on the creation of a pedagogical environment and with educational innovation. In terms of innovation, the UEM mentions that learning must be available to those who need it and that what is taught and learned is different through the use of technology (UAQ, 2017).

Following these concepts and scenarios described above, the UAQ's SAC must align with the new current requirements of educational policies. That is why a didactic proposal was designed and implemented (from now on it will be referred to as PDAA-CAA) through the instructional design of the ADDIE model for the development of autonomy in language learning in virtual mode. The investigation consisted of three stages:

1. Selection of participants and application of a pretest
2. Application of the didactic proposal
3. Application of a posttest to the same participants

Taking as reference the stages of the research carried out, the hypothesis was established that it is feasible to increase the perception of autonomy with the implementation of a didactic proposal that contains activities that favor its construction.

Conceptual framework

Autonomy and self-access

The concept of autonomy has gone hand in hand since the conception of learning skills as the ability to take charge of one's own learning and that it is the moment in which the learner is completely responsible for making decisions concerning their learning and implementation of them to reach a final objective (cognitive and metacognitive skills) (Gardner and Miller, 1999).

This concept is a core part of SAC, whose structure revolves around the development of the learner's autonomy, being a way to learn but not a way to teach a language. There are physical, human, administrative, and psychological elements that revolve around self-access, which allows it to be flexible, gradual, and active. Finally, the implementation of the SAC must adjust to the needs of the environment where the members must know its philosophy, since there is a change of roles between student and teacher.

Autonomous learning

There are some particular characteristics that an autonomous student must possess. Solórzano (2017) states reflective and critical thinking and that, based on the theories of cognitivism, he is capable of developing strategies to learn for himself. The same author affirms that every learning process is modifiable and transformable, converting it into more complex cognitive structures. For this reason, talking about autonomy from this vision involves a commitment to oneself to develop cognitive strategies (decision making to improve study and performance), and metacognitive strategies (reflection on one's own learning); That is, knowledge is built from the prior information that one already has.

Strategies for autonomous learning have had to migrate to other environments where virtuality is present, forming a new society of knowledge and communication. Some studies (Cabrales and Díaz, 2017; Solórzano, 2017) assert that the use of technology in education, beyond physical elements through virtual spaces, should enhance a way in which which every protagonist must be competent to know how to search, organize, process and analyze what has been found.

Autonomous learning is not the concept of working in isolation, autonomous learning also requires interaction with peers in order to create their own conclusions. This idea has frequently been confused by teachers and students, who on the one hand could leave the student adrift, and on the other hand, the student may confuse learning autonomously with learning without anyone's help.

Velázquez *et al.* (2018) and Romero and Crisol (2012), in their research mention that language learning in autonomous environments should be considered to be focused on the needs of the students, based on knowing the learning style of each student. As a consequence, they establish that a student is autonomous when he himself has realized, through a self-diagnosis, his level of fluency, his correction strategies, and constant monitoring of his objectives, achievements and needs. Finally, for the student to know how to discern which tasks are most appropriate according to their learning style, in this sense autonomy is not only a skill, it is also a transformational process.

Language teaching and learning in virtual environments

Incorporating technology in language teaching-learning implies knowing what strategies or models mediated by ICT should be considered to achieve the student's linguistic development in virtual environments. For which, Borromeo *et al.* (2018) list some considerations under the concept of instructional design:

1. The context of the student, the teacher, the classroom and the institutio
2. The knowledge of students and teachers to interact in virtual environments
3. The availability of technology for students and teachers
4. The disposition of the institution, teachers and students for their incorporation

In this sense, care must be taken when selecting the type of technological tools to be used, since language teaching is frequently dazzled by novel and commercial elements, which were initially adopted for their innovation. However, at the time of their selection it was omitted that there are particular needs, which turns these decisions into a "technological failure" (Borromeo *et al.*, 2018, p. 147) .

As previously stated, the success of incorporating ICT in language teaching does not lie solely in the graphic or most recent, but in an objective justification, where the language teacher must have the skills to know how to differentiate between material that will promote significant learning from material that will not. In this regard, González *et al.* (2017) conclude that every teacher who wishes to apply technologies in classes must know the specific learning objectives, promote collaborative work, train in values and socialize with the environment, in other words, be digitally competent.

Ríos *et al.* (2018) establish that to achieve the strengthening of digital skills through learning materials, it is essential to carry out an analysis of what type of style predominates mostly in the community that will use the learning objects, what activities are relevant for learning, and to what extent the structuring of these elements contributes to the construction of knowledge.

Calderón and Córdoba (2020) and Morales and Ferreira (2008), highlight that within language teaching in virtual environments, new methodological proposals are used such as b-learning, whose characteristic is the combination of face-to-face education with digital and distance tools and resources. This proposal allows students to interact with what they learn at any time and place, and at the same time they have face-to-face interaction with their teachers and classmates (Dangwal, 2017). This modality offers the possibility of creating meaningful educational experiences through transformative environments that encourage critical, creative and complex thinking in students.

Kumar (2009) and García (2015) indicate that it is necessary to create a virtual space where the improvement of language communicative skills is promoted through social learning networks mediated by technologies. In this context, the development of autonomy is sought through a distance learning methodology, whose characteristics must be interactive and ubiquitous.

It is clear that to trigger autonomy in language learning with digital and distance resources, it is necessary that there be systematic planning supported by educational technology, where the instructional design dictates the guidelines to follow to build an optimal environment that, on the one hand, makes linguistically competent students, and on the other hand develops the ability to be autonomous.

Instructional design: ADDIE Model

The incorporation of instructional design (ID) in educational intervention is based on the premise that it is an organized way of combining theories of learning and structuring of actions to create the conducive environment for learning to take place, whether in face-to-face environments, remote, virtual and mixed, with or without the support of technology; that is, creating a learning ecosystem, where the purpose is to generate changes in the student's knowledge in both their cognitive and attitudinal skills.

ID is the set of articulated steps of a plan, a class, a thematic unit, a subject or an educational program, from which several ID models emerge that allow selecting the most appropriate one to the needs of the environment, resources and their participants (Luna *et al.*, 2021).

Within the variety of proposals is the ADDIE model (for its acronym in English *Analyze, Design, Development, Implementation, Evaluation)* which was proposed by Russell Watson at the end of the 80s. It is based on constructivist theory, based on the specific characteristics of the student, their learning style, encouraging active and committed student participation (Williams *et al.*, 2012).

Techno-pedagogical proposal for the SAC of the UAQ

The inclusion of technological tools in the SAC depends greatly on the financial resources that each institution has and, coupled with this, particular administrative policies that provide material resources for the improvement of its facilities and services. In this framework, access or use of digital tools used within the SAC are also affected. For example, computer equipment with Internet access, use of streaming platforms to view audiovisual material, videoconferences, educational platforms, among others.

The UAQ began to implement distance activities in which students could reinforce the linguistic skills of a foreign language. Initially it was through email and recently using an educational platform with free access for students, but not for the institution. Despite these efforts, students continued to use in-person activities, but suddenly the COVID-19 pandemic accelerated the process to the center's virtuality. Even when these activities were online, there

was no structured didactic proposal that determined the type of skills that would be developed in each of the activities.

According to Márquez (2008), a didactic proposal involves the structuring, elaboration and evaluation of content in order to achieve a specific learning objective. There are various types of didactic proposals that vary according to the needs of the target population and the expected results. These proposals can be designed for in-person, remote or mixed environments. Whatever the modality in which the proposal will be implemented, it is important that there is an analysis of the needs and real situation of the participants, as well as considering what tools and skills those involved have, since the wrong selection of resources affects the result in the construction of learning (Yáñez, 2020).

For this reason, it was essential to structure the PDAA-CAA that emerged at the beginning of 2023, whose structure is based on:

1. Description of expected language skills based on the CEFR[1]
2. Description of the learning objectives of the activities
3. Incorporate strategies for autonomous learning
4. Incorporate strategy for the development of autonomy
5. Consider the student's learning style

It is worth mentioning that the objective of this article is not to describe in detail how the contents of the proposal were achieved, rather it is to know how its implementation contrasts with the activities that were carried out previously and to what extent autonomy is transformed with the intervention. However, a diagram of the characteristics of PDAA-CAA is presented below.

Methodology

The methodological approach of the research was quantitative, descriptive and correlational (Hernández *et al.*, 2014) to know to what extent through the implementation of a didactic proposal the autonomy of the students who use the UAQ SAC was modified at the end of the intervention; likewise, which learning strategies and activities contributed to this change.

This research carried out a simple probabilistic sampling (Vara, 2012) made up of 68 students (57 women and 11 men) between 19 and 23 years old who are studying a Bachelor's Degree in Nursing and who take the English subject as part of their curricular plan and make use of of the SAC in distance mode. The participants were grouped as shown in table 1.

[1] Common European Framework of Reference for Languages

Table 1. Study participants

Cluster	Number of participants	Gender M:male F: female	English level according to the CEFR	Bachelor Semester
G1	12	10F 2M	A1	Third
G2	23	19 F 4 M	A2	Fourth
G3	18	16F 2M	B1	Fifth
G4	15	12F 3M	B1	Sixth

Source: Own elaboration

The level of English described in table 1 is assigned by what is established in the study plans of the educational program. The level of linguistic competence that the students have was considered, but not in terms of autonomy.

The research adopted a descriptive correlational approach with the objective of describing and understanding the relationship that exists between two variables (Vara, 2012). Through a pretest and posttest, it sought to expand and specify which strategies were relevant to develop autonomy for the language learning in distance mode in the SAC of the university through the implementation of the PDAA-CAA. To measure the autonomy variable of this research, an instrument was created with 24 items on a Likert scale that was subjected to validation by the judgment of 9 experts (Escobar and Cuervo, 2008) and finally, with the SPSS software, the mean of the Aiken's V to know the item-construct relevance (Galicia *et al.*, 2017) where the value close to 1 is considered to have greater validity.

Table 2. Validation of the instrument

Item	V for Aiken	Aim[2]	Item	V for Aiken	Aim
1	0.87	1	13	0.81	3
2	0.88	1	14	0.83	2
3	0.85	2	15	0.78	3
4	0.80	2	16	0.82	2
5	0.88	2	17	0.81	2
6	0.75	1	18	0.90	1
7	0.80	3	19	0.85	3
8	0.80	1	20	0.77	3
9	0.73	1	21	0.78	1
10	0.82	2	22	0.81	3
11	0.84	2	23	0.85	1
12	0.77	2	24	0.83	3

Source: Own elaboration

Table 2 shows the average results of each item to know the relevance of each of them in the instrument where its validity showed a total Aiken V of 0.82 to finally apply it to the study groups.

[2] The aim column in Table 2 shows the classification of each item of the instrument and its relationship with the categories grouped for the research: 1) degree of autonomy for language learning, (2) learning strategies to promote autonomy and, (3) activities that contributed to their own learning.

Table 3. Instrument categories

Instrument Category	Item
Degree of autonomy for language learning	Did the objective of the activity contribute to your learning objectives? Do you think that after having developed several TECAAL activities [3], you can now make your own decisions to carry out similar activities to improve your written production? Do you think that after having developed several TECAAL activities, you can now make your own decisions to carry out similar activities to improve your oral production? Do you think that after having developed several TECAAL activities, you can now make your own decisions to carry out similar activities to improve your listening comprehension? Do you think that after having developed several TECAAL activities, you can now make your own decisions to carry out similar activities to improve your reading comprehension? Can you identify what your next learning objective will be? Can you identify what you will change in your work plan? On a scale of 1 to 10, with 1 being the least and 10 being the greatest degree of autonomy. What grade do you consider you have at the end of these activities?
Learning strategies to promote autonomy	At the end of the activity, do you know what information to look for to complement your

[3]TECAAL is the name by which the self-access center at the UAQ is known.

	learning? Can you identify what type of information you are looking for to complement your learning? Is it useful to have a self-assessment at the end of the activity? Can you identify what self-assessment is for? At the end of the activity, do you identify what you need to improve? Can you identify what strategies you will use to continue studying a language independently? At the end of the activity, do you know what you should change in your work plan? Did the activity help you plan your next learning objective? Did the feedback in the activity help you not make the same mistakes in the future?

Activities that contributed to your own learning	Do you consider that with these activities you have acquired learning strategies that help you continue studying a language independently? Does the activity have an impact on the way you learn (are you auditory, visual or kinesthetic)? Does the variety of exercises in the activity contribute to your autonomous training? Do you identify which exercises contribute to your autonomous learning? Do you identify what decisions you made at the end of the activity to improve your oral and written production? Do you identify what decisions you made at the end of the activity to improve your listening and reading comprehension? Does the time given to carry out the activity contribute to your autonomous learning?

Source: Own elaboration

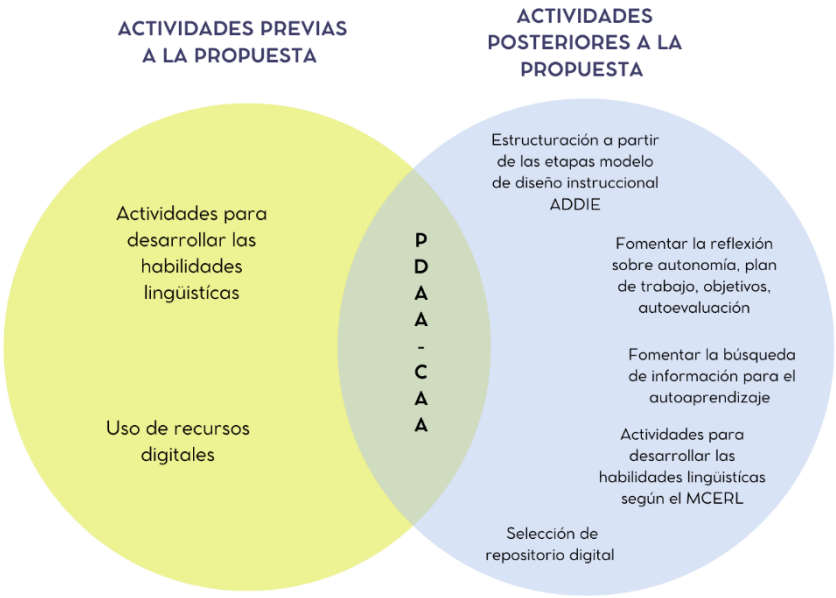
Table 3 shows the three categories in which the instrument was structured to carry out the pretest and posttest in the study groups. Each of the items was evaluated on a Likert scale with five values assigned for each of the items: totally agree, agree, neither agree nor disagree, disagree and totally disagree.

Results

The results were grouped into three categories: (1) degree of autonomy for language learning, (2) learning strategies to promote autonomy and, (3) activities that contributed to their own learning. The results obtained were compiled from the four study groups described in the methodological part, where a pretest and a posttest were applied.

The objective of the pretest was to know the situation prior to the intervention, where activities that were not structured under the PDAA-CAA designed from the ADDIE model of the CAA of the UAQ were taken as references. For its part, the posttest reports on the change in perception in these three categories when using activities structured in the PDAA-CAA that was previously designed.

Figure 1. Characteristics of the PDAA-CAA



Source: Own elaboration

As can be seen in Figure 1, the use of virtual activities in the SAC focused solely on linguistic aspects. However, these activities did not have the characteristics of autonomous learning, so it was necessary to inform the student about this issue, as well as restructure the

activities not only by linguistic skills, but also by levels. At the same time, a virtual repository was selected to carry out this new proposal, which now included the data presented below.

Degree of autonomy for language learning

Table 4 shows the statistical results obtained from the instrument before and after the application of the didactic proposal. The instrument measures autonomy, the information of which was obtained from 8 items that were created with the objective of exploring this area in the participants. As shown in Table 4, an average is obtained on the perception of how autonomous the students of each group consider themselves when applying the PDAA-CAA of the UAQ.

Table 4. Degree of autonomy

Cluster	Participants	English level according to the CEFR	Pretest Autonomy	Posttest Autonomy
G1	23	A1	6	6.75
G2	12	A2	6.08	7.83
G3	15	B1	6.80	8.06
G4	18	B1	6.94	8.18

Source: Own elaboration

It can be seen in Table 4 that the results of the pretest and posttest vary in relation to the level of English that the students have when belonging to the study group. While G1 has one previous semester of using virtual SAC, G4 participants have five semesters of familiarity with using SAC.

Strategies to promote autonomous learning

The results in Table 5 describe the extent to which autonomy strategies changed before and after carrying out the intervention.

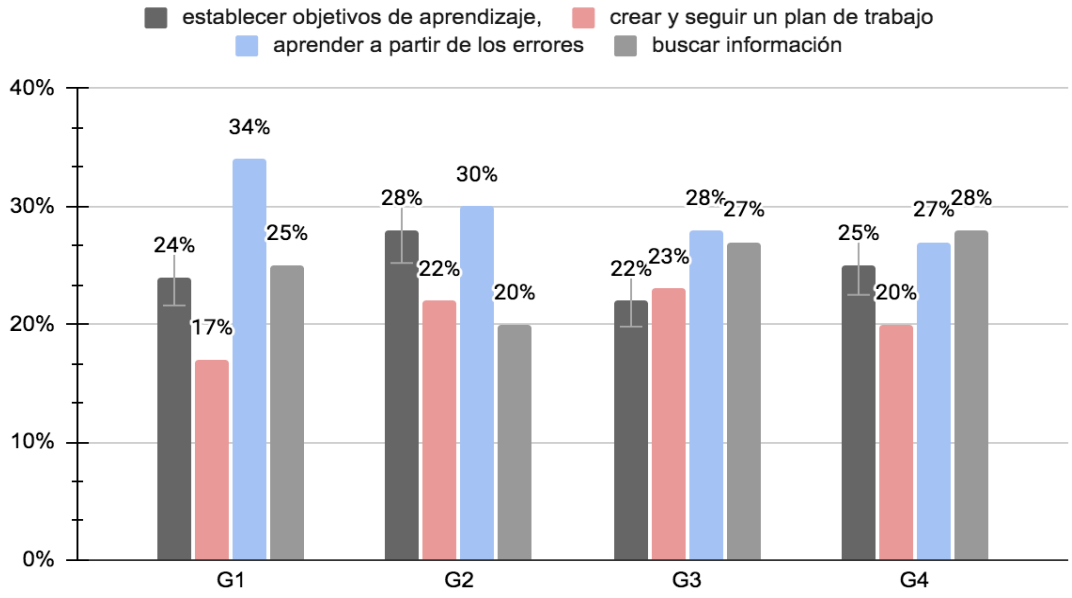
Table 5. Autonomous strategies

Cluster	Participants	English level according to the CEFR	Pretest	Post test
G1	23	A1	4.30	5.63
G2	12	A2	6.18	7.35
G3	15	B1	6.83	7.87
G4	18	B1	6.94	8.22

Source: Own elaboration

To find out which most recurrent autonomous strategies contributed to building autonomy, the posttest considered the following: establishing learning objectives, creating and following a work plan, learning from mistakes and seeking information to avoid making the same mistakes.

Figure 2. Mostly used autonomous strategies



Source: Own elaboration

Figure 2 shows the results obtained by groups, where learning by errors is the most used for students in G1 (34%), G2 (30%), G3 28% and takes second place (27%) in the G4 where they choose to use information search (28%). This last strategy accounts for a degree of autonomy to complement what is being learned.

Activities that contributed to self-learning

The data obtained in Table 6 shows the average in which the use of activities included in the didactic proposal influences the perception of autonomous learning.

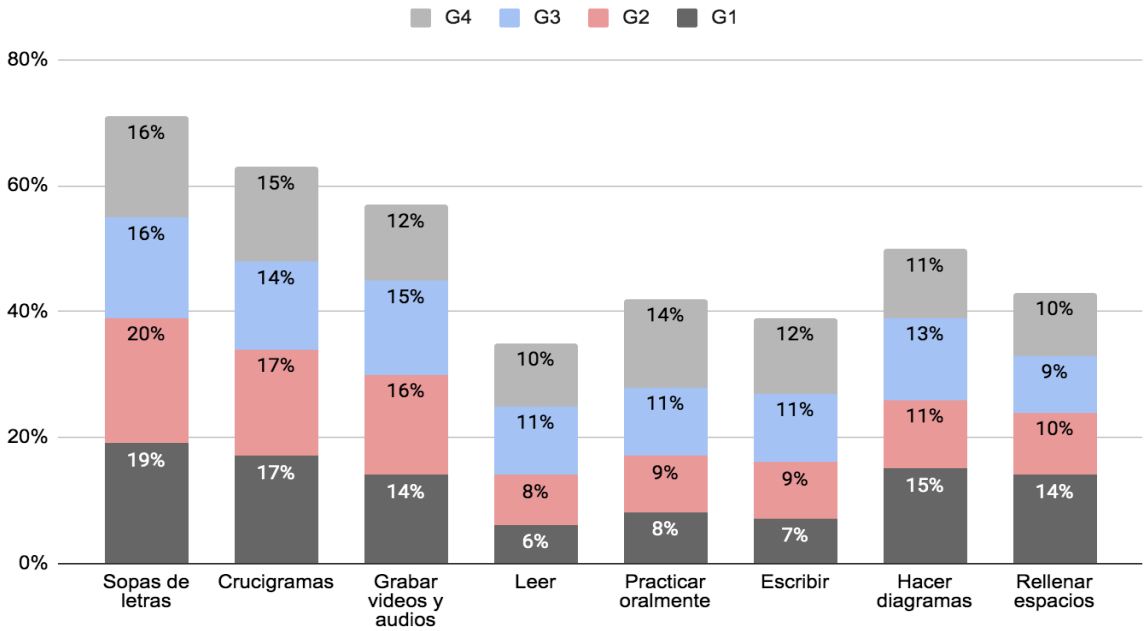
Table 6. Activities for self-learning

Cluster	Participants	English level according to the CEFR	Pretest	Post test
G1	23	A1	5.60	7.31
G2	12	A2	6.30	7.42
G3	15	B1	7.87	8.24
G4	18	B1	8.02	8.78

Source: Own elaboration

As seen in Table 6, there is once again a variation between the results obtained from G1 compared to those from G4, since the latter have more semesters using virtual activities for their learning. To know the accumulation of activities that promote virtual learning, 8 items that contemplated this area were included, where the following data is shown.

Figure 3. Most recurrent activities for self-learning



Source: Own elaboration

Figure 3 contains a list of activities that were developed in the PDAA-CAA to know which are those that have greater relevance and significance in the groups surveyed. The eight activities used are related to the four linguistic skills in language learning: listening and reading comprehension, oral and written production. Each of the activities were designed with digital tools in which students used their mobile devices or computer equipment with Internet access.

The results of G1 and G2 stand out, where they opt for activities where vocabulary learning is prioritized through word searches and crossword puzzles (G1 19%) (G2 17%). It is important to highlight that the activities that require oral production, or the creation of diagrams, are mostly recurrent in groups G3 and G4 in relation to the initial groups.

Discussion

The global situation due to COVID-19 accelerated the renewal of SAC towards virtuality, however, there was no clear idea about what to do, or how SAC could continue to contribute to language learning in virtual or distance environments. This abrupt jump stimulated the search for strategies that included digital tools that allowed the students who attended the SAC to learn.

The PDAA-CAA in this research incorporated several activities that allowed for more interactive participation in terms of autonomy, in the same way elements of self-assessment were incorporated that allowed the student to reflect on their performance at the end of the proposed activities. It is important to mention that including the use of technology as support for language learning can contribute to generating better levels of perception of one's own autonomy. Under this line, the results of the research show which were the activities that students use to promote their self-learning, with those that involve technological elements being the most relevant. Carranza *et al.* (2018) in their study argue that the correct selection of these digital activities and tools directly influences the acquisition of new skills such as autonomy, as long as they provide significance to students.

Learning in virtual environments requires that students have the ability to learn by themselves, in other words, they have developed autonomous learning. However, not all students have this ability, it is therefore necessary to create a conducive environment where students can develop this competence through stimuli mediated by technology and thus achieve learning objectives. In this regard, Suyo *et al.* (2021) confirm that it is necessary to create a digital environment to promote autonomous processes, since autonomous training is a skill that must be acquired gradually. In the research it was necessary to know the type of skills or strategies that the students expressed contributed to their autonomous processes; this was

achieved through the applied instrument that accounts for what strategies contribute to training in autonomy.

When talking about strategies that promote autonomy, those related to self-management stand out, whose objective is promote responsibility, self-discipline and the ability to make autonomous decisions. In this study, aspects such as establishing objectives, creating and monitoring a work plan, searching for information and learning from mistakes were addressed.

According to Sanabria (2020), these strategies are classified as pedagogical strategies to acquire autonomous learning skills in virtual environments and are linked to the type of activities implemented to trigger what are subsequently defined as metacognitive skills. In this sense, it is the way in which the path towards autonomy is built, once the student reflects on how to establish objectives and a work plan. These issues were implemented in the PDAA-CAA through informative and awareness-raising videos.

Another of the findings of the proposal was related to the search for information to complement learning. This type of decisions contributes to the construction of autonomy, since the student is invited to acquire strategies for obtaining and searching for information, specifically through exploration (Maldonado *et al.*, 2019). In this regard, the PDAA-CAA included additional digital resources and references for the student to explore the topic of the activity on the web.

To reach a scaffolding in autonomy, the PDAA-CAA that was developed was structured with reflection, planning and evaluation activities to determine the objective of the research, which is to know the level of autonomy of the students. Since there is no project for the UAQ's SAC in virtual environments, it was necessary to create the proposal considering the theoretical elements of instructional design for virtual teaching and learning environments and the digital resources that promote the development of autonomous learning. The above is in line with what was said by Ramos *et al.* (2021) who propose that virtual environments must include digital resources that help build this autonomy. To know the level of autonomy that the students in this research have, it was necessary to develop instruments to measure it, which coincides with Zimmerman (2008) who states that it is essential to develop instruments that account for the extent to which autonomy strategies are reflected in a change of attitude among students.

When there is systematic planning to develop both language skills and metacognitive skills, such as planning, time management, decision making and goal setting, autonomous learning is achieved. The didactic strategy implemented in the SAC fulfills its function as a training medium in the development of autonomy. In this regard, Huerta and Alcubilla (2021)

emphasize the importance of renewing these educational spaces, providing them with strategies where virtuality is an extension of what they offer. This is far from the results presented by Castillo and Domínguez (2019) and UNAM (1999), where in their reports the virtuality in the SAC was not seen. For this purpose, it was decided that the PDAA-CAA included virtuality as a formative part of the students' autonomous process.

If the aim is for students to become increasingly autonomous and responsible in achieving their learning objectives, the articulation of this type of techno-pedagogical proposals can account for their implementation. Therefore, it is essential to include a variety of digital resources that continue to train both autonomy and language learning. This idea confirms what Alvarado (2021) and Terreni *et al.* (2019) mention the development of resources to promote autonomous learning and the need for these environments to gradually guide integration into this new modality. In this sense, the PDAA-CAA includes both activities for self-learning of languages and for autonomous language training. However, this study explores the field further on the degree of autonomy that students possessed at the end of the intervention.

Following this line on the development of autonomous learning in virtual environments, the results found in the pretest and posttest of the research carried out show that it is possible to impact students in making decisions about their own learning, since the results found in the study groups report on the degree of perception they expressed when using the didactic proposal, where students have their own control over the pace, resources and time dedicated to their learning. This reflection coincides from the point of view of Valero (2021) and Román *et al.* (2023) who highlight the degree of autonomy in their research that was obtained through the implementation of a digital platform, which is related to the type of strategies used to achieve the stated objectives.

Although it is true that what was found in this research provides quantitative information about the way in which students perceived their degree of autonomy after the intervention, it is necessary to consider a larger sample that includes other languages. It is also important to consider qualitative techniques, such as interviews and observation, to deepen our knowledge of the level of autonomy that students develop. This aspect is analyzed by Ohara and Ishimura (2020) when carrying out an evaluation of the impact on students within the SAC and their migration to virtuality when it was affected by the COVID-19 pandemic.

Conclusions

Derived from the above, it is concluded that the students' perception of the level of autonomy achieved at the end of the intervention of the didactic proposal increased due to the type of strategies and activities that were included to promote the development of autonomy. Given the aforementioned findings, it is considered important to continue analyzing the impact that the UAQ proposal in the SAC has on the attitudinal change regarding autonomy.

It is worth mentioning that autonomy in language learning is an issue that has become more relevant with the advancement of technology. When there is a planned and structured virtual learning environment with a series of resources that have an impact on its participants, these allow students to gradually acquire autonomy which is closely linked to the motivation that can be generated to opt for this modality of learning. It is important to highlight that the autonomy obtained in the research is closely linked to the autonomous strategies that were considered when creating the PDAA-CAA, since previously there was no element in the activities for the SAC that would guide the self-reflection of the students in their own learning, the results of which show the importance of providing activities that encourage the development of autonomy.

Educating and teaching in autonomy is a great opportunity to develop the potential that students have, as the authors and studies cited in the document demonstrate that it is possible to increase one's own perception of autonomy and that under certain scenarios this ability can be perfected. was explored as the dependent variable of this study that is directly related to the independent variable which was the PDAA-CAA.

Finally, the degree of interaction that exists between SAC students in the virtual modality is almost zero, this could be a limitation of the study, considering that autonomous training requires collaborative learning and not in an isolated sense. The above generates an opportunity to develop the social part of the proposed teaching model using digital tools such as blogs, forums, chats, tandem learning, artificial intelligence and even three-dimensional environments and a wide variety of proposals mediated by technology that shorten physical distances and ~~they~~ create a socially virtual environment.

Future lines of research

The results obtained from the research have focused on a quantitative analysis of the perception of autonomy in learning the English language within the SAC in its virtual modality. As part of future research, it is suggested to include qualitative data that can be included in the instruments applied in the implementation of the didactic proposal whose results would justify the reason why the participants have a different perception about their own autonomy. In addition to this consideration, the PDAA-CAA tries to incorporate the four linguistic skills of the English language. However, due to the nature of the digital resource that was used to design the proposal, oral production does not go beyond structured audio and video recordings, limiting the student's ability to interact with other students or the teacher himself, with oral production being in environments virtual another of the lines of research to understand its relationship with autonomy in learning. Finally, it is important to evaluate whether the perception of autonomy could be related to the gender of the participants.

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