TECHNOLOGICAL APPLICATIONS
ADAPTED TO THE RHYTHM AND STYLE OF LEARNING IN HIGH SCHOOL STUDENTS.

Aplicaciones tecnológicas adaptadas al ritmo y estilo de aprendizaje en estudiantes del bachillerato.

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Abstract
Technology has revolutionized all aspects of modern life and teaching English is no exception. However, most teachers find it difficult to adapt to the use of technological tools in their classroom. The purpose of this research is to demonstrate the use of technological tools adapted to the rhythm and style of learning the English language in their students. It will be carried out using a qualitative approach. The participants were five teachers from the "Amazonas" Educational Unit, the data was obtained through an interview of nine questions, assuring them that all the same information provided in the interview would be a net of the investigation, thus the application of a survey of nine directed to the students of the educational unit "Amazonas". The information provided by the participants helped to corroborate the information where it was obtained as a result that not all teachers are trained for the proper use of technological tools and therefore do not adapt these tools to each rhythm and learning style of their students.
keywords: Technology; teaching; English language; style of learning.

Resumen
La tecnología ha revolucionado todos los aspectos de la vida moderna y la enseñanza del inglés no es una excepción. Sin embargo, a la mayoría de los docentes les cuesta adaptarse al uso de herramientas tecnológicas en su aula. El propósito de esta investigación es demostrar el uso de herramientas tecnológicas adaptadas al ritmo y estilo de aprendizaje del idioma inglés en sus estudiantes. Se llevará a cabo utilizando un enfoque cualitativo. Los participantes fueron cinco docentes de la Unidad Educativa "Amazonas", los datos se obtuvieron a través de una entrevista de nueve preguntas, asegurándoles que toda la misma información brindada en la entrevista sería una red de la investigación, por lo que se aplicó una encuesta de nueve dirigidos a los estudiantes de la unidad educativa "Amazonas". La información brindada por los participantes ayudó a corroborar la información donde se obtuvo como resultado que no todos los docentes están capacitados para el uso adecuado de las herramientas tecnológicas y por ende no adaptan estas herramientas a cada ritmo y estilo de aprendizaje de sus estudiantes. ultimately making a lasting impact on sustainability and human development.
Palabras clave: *Tecnología; enseñanza; lengua inglesa; estilo de aprendizaje.*

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Introduction

Currently, we live in a totally globalized world where we are all connected with everyone. Therefore learning languages is a great tool when it comes to progressing as a student and as a professional. When speaking English as a foreign language, it refers to learning a language different from the mother tongue (Mei, 2008).

The process of learning English as a foreign language generally takes place in the classroom, a place in which different controlled activities are carried out. Despite the fact that this process occurs for the most part in the educational field, students can reach a high degree of English language development depending on the pace and learning style that they will have to learn the language.

When talking about learning rhythms and styles, reference is made to the way each person uses to learn; his way implies the use of some method or strategy that facilitates learning, such as observing, listening, and writing. On the other hand, the use of educational technology is fundamental in this transformation, because technology is increasingly present in the world, and the jobs of today and of the future are increasingly linked to it.

To raise the meaning of learning styles, we will start with why it is learning. Feldman (2005, cited by Zapata-Ros, 2015) considers "learning as a process of relatively permanent change in the behavior of a person generated by experience" (p. 73); which supposes that there are changes in the behavior of the individual that can be lasting over time.

For their part, Richards & Lockhart (2007) refer to cognitive styles in learning as cognitive characteristics or psychological behavior "that serve as stable indicators of how the student perceives, interacts with and responds to learning environments". Cognitive styles, then, can be described as particular predispositions to approach learning that are directly related to personality types. The different ways in which people respond to learning situations reflect differences in their cognitive styles.

Cognitive learning styles can be improved through the use of programs or technological applications. According to Harmer (2001), language teaching computer programs offer students the opportunity to study conversations and texts, perform grammar and vocabulary exercises and, even more, listen to the texts and record their voices. Therefore, its usefulness and the degree of motivation that they represent for the student is undeniable.

One of the most relevant was the one carried out in 2011 through the updating of the Curricular Reform, which made transformations in the structure of meshes in all subjects and began with the project "It is time to teach English". In it, an attempt was made to improve the system of teaching English as a foreign language, and aspects of methodology and teaching skills were taken into account.

In April 2016, the Higher Education Council, in the Codified Higher Education Regulations, article 31, established that university students must reach a B2 level, upper intermediate, according to the Common European Framework in order to graduate.

On the other hand, with the help of technology, methodologies such as the flipped classroom can be applied, where students study part of the class content on their own through the use of digital tools. In this way, the teacher can dedicate more class time to implement activities such as discussion of topics, debates and presentations that develop collaboration and critical thinking instead of doing repetitive practice.

Before carrying out this research, it starts from the project of pre-professional practices of the Secular University "Eloy Alfaro" of Manabí - Chone extension of the career of Pedagogy of National and Foreign Languages in the Educational Unit "Amazonas". This contributed to obtaining a fundamental experience in training as future teachers, providing feedback on the teaching methodologies used in the classroom, adapting the activities to the needs, styles and learning rhythms of each student or group. Referring to the experience lived in the "Amazonas" Educational Unit where the pre-professional practices were carried out, the creators of this work wanted to delve into the subject related to technological tools adapted to each rhythm and learning style focused on the area of English. , where it was evidenced that the teachers of the educational unit ''Amazonas" do not apply these technological tools during classes, not adapting them to the rhythm and learning style of the students, and that is why the lack of interest and motivation to learn the language.

With this article we return to the series of works whose general objective is to analyze the impact that technological applications have had on the teaching-learning process of English adapted to the rhythm and learning style of high school students, likewise; Determine what technological applications are used and how frequently during the development of English classes in secondary school, identify the academic processes of secondary students that are related to the use of technological tools with activities in English, establish digital competences that teachers have regarding the use of technological applications in the teaching of English, analyze the factors that influence the use of technological applications by students.

Literary review

Adaptive e-learning changes the level of instruction dynamically based on student learning styles and personalized instruction to enhance or accelerate a student's success. Directing instruction to each student's strengths and content needs can minimize course dropout rates, increase student outcomes and the speed at which they are accomplished. The personalized learning approach focuses on providing an effective, customized, and efficient path of learning so that every student can participate in the learning process (Al-Chalabi, H., & Hussein, A., 2020)

It is necessary to know the development of the students according to the pace and style in which they learn, to know their weaknesses

and strengths, and to obtain effective learning since each student or person learns differently.

The handing of course materials is an important issue of personalized learning. Moreover, designing a well-designed, effective, adaptive e-learning system represents a challenge due to complication of adapting to the different needs of learners (Alshammari, 2016)

Several challenges have to be faced according to the good use of the increase in technology in learning, since for some this use is not known but, with the implementation of good materials and thus achieve personalized learning.

Regardless of using e-learning claims that shifting to adaptive e-learning environments to be able to reinforce students' engagement. However, a learning environment cannot be considered adaptive if it is not flexible enough to accommodate students' learning styles. (Ennouamani, S., & Mahani, Z., 2017) With the good use of the tech tools, active participation on the part of the students can be achieved, considering that the activities must be flexible for everyone and must be adapted to the rhythm and style of each student in order to obtain favorable results.

It is important to clarify the distinction between causal factors such as learning environment and outcome factors such as achievement. Accordingly, student engagement is an important research topic because it affects a student's final grade, and course dropout rate (Staikopoulos, A., Keeffe, I., Yousuf, B. et al., 2015) It is of the utmost importance to maintain the active participation of the students in a pleasant learning environment since this way we will know if they are interested in learning or if they are learning.

In order to effectively use emerging digital educational technologies educators should reflect on how these technologies influence student learning, including student creativity.

The purpose of our systematic review was to identify and synthesize articles in the field of creativity and education concerning the use of emerging digital educational technologies and systems (Yalcinalp & Avcı., 2019).

Tech tools have their pros and cons depending on the use that is given to them, which is why the teacher before using them must carry out a study on how they influence student learning and if it awakens creativity in them.Nonverbal immediacy behaviors are under researched in the online teaching environment. Using social presence theory as a guiding framework, this study explores several online nonverbal immediacy behaviors: emoticons/ figurative language, color, cohesion, visual imagery, and audio in course design; response latency, length, time of day, and message frequency in forums; and type and promptness of feedback via grading and email. (Rogers-Stacy, C., Weister, T., & Lauer, S., 2017)

There are various forms of communication, in the virtual scenarios the use of emoticons was highlighted expressing the emotions of the students, using text messages and emails to communicate and some simply stopped communicating for fear of participating, and in this way the communication is He gave up, which does not happen in the face-to-face scenarios.

Technological change is altering the way educators deliver subject matter content. The growth and widespread acceptance of the Internet has resulted in the creation of Virtual Learning Environments (VLEs) in teaching at any educational level. (Urdiales, 2020)

As a result of the Covid 19, which caused the classes to be virtual, education had to adapt to virtual environments and especially teachers to create and develop technological adaptations to teach the class and that education did not stop, therefore the virtual environment had benefits but it also had consequences for those students who failed to learn much in that virtual educational environment.

This virtual educational model requires the application of new methodologies and techniques to motivate students in their intellectual self-enrichment, in the self-discipline of study in order to develop intellectual abilities and skills that allow them to perform as integral professionals contributing significantly to the progress of their community. (Pérez, C., Suárez, R., Rosillo, N., 2018)

Modern technological applications are motivating from the moment that students use them because now in the current time all students dominate technology and that is what they like, they demonize cell phones, laptops, and most of the apps or web that are easily accessible for students.

Learning styles which refer to students' preferred ways to learn can play an important role in adaptive e-learning systems. With the knowledge of different styles, the system can offer valuable advice and instructions to students and teachers to optimize students' learning process. Moreover, e-learning system which allows computerized and statistical algorithms opens the opportunity to overcome drawbacks of the traditional detection method that uses questionnaires. (Truong, 2016)

The traditional method is now past, with the implementation of new technologies adapted to the learning styles of each student where they learn positively in the way that interests and likes them.

Restrictions on physical gathering due to COVID-19 has compelled higher education institutions to rapidly embrace digital technologies to support teaching and learning. While logistically, the use of digital technologies offers an obvious solution, attention must be given to these methods' pedagogical appropriateness, mainly how students engage and learn in the spaces supported by these technologies. In this context, we explored the degree to which digital technologies have contributed to teaching and learning practices over the past decade. (Nkomo, L. M., Daniel,

B. K., & Butson, R. J., 2021)

It is important to keep track of the student when he receives virtual classes because students learn in different ways and when they learn kinesthetically, they usually fall asleep in front of a screen, for that reason, it is important to turn on the camera, make them participate and include them in the class to avoid that Distraction problems with students in the virtual environment (Alshuaibi et al., 2018). Stated that social media could enhance student's cognitive engagement in learning as they found cognitive dimension had a mediating role in the relationship between social media and academic performance.

Perhaps social networks help to give homework, but we believe that it does not help academic improvement to the maximum, remembering that they can be easily distracted by certain applications.

Among the main results are: 1) TIC in the educational field acquire significant importance by allowing the creation of virtual spaces for dynamic, autonomous, flexible learning, adapted to the rhythm and learning style of schoolchildren, interactive and collaborative; 2) these technologies bring benefits to the teaching and learning of Social Sciences by facilitating the broadening and deepening of the contents taught in class through research; 3) there are active methodologies that make the learning of Social Sciences more efficient, including the flipped classroom, gamification and project-based learning, which focus on the student as the protagonist of their own learning; 4) despite the advantages of TIC, the policies of the Ecuadorian State and educational strategies on the use of educational technologies, even these are not used enough, sometimes due to apathy or lack of technological training of educational agents, hence the urgency of technologically training the teachers of Basic General Education. (Aguilera Ruiz, et al., 2017)

It is important to recognize that ICTs currently matter and greatly influence modern education due to their learning style, whether virtual or interactive through educational applications that serve to make students autonomous in learning guided by applications, The interesting thing is that no matter what subject it is, there are applications for all kinds of subjects or subjects, some forms that are efficient and others that are not so efficient.

In the traditional approach to education, teachers take various steps to appraise students' levels of performance, motivation, and engagement such as conducting exams, checking student attendance, and monitoring studying via security cameras. However, on web-based platforms, there are no face-to-face meetings, and it is difficult to determine student engagement levels in online activities such as participating in discussion forums or watching videos. (Hussain, M., Zhu, W., Zhang, W., & Abidi, S., 2018)

Considering the virtuality or applications that serve for the evaluation, they will not always be as efficient as the teachers in class, since through the interaction the teacher develops better and creates a better connection with the students.

Methodology

The idea for doing this article comes from the pre-professional practices, they were carried out with various instruments, which were applied following a mixed methodology since, it was qualitative because the opinion of some teachers was taken into account to give response to the research questions, and quantitative since a questionnaire was applied to students to gather information from another point of view. This research was based on the inductive-deductive method. Qualitative research is the systematic study of society phenomena in nature. These phenomena can include but are not limited to how people create experiences Aspects of their lives, such as individuals and/or groups Behavior, how organizations work, and how interactions shape relationships (Teherani et. al., 2015).

According to Proudfoot (2022) the inductive-deductive method this combined approach helps to ensure that the voices of the participants are heard while allowing for more theory-driven analyses. It is argued that this approach brings real benefits and could be used more widely. Because this research is of a qualitative nature, the instruments used for data collection were interviews with teachers and surveys of students, since it allows collecting the most relevant information on a large and small scale from a sample of a given population.

The data collection was carried out in four weeks, the population was 240 students from the Educational Unit "Amazonas", from where a sample of 71 students was considered, these students belong to the first year of high school. The students belong to medium-low class society, they are between 14 and 16 years old, most of them, live in the urban area, a few of them live in the rural area.

In addition, a population of five teachers from the English area was also taken, for the application of the interview. In the first week, the information was gathered and analyzed according to the subject, the instruments. The instruments were a) the questionnaire, which was made up of nine questions with multiple answers related to scientific tasks and related to the use of technological tools adapted to each rhythm and style of learning the English language in high school students. b) The interview, which was prepared for the teachers, consisted of nine questions to verify the use of technological tools adapted to the rhythm and style of learning the English language in secondary schools.

The choice, of course, was specifically for sampling purposes and for the study of this research; that is, the sample was random and convenient, since they were students and teachers in their first year of high school.

Results

Interviews

After the analysis of the information provided by the teachers

through the interviews, it is evident that there are different situations in terms of technological applications adapted to the rhythm and style of learning in BGU students.

Table 1.
Interview with teachers.

	Questions	Analysis of the answers.
Q1	From your point of view, how important is the use of technological resources, as didactic support in the teaching and learning processes?	100% (five) of the interviewed teachers state that the use of technological means is important because they allow sharing information, working in real-time with students on various websites, especially in virtuality it was very useful because students exhibited greater interest and participation in classes on the other hand, in person, they are no longer so essential, but they are a great didactic support.
Q2	Do you use technological applications adapted to the rhythm and style of learning the English language, if so, which ones do you use?	100% (five) of teachers use technological applications adapted to the rhythm and learning style of students during classes and in pedagogical accompaniments such as Collected, Paddle, music, YouTube videos, among other websites and digital applications. However, it is not always used because the institution and the students sometimes do not have internet to access the websites.
Q3	How important is the use of technological resources, as didactic support in the teaching and learning processes of the English language?	100% (five) of the teachers stated that the use of technological resources is important for the teaching and learning process, which allows them to have an interactive, affable and dynamic class through games, and interactive activities according to the rhythm and level of the students. students.
Q4	Do you think that technological resources influence the acquisition of learning by students in the subject of English? If so, how?	80% of teachers believe that technological resources do influence language acquisition because if a student has an electronic medium in which they have Internet access, they can access websites and practice English skills, although it affects them students who do not have an electronic device or internet, which further delays learning. The other 20% believe that there is no feasible way to check if students really learn with the use of technological resources since there is no way to fully evaluate all the parameters because students can show a positive result and have no knowledge.
Q5	Do you think that Google translator is better than a physical dictionary when analyzing the social and technological factors of modern education?	80% agree that the google translator is better than a physical dictionary because they consider it faster and the internet is often not needed, depending on the application. While the other 20% do not agree that the google tool is better than a dictionary because they stated that students are easily distracted by accessing other applications or social networks and that the translator does not always translate correctly.
Q6	How often do you receive training on the use of technological tools as didactic support in the teaching and learning processes of the English language?	80% (four) of teachers do not receive training from the Ministry of Education, they have to find the means, courses and institutions to train themselves to learn and improve their practices as educators. The other 20% (one) were in a program by the Minister of Education “Ecuador speaks English” on technological tools to apply to students.

Q7	Do you consider that technological resources allow greater production/interaction in the teaching-learning process of the English language, motivating students? Why	100% (five) expressed those technological resources allow greater production/interaction in the teaching-learning process of the English language because students who know how to use the applications improve quickly, and those who do not know, learn how to use them while at the same time, they learn English, increasing their production in the teaching-learning process. Furthermore, if the institution had the necessary equipment, and an English laboratory, learning would be much more effective and faster.
Q8	Do you consider it necessary to use technological resources in teaching the English language? Why?	100% (five) stated that the use of technological resources in teaching English is necessary because to learn an L2 you need to practice the 4 (four) skills and through the videos, they can improve listening, and they even mentioned that there are students who through applications or videos are more interested in English than in the traditional way, which is grammar in books.
Q9	Do you think it is possible for students to change the way they perceive learning the English language with the use of technological resources?	100% (five) expressed those technological resources do change the way they perceive English since they are more interested in using technology because with videos, music, games, messaging applications and interactive activities they can practice the language, even more so if more hours are taught in the week and the infrastructure will be available in the educational institution.

Elaboración propia

Table 2
Student survey.

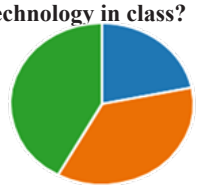
In the survey applied to 71 students of the first year of Baccalaureate of the Educational Unit "Amazonas" about Technological applications adapted to the rhythm and style of learning in high school students, the following results were obtained for each question asked.

1. When does the English teacher use technology in class?

At the beginning of class. 15 (22%)

At the middle of class 25 (36%)

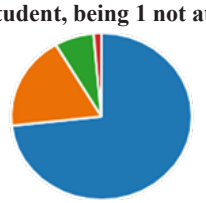
At the end of class 29 (42%)



Analysis. According to the results of the student survey of when the teacher uses technology in class, 42% (29 students) mentioned that the teacher uses the technology at the end of the class, on the other hand, 36% (25 students) said that the teacher uses technology in the middle of class, finally 22% (15 students) stated that teachers use technology at the beginning of class.

2. How useful do you consider technological instruments in learning the English language in you a student, being 1 not at all useful and 4 quite useful?

Quite useful 52 (74%)
Moderately useful 13 (18%)
Little useful 5 (7%)
Nothing useful 1 (1%)



Analysis. According to the results obtained in the survey on how useful students consider the use of technology in learning the English language, the two most relevant results mention: that 73% (52 students) consider it quite useful, on the other on the other hand, 18% (13 students) consider the use of technology moderately useful.

3. When the teacher uses technology, what are the most common problems that happen the most in the classroom?

The teacher does not know how to use technology 2 (3%)

The technology used by the teacher is obsolete. 2 (3%)

Internet failure. 27 (38%)

The failure of technology by students. 12 (17%)

Others 28 (39%)

Analysis. According to the results obtained in the survey about what are the common problems that happen in a classroom, the two most relevant results mention: on the one hand, 38% (27 students) mentioned it is due to the internet failure, on the other hand, 39% (28 students) expressed it was due to others such as they do not have data, the technology of the devices does not support the platform. A third group, 17% (12 students) said it is because the failure of technology by students.

4. When the teacher uses technology, how does it affect the class when there are connection problems to the server, network, or computer?

A lot.	19 (27%)
A little	34 (48%)
Nothing	18 (25%)

Analysis. According to the results of how connection, network or computer problems affect the class when the teacher uses technology, 48% (34 students) agree that it does affect connection problems a little, on the other hand, 27 % (19 students) said that it affects a lot, a third group of 25% (18 students) mentioned that it does not affect anything.

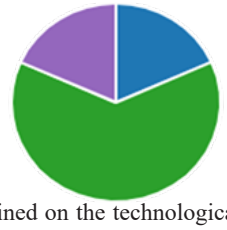
5. Does the teacher implement technology in the classroom as a teaching tool?

Always	4 (6%)
Almost always	9 (13%)
Sometimes	29 (41%)
Rarely	23 (32%)
Never	6 (8%)

Analysis. According to the results obtained on whether the teacher implements technology in the classroom as a teaching tool, emphasizing the highest values we have that 41% (29 students) indicated that the teacher applies technology as a teaching tool only sometimes, while that 32% (23 students) mentioned that they rarely apply them.

6. Which of the following media or technological resources do teachers use in class?

Computer	13 (18%)
TV	0 (0%)
Cell	45 (64%)
Speakers	0 (0%)
Projector	13 (18%)



Analysis. According to the results obtained on the technological resources used by teachers in class, we highlight the following: 63% (45 students) indicated that the telephone is used as a technological resource, on the other 18% (13 students) mentioned that they use computers as a technological resource and lastly 18% (13 students) indicated the use of projectors as a technological resource that teachers use in class.

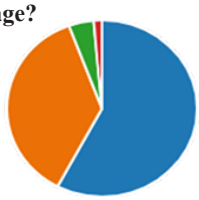
7. Do you, as a student, have the necessary technological tools to use technology in your academic English tasks?

I don´t have	9 (13%)
Yes, but with limitation	38 (54%)
Yes comfortably	24 (34%)

Analysis. According to the results of the survey on whether students have the necessary technological tools to carry out their academic tasks in English, among the most relevant results we have that 54% (38 students) answered yes but in a limited way, while that 34% (24 students) answered that they do have technological tools to carry out their academic tasks in English.

8. Do you consider important the technological resources that support the learning of a foreign language?

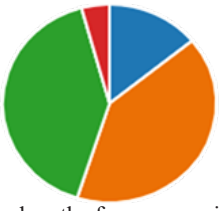
Very important	41 (58%)
Important	26 (37%)
Unimportant	3 (4%)
Nothing important	1 (1%)



Analysis. According to the results obtained on the importance of technological resources that support the learning of a foreign language, among the relevant results we have: that 58% (41 students) mentioned that they consider it very important, while 37% (26 students) consider the use of these tools important.

9. How often does the teacher implement technology in the classroom as a teaching tool?

Many time	10 (14%)
Sometime	29 (41%)
Rarely	29 (41%)
Never	3 (4%)



Analysis. According to the results obtained on the frequency with which the teacher implements technology in the classroom as a didactic tool, among the most relevant results we have that 41% (29 students) indicated that the teacher implements technology only sometimes, another 41% (29 students) said that a few times.

Discussion

Castro (2004) Information technology can be used to compensate for what conventional systems cannot afford to offer. If this is done, the reach of serious education can be extended to reach populations that would otherwise have much poorer quality instruction or none at all. Alternatively, information technology can be used in conjunction with factors that are case and costly, such as highly trained and motivated teachers. Until now the conception of education was somewhat static, because although it is true that technology has gained ground, it was not always used in the classroom or as a tool to improve knowledge. Due to the pandemic, it was necessary to make a radical change, for example with the use of technological tools entering the digital age, taking language teaching to another level.

Barreiro (2021) Education is one of the fields in which the industrial revolution, driven by technological development, exerted a significant impact, as technology allowed the student to freely access more information and therefore more knowledge. Therefore, incorporating technological tools in education brings benefits that promote knowledge and interaction, as well as efficiency and productivity in the classroom, although many people still like to rely on traditional teaching methods, the

possibilities that are open when technology is brought into the classroom are endless.

(Rodríguez-Fórtiz, et al., 2013) Students with special education have difficulties to develop cognitive abilities and acquire new knowledge. They could also need to improve their behavior, communication, and relationships with their environment. The development of customizable and adaptable applications tailored to them provides many benefits as it helps mold the learning process to different cognitive, sensorial or mobility impairments. (Leong Chiew Har Amelia and Mohamad Jafre Zainol Abidin. 2019) As perceived by the learners, there was one obvious and clear effect of using the digital storytelling application on tablets to learn vocabulary. It was observed that the language learning impacts on learners' listening, speaking, reading, writing skills and vocabulary competency resulted from the use of this digital storytelling application. Although many people still like to rely on traditional teaching methods, the possibilities that open when technology is brought into the classroom are endless, learning based on technological tools adapted to the learning styles of each student in order to develop the different abilities.

Conclusions

In the present investigation it was possible to discover that the roles that students play in the English learning process vary according to the activities where they participate actively with the use of technological tools in the teaching of the English language adapted to each rhythm. and students' learning style in the construction of knowledge, causing the subjects to carry out a process where a series of skills are displayed for their educational performance.

The theoretical systematization carried out in this work has allowed us to revalidate the importance of technological tools adapted to each rhythm and style of learning in the area of English in high school students.

The new technological tools are very important when it comes to motivating students in their daily learning, and this ranges from the use of computers to mobile devices, in this institution they do not have an English laboratory, therefore it is the closest they come to mobile technology are phones.

Regarding digital skills, teachers are not able to interact through different technological platforms or manage digital identity, noting deficiencies in access to technological resources and teacher training.

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