ISSN-e: 2444-2887

Spanish as a foreign language instruction in the International Baccalaureate: the role of the application Education Perfect

Daniel Padrón de los Riscos
Professor at St. Joseph´s Institution International (Republic of Singapore)
riscospadron@gmail.com | https://orcid.org/0009-0007-3032-3328

Beatriz Lores-Gómez (corresponding author)
Professor at Universitat Jaume I (Castellón, Spain)
blores@uji.es | https://orcid.org/0000-0001-8487-5960

Abstract

Nowadays, digital technologies play a fundamental role in the field of education. However, as teachers, it is important to reflect on how we can use them more meaningfully to enhance our students' (men and women) skills and foster a greater interest in learning a new language. This study aims to analyze the use of digital technologies as a teaching resource in the instruction of Spanish as a foreign language (SFL) with adolescents studying the International Baccalaureate Diploma Program at an educational institution in Singapore. First, an analysis has been conducted on the reasons why teachers have increasingly incorporated digital technologies as didactic tools in foreign language instruction, based on specialized literature. Subsequently, two didactic proposals have been implemented: one analog (control group) and one digital (experimental group), both in two 11th-grade Spanish Ab Initio classes. Finally, qualitative and quantitative scientific methods have been employed to analyze, compare, and understand the influence of digital and analog resources on the teaching and learning process of a foreign language. The results suggest that a balanced use of analog and digital tools, based on the individual preferences and needs of the students, is of vital importance to maximize the advantages of both resources in Spanish as a foreign language instruction.

Keywords: digital technologies; analog tools; teaching Spanish as a foreign language (SFL); authoring tools; International Baccalaureate; Singapore; secondary school.

Received: 17-07-2024 | Accepted: 11-02-2025 | Published: 06-05-2025

Citation: Padrón de los Riscos, D. and Lores-Gómez, B. (2025). Spanish as a foreign language instruction in the International Baccalaureate: the role of the application Education Perfect. *Tecnología, Ciencia y Educación, 31*, 38-58. https://doi.org/10.51302/tce.2025.22483

ISSN-e: 2444-2887

La enseñanza del español como lengua extranjera en el Bachillerato Internacional: el rol de la aplicación Education Perfect

Daniel Padrón de los Riscos

Profesor en St. Joseph's Institution International (República de Singapur)
riscospadron@gmail.com | https://orcid.org/0009-0007-3032-3328

Beatriz Lores-Gómez (autora de contacto)

Profesora en la Universitat Jaume I (Castellón, España)
blores@uji.es | https://orcid.org/0000-0001-8487-5960

Extracto

Hoy en día, las tecnologías digitales son fundamentales en el ámbito educativo. Sin embargo, como docentes, es importante reflexionar sobre cómo podemos utilizarlas de manera más significativa para potenciar las habilidades de nuestros estudiantes (hombres y mujeres) y despertar un mayor interés en el aprendizaje de una nueva lengua. En este estudio, se pretende analizar el uso de las tecnologías digitales como recurso didáctico en la enseñanza del español como lengua extranjera (ELE) con adolescentes que estudian el Programa del Diploma de Bachillerato Internacional en un centro educativo en Singapur. En primer lugar, se ha realizado un análisis de las razones por las cuales los docentes han ido incorporando cada vez más las tecnologías digitales como herramientas didácticas en la enseñanza de lenguas extranjeras, basándose en literatura especializada. Posteriormente, se han llevado a cabo dos propuestas didácticas: una analógica (grupo de control) y otra digital (grupo experimental), las cuales se han implementado en dos clases de grado 11 de Spanish Ab Initio. Por último, se han empleado métodos científicos tanto cualitativos como cuantitativos con el objetivo de analizar, comparar y comprender la influencia de los recursos digitales y analógicos en el proceso de enseñanza y aprendizaje de una lengua extranjera. Los resultados sugieren que un uso equilibrado de herramientas analógicas y digitales, basado en las preferencias y necesidades individuales de los estudiantes, es de vital importancia para aprovechar al máximo las ventajas de ambos recursos en la enseñanza del español como lengua extranjera.

Palabras clave: tecnologías digitales; herramientas analógicas; enseñanza de español como lengua extranjera (ELE); herramientas digitales; Bachillerato Internacional; Singapur; educación secundaria.

Recibido: 18-05-2024 | Aceptado: 19-12-2024 | Publicado: 06-05-2025

Cómo citar. Padrón de los Riscos, D. y Lores-Gómez, B. (2025). La enseñanza del español como lengua extranjera en el Bachillerato Internacional: el rol de la aplicación Education Perfect. *Tecnología, Ciencia y Educación, 31*, 38-58. https://doi.org/10.51302/tce.2025.22483

Sumario

Nota: los autores del artículo declaran que todos los procedimientos llevados a cabo para la elaboración de este trabajo de investigación se han realizado de conformidad con las leyes y directrices institucionales pertinentes. Asimismo, los autores del artículo han obtenido el consentimiento informado (libre y voluntario) por parte de todas las personas intervinientes en este estudio de investigación.

1. Introduction

The first quarter of the 21st century has been marked by the expansion and appropriation of digital technology in all areas of human society (Area and Adell, 2021). This includes education, where the pedagogical use of technology has been incorporated both inside and outside the classroom, enabling more effective communication between teachers and students, as well as new forms of teaching and student assessment (Beltrán Poot *et al*., 2015).

It is recognized that technology has the potential to significantly improve education and learning. However, it is emphasized that it should be used responsibly, integrating it with appropriate pedagogical strategies to meet the needs of students (Vargas-Murillo, 2020). During the COVID-19 pandemic, school closures prompted a metamorphosis in the use of instructional materials and teachers' digital competence, accelerating the pedagogical transformation towards the digital realm (Area and Adell, 2021).

Technology has the capacity to exponentially enhance education and learning. Numerous research studies and educational experiences (Castro *et al.*, 2007; Mena Octavio, 2021; Pizarro Chacón and Cordero Badilla, 2013) have demonstrated the multiple benefits of digital technologies in teaching practices, highlighting their ability to generate meaningful learning in students. Digital technologies propose innovative techniques that offer an ideal opportunity to advance the development of an inclusive society with quality education.

However, in many educational environments, the enormous potential of digital tools that can facilitate teaching and learning processes is still not fully utilized. Despite having these tools, they are not used comprehensively, as educators do not adequately respond to individual preferences and needs of students to achieve predetermined educational objectives. According to Díaz Barriga (2008), it is important to consider that digital technologies alone do not guarantee inclusion and social equity, nor do they ensure quality or innovation. Additionally, in many cases, technology is used to reproduce or enhance traditional teaching models, making it essential to develop new theories of educational design that use technology according to current needs. This way, useful knowledge can be acquired to address relevant problems with a socially significant approach.

1.1. Justification

The IB school in Singapore, where this study took place, distinguishes itself through its innovative approach and leadership in implementing new educational practices. These efforts

aim to ensure that students are well-prepared to confront the challenges of the contemporary world. Nevertheless, the emergence of the COVID-19 outbreak necessitated an adaptation to a new environment of distance learning. In this setting, online technological tools became indispensable resources, guaranteeing the provision of quality education and fostering student advancement within the confines of the novel situation.

This situation sparked a profound interest in assessing and dissecting the impact of technology on the processes of teaching and learning foreign languages. The primary goal is to enhance linguistic skills, enabling students to better prepare for an increasingly interconnected world (Mileva *et al.*, 2012). Proficiency in a foreign language remains a central educational goal in contemporary society, providing students with a holistic education that equips them to meet the challenges of an open and globalized world, as underscored by Sagredo Santos (2008).

Teaching foreign language holds great importance within the social and educational context. Throughout history, various methodological changes have been made to promote the development of students' competencies in the target language. In this regard, as Martín Sánchez (2009) maintains, the evolution of teaching methods has been crucial in achieving successful learning:

> The search for the ideal method is what Psycholinguistics has been doing for many years, which highlights the inexorable relationship between educational success or failure and the choice of an appropriate method (p. 67).

In recent years, there has been a notable shift in the approach to teaching foreign languages. Previously, the primary focus was on finding the most effective methodology to address learning challenges. Today, there is a trend towards a more communication-oriented approach, placing emphasis on the emotional aspects of language acquisition (Lin, 2008).

According to Martín Sánchez (2009), a key educational goal for foreign language teachers is to help students achieve complete communicative proficiency. This involves mastering the language, understanding the context of communication, and considering individual characteristics, needs, learning styles, conditions, and communicative intentions.

To develop this communicative competence, teachers need to implement strategies that allow students to interact in real-life situations and contexts (Martín Sánchez, 2009). However, a significant challenge faced by students learning a foreign language is the lack of exposure to authentic contexts that would enable them to enhance their language skills by expressing themselves in the target language (Garau, 2008).

In this regard, Delgado *et al.* (2009) argues that the increasingly widespread use of digital technologies provides access to a world full of up-to-date and easily accessible information, facilitating the creation of a learning environment tailored to innovative didactic strategies

in the classroom. This type of didactic approach adapts to the students' learning pace and creates space for cognitive, creative, and enjoyable development in the areas of the second or foreign language curriculum. Furthermore, digital technologies enable the development of language skills, such as reading comprehension and textual production, contributing to strengthening students' communicative competence (Castro *et al.*, 2007).

1.2. Theoretical framework

1.2.1. Teaching SFL

The teaching of SFL has undergone significant changes in its methodologies over time, according to Martín Sánchez (2009) in his work «History of foreign language teaching methodology». From the early forms of teaching to the present day, the evolution of SFL methodologies has been constantly changing with the goal of improving learning and adapting to the needs of students.

According to the same author, initially, the linguistic objective was to train students for reading and analyzing literature in the target language. The usual procedures focused on deductive grammar analysis, lexical, morphological, and syntactic memorization, the translation of literary texts, contrastive analysis, and other methods that primarily emphasized grammar instruction.

> In the early decades of the 20th century, SFL teaching was centered on grammar and rote memorization of rules and structures. This methodology was based on translation and a deductive approach, which meant that grammar was taught and then applied to oral and written production. This methodology focused on form rather than content, resulting in mechanical and impractical learning (Martín Sánchez, 2009, p. 62).

Before, in the 1970s, the methodology evolved towards a more communicative approach in SFL teaching. Communicative approaches emerged in Europe as a response to the structural methods mentioned earlier. This methodology focused on the practical use of language and the development of real communicative skills. It encouraged interaction among students and prompted them to use Spanish in real situations. This methodology emphasized content rather than form, allowing for better language comprehension and improved communication skills.

Today, the teaching of SFL is at a critical moment in its development and evolution, aiming to achieve quality education. The evolution of the communicative approach has shifted the perspective towards placing the learner at the center of learning. A methodological framework has been adopted that considers the students' needs and their communicative intent.

The educational goal of the SFL teacher is to help their students achieve full communicative competence, which entails not only linguistic competence but also an understanding of the context in which communication occurs and individual student characteristics, such as their learning styles and learning conditions (Martín Sánchez, 2009).

1.2.2. Learning Spanish in the International Baccalaureate Program

In this section, we will focus on key aspects that allow us to delve deeper and gain a more detailed understanding of the circumstances in which this research takes place. To do so, we will refer to the official IB document «What is IB education?» (International Baccalaureate, 2020) where it is found that established in 1968, the IB's mission is to deliver a challenging and well-rounded education, support geographic mobility, and encourage mutual understanding and intercultural respect. The program aspires to provide a holistic education that transcends disciplinary and cultural limits, fostering critical thinking and the formation of meaningful connections.

Multilingualism is a key aspect of the program, and students have the option to learn Spanish as a second language. Through the learning of Spanish, students acquire important language and cultural skills, enabling them to communicate in a new language and gain a different perspective on the culture and history of Spanish-speaking countries, contributing to the development of informed and engaged global citizens.

1.2.3. Integration of educational technology in teaching a foreign language

Learning a foreign language involves great effort and is a process that can be complicated and often frustrating. Throughout history, language learning has been closely related to the use of available technology at each moment, with the aim of facilitating the process and reducing the time required to achieve satisfactory communicative competence (Pérez *et al*., 2020; Trujillo *et al*., 2019; Trujillo *et al*., 2022).

According to Rodríguez Pérez's work (2016), the integration of technology in the language teaching classroom began in the 1960s with the use of «teaching machines», an ambitious project to teach subjects through digital computers. From there, experimentation with the use of technology in language classes began. In the 1970s, research on interaction in communication and content structuring was further explored. However, it was not until the 1990s that there was a significant advancement in technological possibilities in this field.

Today, the incorporation of technology in the language classroom, especially after the COVID-19 pandemic, has become inevitable. Currently, it is unthinkable for educational institutions not to have educational platforms, digital resources, and a digital strategy, or even

a comprehensive digital project. Therefore, the question is no longer whether we should use technology, but how we can achieve optimal results through it and how to do it effectively (Trujillo *et al.*, 2022).

In line with the above, Valencia-Galeano and Serrano Sánchez (2020) point out that teaching foreign languages faces a significant challenge due to the growing interest in new teaching methods. The mere use of books, blackboards, and projectors is no longer sufficient, as advances in physical media derived from digital technology are allowing exploration of innovative educational methodologies and resources that provide more personalized and tailored teaching to individual student needs, aligned with current educational practices. According to Trujillo *et al.* (2022), the educational environment has experienced an integration of tools such as emails, chats, instant messaging, forums, websites, social profiles, and wikis, which have become fundamental elements unlikely to disappear.

According to Salinas Ibáñez (2008), if our goal is to make full use of the potential offered by educational technology and create virtual teaching-learning environments that are effective in terms of knowledge construction, it is necessary to make decisions in line with appropriate didactic strategies. For this purpose, Ferreira (2022) proposes the construction of a model that includes face-to-face classes in electronic learning contexts mediated by «authoring tools» to improve language learning. Specific management tools for educational purposes, such as the so-called «authoring systems» oriented to the educational field, are computer applications that allow for a multimedia teaching-learning process (Níkleva and Ogáyar, 2012).

There are several easily accessible and user-friendly authoring tools that function as servers for various types of courses, enabling language teaching in different modalities, combining traditional face-to-face classes with technological resource support. However, we have chosen the Education Perfect platform to carry out our study since it is one of the most widely used and comprehensive platforms for teaching SFL. This platform constitutes a viable and accessible alternative to support language students with individual and collaborative activities that effectively complement their work both inside and outside the classroom.

The availability of educational resources on the web is extensive and can enrich our work as teachers. According to De Juan González (2012), there is a wide range of educational material available, including references such as dictionaries, encyclopedias, and manuals. Additionally, numerous resources specifically designed for teaching are available in various formats, such as interactive exercises, audio and video recordings, texts, images, among others. These materials range from exercises and quizzes of various types to texts and comics, including concept maps and vocabulary cards.

The availability of technological resources offers numerous advantages to enrich the experience of teaching foreign languages, particularly in facilitating access to authentic materials. However, as emphasized by Durán Chinchilla *et al.* (2021), the starting point for

teachers should be to guide the work in these contexts and ensure that the integration of digital tools and resources in the teaching-learning process has a clear pedagogical purpose. Furthermore, it is essential for students to understand that these tools are a means to acquire knowledge and that they learn to use different techniques to promote their learning and increase their autonomy in the use of online platforms and resources (Ferreira, 2022).

1.2.4. Development of competencies in foreign languages and digital technologies

In current education, digital technologies are frequently used, especially in teaching foreign languages, with the aim of enhancing language skills. digital technologies can be beneficial in improving students' reading comprehension by providing appropriate texts at their level related to the content taught in each session. Students can access a wide range of authentic texts in the target foreign language, such as news, magazine articles, blogs, e-books, research documents, and multimedia texts with images that can aid in understanding the overall message. Interactive tools, comprehension exercises, and text-to-speech programs are also available to enhance reading comprehension. Furthermore, students can work on their reading comprehension independently, allowing them to be more autonomous and focus on other skills (Simons, 2010).

In foreign language learning, digital technologies offer a variety of tools to enhance listening comprehension. Students can practice listening to words, phrases, and complete texts, and compare their pronunciation with recorded examples that match their level and the content being taught in each session. Additionally, digital technology tools, such as news articles, magazine features, blogs, e-books, research documents, and multimedia texts with images, videos, and audio, can be helpful in grasping the overall message. Electronic devices can also assist in addressing language learning difficulties, such as dyslexia (Simons, 2010).

In terms of written expression, digital technologies provide several tools that can be utilized for development, such as online platforms, word processors, blogs, discussion forums, social networks, and grammar exercises with correction tools for grammar and spelling. However, an overreliance on digital technologies may lead students to depend too heavily on these tools, potentially hindering their traditional efforts to enhance their writing skills.

Furthermore, as highlighted by Kovač and van der Weel (2020), it is crucial to reflect on how various technologies and tools influence our cognitive and emotional engagement with digital environments compared to analog or paper-based ones. The same authors suggest that excessive technology use might restrict students' critical and creative thinking:

> Experimental research in psychology and neuroscience, focusing on the associations between fine motor processes and cognitive outcomes, tends to find that handwriting, not typing, allows for better identification and recall (p. 33).

Lastly, in terms of oral expression, digital technologies can also be valuable for practicing oral production through video conferences, voice chats, recordings, and simulations. Moreover, voice recognition applications can greatly assist in improving pronunciation and providing real-time feedback, cultivating habits of improvement for both oral expression and comprehension.

However, Simons (2010) notes that there are still limited solutions for assessing oral skills through technology, underscoring the vital role of the teacher in language instruction. Although digital technologies can furnish foundational materials to encourage oral expression at a later stage.

2. Objetive

The general objective (GO) of this research study is the following:

GO. Compare the effectiveness of learning Spanish as a second language among secondary school students who use the traditional method versus those who employ digital technologies in their learning process.

3. Method

In this study conducted from October 28th to December 2nd, 2023, we carried out the development of the same didactic unit with two groups of 11th-grade students who are taking SFL subject. The main difference between the two groups lies in the resource used to conduct the sessions. The first group used the online platform Education Perfect as the primary resource, which involved an intensive use of digital tools as the guiding thread of the teaching-learning process. On the other hand, the second group primarily worked with a printed notebook, limiting the use of analog resources as an educational tool throughout the unit.

The implementation of a common didactic unit for both groups allowed us to efficiently analyze the influence of digital and analog tools during the session development. Furthermore, to achieve the established objectives of this study, both quantitative and qualitative data were collected through the use of different instruments such as questionnaires, observations, interviews with focus groups, and pre- and post-tests. This way, we were able to compare and examine the students' perception regarding analog and digital resources, aiming to evaluate the benefits and drawbacks of their utilization in acquiring and enhancing communicative skills in foreign language learning.

The following table outlines the specific steps and timeline followed during the research process (see table 1). Each step describes a key phase of the study, from the initial preparation and group assignment to data collection, analysis, and final reporting.

Table 1. **Steps and timeline followed during the research process**

Step	Description	Duration
1. Contextualization	Setting the stage for the research, including school and sample description (location, demographics).	October 1-16, 2022
2. Group assignment	Formation of the experimental and control groups (digital tools vs. traditional methods).	October 16-27, 2022
3. Initial pretest	Administration of pretest to assess prior knowledge and skills in Spanish.	October 28-31, 2022
4. Implementation of didactic unit	Execution of the didactic unit «La Vida Sana» with both groups using their assigned resources.	October 31-November 30, 2022
5. Ongoing observations	Conducting direct and participant observations of classroom dynamics and student engagement.	Ongoing throughout the study period
6. Surveys/questionnaires	Students complete questionnaires on their experience with the resources and satisfaction levels.	November 28-December 1, 2022
7. Final posttest	Administration of the posttest to evaluate the impact of resources on learning outcomes.	November 26, 2022
8. Semi-structured interviews	Focus group interviews with selected students from each group to discuss their experiences and views.	November 26-29, 2022
9. Data analysis	Quantitative and qualitative data analyzed to compare the effects of digital vs. analog resources.	January 1-June 30, 2023
10. Conclusion and reporting	Summarization of findings, conclusions, and formulation of potential hypotheses.	July 1-August 31, 2023

Source: own production.

3.1. Contextualization

This study is conducted in a school located in Singapore, a globally renowned city-state for its cultural diversity, where various ethnicities, religions, and nationalities coexist harmo-

niously. The official languages of the country are English, used in education, government, and business, Malay, Mandarin, and Tamil, which are employed among the different ethnic groups.

The selected educational institution for this study is an international school that provides education to both local and foreign students from grades 7 to 12. Its academic program includes the well-regarded IGCSE (International General Certificate of Secondary Education) program for grades 7 to 10, and the International Baccalaureate Diploma Program for grades 11 and 12. It has a staff of over 200 teachers and a diverse student body of 1,289 young individuals from 40 different nationalities.

For this study, a sample of 29 students, aged 16 to 18, was selected from two balanced grade 11 groups within the IB Program (see table 2). These students were divided into two groups: experimental and control.

The primary reason for selecting this sample was that it was the only grade with two balanced groups, as the other students (44 in total) from grades 10 and 12 did not exhibit the same balance. Additionally, these two grade 11 groups are particularly notable because, aside from being balanced, they are experiencing their first year of exposure to SFL. This makes the results regarding the impact of our variables potentially more significant and suitable for comparison. Consequently, the selection process was intentional, focusing on students who actively engaged with both digital and paper-based materials in order to gain a deeper understanding of their learning experiences and the study's context.

Table 2. **Student distribution by group and gender**

Group	Male	Female	Total
Experimental	8	7	15
Control	5	9	14
Total	**13**	**16**	**29**

Source: own production.

In the present study, two groups were formed to evaluate the effectiveness of learning Spanish as a second language among secondary school students in Singapore. The experimental group, which uses digital technologies in their learning process, consists of 15 students: 8 males and 7 females. On the other hand, the control group, which employs the traditional teaching method, includes 14 students: 5 males and 9 females. In total, the sample includes 29 students.

3.2. Research approach

Considering the complexity of the object of study and the research context, a mixed approach has been chosen for its development. In the educational field, mixed-method designs are increasingly applied to address research topics as they offer an excellent alternative to implement different procedures to obtain more detailed results, provided that the understanding of the phenomena under study is formalized, developed, and reflexively explained, especially when dealing with complex fields involving human beings and their diversity (Pereira Pérez, 2011).

According to Aguilar Gavira and Barroso Osuna (2015), the main advantage of this approach is the possibility of triangulation. Triangulation is a fundamental concept for the development of research projects that combine quantitative and qualitative methodologies. Forni and Grande (2020) refer to the use of triangulation in mixed designs as a crucial element to implement different data collection strategies to compare a specific set of observations with others, addressing the same phenomenon.

Considering the above, our research is framed within a convergent parallel design since the conditions of our research favor the adoption of this design. Among these conditions are the following (Arévalo-Chávez, *et al.*, 2020): the available time for research is very limited. The two phases, qualitative and quantitative, are developed simultaneously. Both qualitative and quantitative data are equally important for the project.

3.3. Research scope

Our study has followed the quasi-experimental design, in which an experimental group (EG) receiving the treatment or stimulus (independent variable) is established, and a control group (CG) serves as a comparison and does not receive the treatment. This allows us to observe the reactions or effects produced on the dependent variable (Arias, 2012). To measure the effect of the independent variables (use of technology and analog materials) on the dependent variable (knowledge acquisition, satisfaction, beliefs, and opinions), the effect was observed and measured through different data collection techniques: pretest and posttest, interviews, direct observation, and questionnaires.

Based on this premise, the present work falls within a descriptive method with the objective of seeking a better understanding of the use of digital technologies and analog resources within interactive dynamics in the classroom and from the student´s perspective in their natural context, without intentional provocation by the observer (Veiga de Cabo *et al.*, 2008).

Finally, it is important to note that, due to the scope, our study does not begin with an initial hypothesis. However, by the end of our proposal, we will seek to formulate a

hypothesis that aims to characterize the phenomenon of the study and relate it to the previously stated objectives and variables (Ramos Galarza, 2020).

3.4. Instruments for data collection

A quasi-experimental design allows the researcher to gather a series of objective and reliable data through different techniques and instruments that help us reflect the reality of our study object (Hernández Sampieri *et al.*, 2014).

Aguilar Gavira and Barroso Osuna (2015) indicate that the combination of qualitative and quantitative research methods in measuring the same object of analysis is complementary since multiple triangulation allows us to leverage the strengths of both methods, cross data, and compare results to reach more precise conclusions.

The techniques used for data collection in this research are as follows:

- **Direct observation.** Direct and participant observation, according to the definition by Rekalde *et al.* (2013), is an interactive method of gathering information involving the observer's participation in the observed events. This allows obtaining perceptions of the studied reality that would be difficult to achieve without emotional involvement.
- **Self-administered questionnaire.** For the research work, a structured survey on a Likert scale was applied. This scale «allows achieving high levels of reliability and requires fewer items compared to others to achieve the same results» (Ospina Rave *et al.*, 2005, p. 19).
- **«Semi-structured» interview.** Under the premise that students have valuable contributions to offer, the technique of focus groups aims to foster discussion, comments, and clarification of the group's beliefs and thoughts regarding complementary independent variables of the study. This technique provides the advantage of accessing deeper information and generating data and ideas that would otherwise be difficult to obtain (Hamui-Sutton y Varela-Ruiz, 2013; Silveira Donaduzzi *et al.*, 2015).

To measure the influence of the dependent variables: the use of digital technologies and analogical resources, a pretest and posttest evaluation was conducted with the aim of measuring the progress generated by the influence of these variables in the learning process during the proposed didactic unit: «La vida sana» («Healthy Living») in the Spanish Ab Initio subject within the IB program, with two groups of 11th-grade students (see table 3).

Table 3. **Distribution of interviews. Focus group**

	Group	Number of students
Interview 1	Experimental	4
Interview 2	Control	5

Source: own production.

4. Results

In this section we address the results from three categories: Category 1 (Acquisition of knowledge and improvement of skills), Category 2 (Satisfaction with the resource used) and Category 3 (Beliefs and opinions).

4.1. Knowledge acquisition

Students who used the Education Perfect platform mentioned difficulties in highlighting unknown words and following the reading with their finger, which negatively affected their reading experience and comprehension.

On the other hand, the group that used analog resources faced challenges regarding class time management and access to resources, but they developed alternative strategies to understand the text, which they considered beneficial in the long run. Most students in both groups prefer writing on paper because of the comfort it provides, the ability to highlight and plan their responses better, as well as the ease of remembering information.

However, the digital technologies group highlighted the usefulness of functions such as recording and listening to their responses to improve their oral expression. Overall, both groups had a positive experience using digital technologies and printed resources to enhance their grammatical competence as they provided quick and convenient access to grammatical resources, which helped them understand the structure of grammatical concepts. Regarding the acquisition of new vocabulary, students showed a preference for using digital technologies, as they believe in its effectiveness and speed compared to paper resources.

4.2. Satisfaction

Both groups expressed satisfaction with the design and activities, suggesting that an appropriate design of educational resources can have a positive impact on students' learn-

ing and efficiency. In the digital technologies focus group, some participants expressed discomfort with not being able to upload their activities to the platform or make annotations when working with readings; however, these limitations did not affect their communication and interaction within the class group.

Furthermore, students showed a preference for using physical materials, such as textbooks or notebooks, instead of online resources, as they help them avoid distractions and provide a more structured and organized view of the content.

Regarding the received feedback, it was found that the Education Perfect platform allowed for an analysis of students' progress, control over the time dedicated to each activity, and provided more personalized feedback, enabling them to progress at their own pace. The Education Perfect platform proved to be more effective in motivating students compared to printed resources because the interactive activities contributed to creating a more joyful and stimulating environment, fostering a collaborative and enriching atmosphere.

Using the Education Perfect platform allowed for the integration of educational games and simulations to promote concentration, stimulate planning and memory, and practice language skills in a more interactive and playful manner.

4.3. Beliefs and opinions

Although the results indicate a general preference for the use of digital technologies compared to analog resources due to the wide variety of online educational resources and the ease of searching for words and relevant information, some students mention that the abundance of online resources can be overwhelming, and they prefer paper resources as they can easily find information in one place.

Additionally, the majority of respondents agree that both printed resources and digital technologies are important in their learning process and contribute to their progress. Students value the platform as organized, convenient, and efficient, while also recognizing the lasting benefits of printed resources in effectively familiarizing themselves with vocabulary and grammatical structures.

5. Discussion

The integration of digital technologies in education has emerged as a transformative force, particularly accentuated by the exigencies of the COVID-19 pandemic. This shift has underscored the potential of digital technologies to enhance learning experiences, foster student engagement, and promote individualized learning strategies (Area and Adell, 2021;

Vargas Murillo, 2020). However, despite the promising advantages, the deployment of digital technologies in educational settings has not been universally optimal (Cuevas Montero *et al.*, 2024). Many educators have yet to fully leverage the capabilities of these technologies, often resorting to traditional teaching methods rather than adopting innovative pedagogical strategies (Díaz Barriga, 2008).

The study conducted at the IB school in Singapore provides valuable insights into the comparative effectiveness of digital and traditional learning methods for teaching SFL. The results indicate that students using the Education Perfect platform faced challenges related to text interaction, such as difficulty highlighting unknown words or following the text with their finger (Durán Chinchilla *et al.*, 2021). Conversely, those using analog resources encountered issues with time management and resource access but developed beneficial alternative strategies for text comprehension. This contrast highlights a significant aspect of learning: while digital tools offer convenience and immediate access to information, traditional methods may cultivate deeper engagement and retention through physical interaction with the text.

Satisfaction levels among students using both methods revealed interesting dynamics. The design and activities of both digital and analog resources received positive feedback, suggesting that well-constructed educational materials, regardless of the medium, can effectively support learning (Salinas Ibañez, 2008). The digital platform, Education Perfect, was noted for its ability to provide personalized feedback, track progress, and integrate interactive elements such as educational games, which enhanced motivation and engagement. However, some students expressed discomfort with the limitations of digital platforms, such as the inability to upload activities or annotate readings directly on the platform (Trujillo *et al.*, 2022). This indicates a need for more flexible and user-friendly digital tools that can replicate the tactile and interactive benefits of physical materials.

The preferences of students highlighted a nuanced perspective on the use of digital technologies in education. While there was a general preference for digital tools due to their efficiency and the vast array of resources available, some students found the abundance of online resources overwhelming and favored paper-based materials for their simplicity and ease of use (Rodríguez Pérez, 2016). This dichotomy suggests that a hybrid approach, combining the strengths of both digital and traditional methods, may be the most effective strategy for fostering comprehensive learning experiences. Such an approach can cater to diverse learning styles and preferences, ensuring that all students benefit from the advantages of both modalities.

The findings emphasize the importance of integrating digital technologies with appropriate pedagogical strategies. The effective use of digital tools requires not only technological proficiency but also a thoughtful approach to instructional design that considers the unique needs and preferences of students (Ferreira, 2022). Educators must balance the immediacy and interactivity of digital resources with the structured and reflective nature of traditional methods to create a holistic learning environment. Moreover, continuous evaluation of the impact of digital technologies on learning outcomes is relevant to refining and optimizing their use in educational settings (Area Moreira, 2010).

6. Conclusions

Based on the analysis carried out, we can conclude that the balanced use of analog and digital tools in the teaching and learning process of a new language, such as Spanish, is relevant for learning. While digital tools offer advantages in terms of organization and personalized feedback, print resources challenge students to reflect more on what they are learning and express their ideas in a more elaborate way. As noted, one of the main advantages of digital tools is their ability to provide an interactive and dynamic environment. Apps and «creation tools» allow students to practice language skills through games, interactive exercises, videos, and multimedia activities. These digital resources allow for immediate feedback and personalized monitoring, making it easy to correct grammatical and pronunciation errors and allowing students to progress at their own pace. Additionally, access to online resources has expanded the possibilities for practice and exposure to the target language, as students can access authentic materials such as articles, podcasts, and videos in Spanish, helping them develop listening and reading comprehension skills.

On the other hand, based on the findings in this research, it is observed that printed resources such as textbooks, notebooks, printed materials or physical dictionaries continue to be valuable in the teaching and learning process of Spanish. These resources have provided a tangible, sensory experience, which has proven to be beneficial for some students. By interacting with the physical material, students have had the opportunity to highlight, annotate, and write exercises by hand, promoting a stronger cognitive connection with the content and facilitating memorization and retention of information. In addition, printed resources have also promoted autonomy and independence in learning. Students have been able to carry printed materials with them and use them anytime, anywhere without the need to use the Internet or other electronic devices. This has provided them with flexibility and has allowed them to practice and review Spanish autonomously, contributing to more consistent and self-directed learning.

Finally, it is necessary to note that the preference for analog or digital tools may vary depending on the individual needs and preferences of students. Some students have been able to feel more motivated and engaged with the use of digital technologies, while others have been able to find more benefits in physically interacting with printed resources. Therefore, it is confirmed that the teacher's role is fundamental to offer a variety of options and allow students to choose the tools that best suit their learning style and personal objectives, promoting greater inclusion both inside and outside the classroom.

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Daniel Padrón de los Riscos. Docente de español en la Institución Internacional de San José (Singapur) desde 2020 hasta la actualidad, donde integra las tecnologías educativas para mejorar el aprendizaje de idiomas. Máster en Tecnología Educativa: E-Learning y Gestión del Conocimiento de la Universitat Rovira i Virgili (Tarragona, España). Máster en Lengua y Literatura Españolas de la Universidad de Jaén (España). Grado en Maestro en Educación Primaria (Mención en Educación Física) por la Universidad de La Laguna (España). Su enfoque educativo se centra en adaptar métodos pedagógicos innovadores que aprovechan tanto recursos digitales como tradicionales para promover el desarrollo lingüístico y cultural de los estudiantes.

Beatriz Lores-Gómez. Doctora en Tecnología Educativa por la Universidad CEU Cardenal Herrera (Valencia, España). Doble licenciatura en Periodismo y Publicidad y Relaciones Públicas y Máster en Formación del Profesorado. Actualmente, es docente en diversas universidades, donde imparte asignaturas de grado y de máster relacionadas con la tecnología educativa, la competencia digital y la didáctica de la lengua española. Su investigación se centra en la competencia digital, la formación docente y la didáctica. Es profesora acreditada por la ANECA (nivel profesora contratada doctora) y ha realizado diversas estancias de investigación nacionales e internacionales.

Contribución de autores. D. P. R. y B. L-G. han participado a partes iguales en la elaboración de este estudio de investigación.