El Guiniguada, **ONLINE FIRST, 2026**, pp. 01-14
Print ISSN: 0213-0610 – **eISSN: 2386-3374**

Servicio de Publicaciones y Difusión Científica
Universidad de Las Palmas de Gran Canaria
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Servicio de Publicaciones y Difusión Científica (SPDC) de la Universidad de Las Palmas de Gran Canaria
Facultad de Ciencias de la Educación
Las Palmas de Gran Canaria, España

El Guiniguada

(Revista de investigaciones y experiencias en Ciencias de la Educación)

eISSN: 2386-3374

10.20420/ElGuiniguada.2013.333 (doi general de la revista)

Journal information, indexing and abstracting details, archives, and instructions for submissions:
http://ojsspdc.ulpgc.es/ojs/index.php/ElGuiniguada/index

Impact of Didactic Subtitles for the Deaf and Hard-of-Hearing in Foreign Language Learning

Impacto del subtitulado didáctico para sordos en la enseñanza de lenguas extranjeras

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DOI (en Sumario/Título, en WEB de la Revista)
Recibido el 02/07/2025
Aceptado el 26/10/2025
ONLINE FIRST, 20/01/2026

El Guiniguada, **ONLINE FIRST, 2026**, pp. 01-14
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ABSTRACT

This article aims to determine whether it is possible to improve the Communicative Language Competence in all or some language skills (oral reception, written reception, oral production, written production and mediation) through an intervention based on three Lesson Plans (LPs) of Subtitling for the Deaf and Hard-of-Hearing (SDH), as one of the modes of Didactic Audiovisual Translation (DAT) for foreign language learning. The method applied in this study involves a quantitative analysis using descriptive statistical data: the Wilcoxon Signed-Rank Test and Mediation Analysis using PROCESS with Bootstrapping. This study aims to i) analyse the correlation between the initial Test of Integrated Skills (ITIS) and the Final Test of Integrated Skills (FITIS, and ii) find out to what extent the SDH activities as mediation variable impact on the results between the ITIS and the FITIS. This study was conducted among 167 participants from six Spanish universities during the academic year 2021-2022. The results obtained are consistent with previous research published within the TRADILEX project. Furthermore, these data demonstrate progress in learning across all skills, with a particular emphasis on improvements in oral production. Therefore, in the discussion and conclusions, the combined use of SDH with other DAT modes is recommended for these skills.

KEYWORDS

BILINGUAL EDUCATION (BE), COMMUNICATIVE SKILLS, DIDACTIC AUDIOVISUAL TRANSLATION (DAT), LANGUAGE TEACHING, SUBTITLING FOR THE DEAF AND HARD-OF-HEARING (SDH)

RESUMEN

El presente artículo analiza el impacto del subtitulado didáctico para sordos (SpS) en la enseñanza de lenguas extranjeras para mejorar la Competencia en Comunicación Lingüística (CCL) en todas o algunas de las destrezas de la lengua (comprensión oral, comprensión escrita, producción oral, producción escrita y mediación) como una de las modalidades de la Traducción Audiovisual Didáctica (TAD). El método empleado para este estudio consiste en un análisis cuantitativo en el cual se analizaron los datos por medio de un análisis estadístico descriptivo, el Test de Wilcoxon y un análisis de mediación utilizando PROCESS con remuestreo. Los resultados muestran una mejora en el aprendizaje de todas las destrezas, destacando especialmente la mejora en la producción oral. En la discusión se demuestra que los resultados concuerdan con las investigaciones publicadas previamente en el seno del proyecto TRADILEX. Asimismo, en las conclusiones se recomienda el uso combinado de la modalidad SpS con otras modalidades de TAD para esta destreza.

PALABRAS CLAVE
DESTREZAS COMUNICATIVAS, EDUCACIÓN BILINGÜE (EB), ENSEÑANZA DE LENGUAS, SUBTITULADO PARA SORDOS (SPS), TRADUCCIÓN AUDIOVISUAL DIDÁCTICA (TAD)

INTRODUCTION

In the current context of globalisation, foreign language learning constitutes a fundamental competence for fostering intercultural communication and enhancing employability. This growing relevance, observable in both social and economic contexts, highlights the importance of becoming proficient in multiple languages. Consequently, within the educational field, the *Common European Framework of Reference for Languages* (CEFR) (Council of Europe, 2001) introduced the concept of *plurilingualism* as the development of an integrated and global communicative competence. Although educational institutions provide opportunities for foreign language learning, the continuity of study and use remain uncertain. Given the increasing engagement with audiovisual media through video-on-demand (VOD) entertainment platforms, it was deemed relevant to emphasise a teaching approach based on the use of video combined with new technologies. In this way, the objective was to foster learners' motivation through the simulation of authentic communicative tasks, thereby promoting meaningful and effective learning (España Palop, 2024 and Correa Larios et al. 2025).

Within this framework, the present study is based on the TRADILEX project (Fernández-Costales, et al., 2023), which consists in determining the extent of improvement in the foreign language learning process after incorporating Audiovisual Translation (AVT) as a didactic tool. To assess this improvement, an Initial Test of Integrated Skills (ITIS) was first administered before the classroom intervention, evaluating the students' initial communicative competence—both receptive and productive, oral and written—through various activities. The classroom intervention was then carried out through Lesson Plans (LPs) based on Didactic Audiovisual Translation (DAT). Finally, students completed a Final Test of Integrated Skills (FITIS), which replicated the format of the ITIS to ensure comparability and maintain the objectivity required for a quantitative study.

This article aims to determine whether it is possible to improve Linguistic Communicative Competence in all or specific language skills (oral comprehension,

written comprehension, oral production, written production and mediation) by means of an intervention (as mediation variable) based on three LPs of Subtitling for the Deaf and Hard-of-Hearing (SDH) as one of the Media Accessibility modes of DAT. As a didactic tool, SDH represents a particularly rich resource, as it requires learners to actively process and reformulate oral and visual information into written text, thereby fostering higher levels of linguistic awareness and cognitive engagement- The SDH approach not only enhances learners' linguistic and translational skills but also contributes to a wider purpose: promoting accessibility and fostering inclusive practices.

The importance of this research for the field lies on the absence of comparative studies of the TRADILEX Project regarding the completion of the LPs and the FITIS. Therefore, this research starts by fulfilling the research gap existing when comparing the results obtained when completing these LPs, with the results obtained when completing the FITIS (Couto-Cantero et al., 2022).

Therefore, the Research Question (RQ) in this article tries to determine to what extent it is possible to improve the Linguistic Communicative Competence in all or some language skills by means of an intervention based on three LPs of SDH. Therefore, to give answer to the RQ we have planned to set out two main objectives (O) as follows:

> O1. To analyse the correlation between the pre-test (ITIS) and post-test (FITIS).
> O2. To find out to what extent the SDH activities as mediation variable impact on the results between the ITIS and FITIS.

State of the art in Audiovisual Translation

Audiovisual media have been used in language teaching since the 1980s (Geddes & Sturtridge, 1982). It has been incorporated into the foreign language classroom to encourage the use of authentic language in class and expose students to real-life communicative situations (Buck, 2010; Ghia & Pavesi, 2016). Thanks to the evolution of Information and Communication Technologies (ICT) (Motteram, 2013), Audiovisual Translation (AVT) has become a tool for teaching a foreign language applicable to the use of backup subtitles, the precursor area of DAT (Duff, 1989). In recent years, the benefits of active subtitling and dubbing tasks in language learning have become evident, leading to a myriad of studies on Didactic Audiovisual Translation (collated in Lertola, 2019; Talaván et al., 2024, and Talaván, 2020).

Research into the didactic possibilities of AVT in foreign language learning spans across various fields, including applied linguistics, translation studies, language teaching, and literature, among others, making DAT an essentially interdisciplinary area of knowledge (Talaván & Tinedo-Rodríguez, 2023).

For the last two decades, research on AVT has provided empirical evidence on the use of DAT as a tool for learning a foreign language (Talaván & Lertola, 2022), specifically in facilitating vocabulary acquisition (Lertola, 2019), enhancing intercultural competence (Borghetti & Lertola, 2014), improving oral production (Ávila-Cabrera, 2022), developing written skills (Ibáñez-Moreno & Escobar, 2021), fostering creativity (Ávila-Cabrera, 2022), boosting motivation in class (Alonso-Pérez, 2019) and even supporting speech therapy (Fernández-Costales et al., 2023).

On the other hand, most of the studies using SDH as a form of DAT have taken a passive approach wherein the learner "consumes" the SDH. More recent research is warranted

to explore the potential benefits of actively using SDH as a form of DAT in which learners actively generate the lines of text for subtitling (Talaván, 2019; Tinedo & Frumuselu, 2023, Couto-Cantero et al., 2023; Bolaños García-Escribano & Ogea-Pozo, 2023).

Since the inception of the TRADILEX project significant progress and research has been appointed in the field of DAT studies and research. The noteworthy findings of the TRADILEX project firmly establish this initiative as a pioneering milestone in advancing the field of DAT studies providing a solid foundation for foreign language teachers interested in DAT (Fernández-Costales et al. (2023).

State of the art in subtitles for the Deaf and Hard-of-Hearing

Subtitles for the Deaf and Hard-of-Hearing (SDH) represent a dynamic field that has evolved significantly over the years to enhance accessibility and inclusivity for individuals with hearing impairments. Originally developed to provide textual representations of spoken dialogue for individuals with hearing disabilities, SDH has expanded to include additional features, such as sound effects, speaker identification, and music descriptions, creating a more immersive and comprehensive viewing experience.

Various countries have established regulations and standards to ensure that television programmes, films, and online content ae accessible to a broad audience (AENOR, 2012). For example, in the United States, the Americans with Disabilities Act (ADA) mandates the inclusion of closed captions for both broadcast and online media. In Spain, the Law on Social Integration of Disabled Persons, the Royal Decree 674/2023 and the Boletín Oficial del Estado 13/2022 establish similar mandates for SDH in television broadcasts and online content. Furthermore, the forthcoming European Accessibility Act (EAA) 2025 will further reinforce the provision of SDH. This increase in the regulations illustrate the growing commitment to accessibility and inclusion across the globe.

Streaming platforms have made substantial investments in SDH to ensure the accessibility of their content to a global audience. Additionally, Spanish television networks and cinemas consistently offer SDH for a diverse range of programming.

International organizations, including the World Health Organization and the United Nations, strongly advocate for enhanced accessibility and inclusivity. In this context, SDH plays a crucial role in efforts to eliminate communication barriers for the Deaf and Hard-of-Hearing communities worldwide. In conjunction with regulatory measures, technological advancements, such as Automated Speech Recognition (ASR) and Natural Language Processing (NLP) technologies, have contributed to improving the accuracy and efficiency of captioning, thereby supporting these accessibility efforts.

Didactic SDH in the TRADILEX Project.

The TRADILEX Project (https://tradit.uned.es/proyecto-tradilex/) was based on the assumption that there was a need to investigate the application of all DAT modes: Subtitling (Sub), Voice-Over (VO), Dubbing (Dub), Audio Description (AD) and Subtitles for the Deaf and Hard-of-Hearing (SDH) from a broader perspective and using a robust research design with a huge sample size and with participants from all over the national territory. Nevertheless, this particular study has been narrowed down to exploring the SDH mode exclusively.

The development of multilingual SDH has broadened access for non-English speaking audiences significantly. Over time, SDH has also evolved to include visual descriptions,

enhancing inclusivity for the Deaf-Blind community. Beyond accessibility, SDH has proven valuable in education by providing essential support for Deaf and Hard-of-Hearing students in diverse learning environments. Consequently, SDH plays a crucial role in fostering language acquisition, improving comprehension, and supporting literacy development. As a result, academic research has naturally turned its focus towards exploring the impact of SDH on language learning, cognitive processing, and user experience.

Over the past five years, numerous projects and didactic proposals have focused on the use of AVT and accessibility modes as pedagogical tools (Tinedo-Rodríguez & Frumuselu, 2023). This growing interest in Didactic AVT (i.e., DAT) has been significantly influenced by members of the TRADILEX project. The TRADILEX project's innovative methodological approach (Talaván & Lertola, 2022) has gained considerable attention within the field of DAT for its integration of diverse AVT modes, including SDH. By focusing on these modes, the project aims to enhance not only linguistic proficiency but also broader communicative competence.

The TRADILEX's focus on SDH and holds significance within the context of inclusive education. By providing training in the teaching and learning of high-quality SDH activities, the project not only encourages language and translation skills but also aligns with the broader goal of promoting accessibility and social inclusion. In fact, educational institutions and media producers increasingly acknowledge the importance of making content accessible to individuals with hearing impairments.

In summary, the TRADILEX project, with its innovative and inclusive approach to DAT has played a pivotal role in advancing interest and awareness in SDH as well as other AVT modes. Its commitment to improving communicative competence and addressing the changing demands of the industry highlights the importance of such initiatives in shaping the future of DAT. By raising awareness among teachers and students, the project contributes to ensuring accessibility and inclusivity in the digital age.

METHOD

Regarding the type of study, this is a quantitative correlational analysis, as this statistical method allowed us to determine the relationship between two and more than two variables. Also, this type of analysis allowed us to examine the extent to which changes in one variable correspond to changes in another variable, and whether this correspondence was statistically significant.

Participants

This study was conducted by one hundred and sixty-seven participants (N = 167). All of them non-native English-speaking participants with a similar English level B1 and B2 (Independent, according to the CEFR) from nine Spanish universities during the academic year 2021-2022: Universidad de Educación a Distancia (UNED), Universidad de Zaragoza (UNIZAR), Universidad de A Coruña (UDC), Universitat de Lleida (UdL), Universidad de Córdoba (UCO) and Universitat Jaume I (UJI). There were three more universities: Universidad de Almería (UAL), Universidad de Castilla la Mancha (UCLM) and Universidad Europea de Madrid (UE) which are not included in this research as participants in those universities did not complete the ITIS, the LPs and the FITIS in full. The mean age of half of the participants was between 18 and 30 years old, while the remaining participants were aged between 31 and 50 or more.

Procedure and instruments

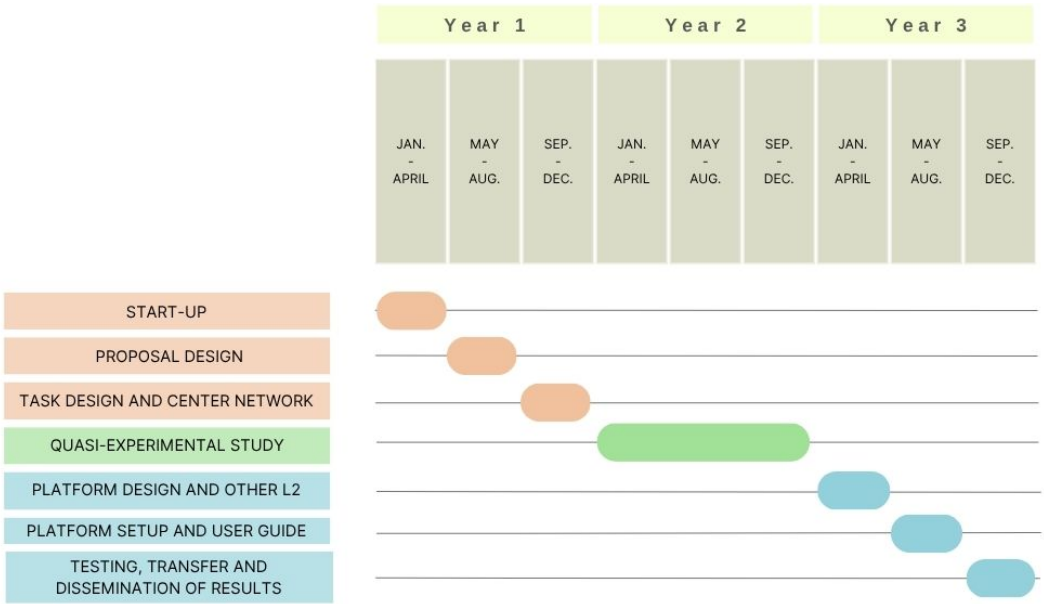
The first step of the TRADILEX Project involved the creation of the research group, the development of the Project website, and a comprehensive literature review. Subsequently, the methodology was designed, and the participating institutions were selected. Afterwards, the tasks were created, and a network of schools and teachers was established to carry out the intervention with students.

Throughout the second year of the Project, a quasi-experimental study was conducted, which included data collection and classification, monitoring of the work carried out in the schools, and the ensuing analysis of the collected data.

During the third and final year, the project's web platform was designed and implemented, the methodology was applied to languages other than English, and pilot testing was conducted. Finally, weaknesses and possibilities for transfer to other contexts were analysed, and dissemination activities were carried out (see Image 1).

Image 1

TRADILEX Project Schedule



Note. Adapted from Fernández-Costales et al. (2023, p. 24).

As regards data collection instruments, the TRADILEX team designed an Initial Test of Integrated Skills (ITIS) in an attempt to verify the initial level of the students based on the four skills (oral production, written production, oral reception and written reception) before the intervention. Besides, the FITIS was designed to find out the final level of the students after the intervention. Both the pre-test and the post-test share a common design structure to avoid obtaining uncontaminated data (Couto-Cantero et al., 2021).

Both tests were divided into 4 sections corresponding to the four skills, specifically designed for CEFR level B1/B2. The maximum duration of the FITIS was two hours. The format of both, the questions and answers combined multiple input and output tools, such as voice recording, multiple-choice questions, paragraph typing (100-150 words), and video playing (1:30-2:00 minutes).

It is also important to emphasise that the materials accomplished for the design of the ITIS and FITIS were exclusively used for educational purposes, and the videos and texts were adapted from downloadable free web pages (Couto-Cantero et al., 2021). In fact, the project itself was carried out on Moodle, and at that time only the researchers (and the participants) had access to all the data collection instruments. This information was not publicly available (See Table1).

Table 1
Final Test of Integrated Skills. FITIS

Modality Context	Online	
CEFR Level	B1/B2	
Total Duration	2 hours	
Contents	4 sections (15 min. each)	Oral Reception Oral Production Written Reception Written Production
FITIS General Instructions	This Final Test of Integrated Skills (FITIS) has been elaborated by participants in the TRADILEX Project sponsored by the Ministry of Science and Innovation (Spain).	

Regarding the evaluation of the ITIS and FITIS Reading and Listening, correct answers were counted to obtain a final score that ranged from 0 to 10. On the other hand, the ITIS and FITIS Speaking and Writing were assessed according to a series of criteria. In the IT IS and FITIS Speaking, pronunciation and intonation, range of vocabulary, grammar, fluency, and general coherence were considered as assessment parameters. On the other hand, in the ITIS and FITIS Writing, spelling, grammatical accuracy, punctuation, word usage, and text composition, coherence, and cohesion were evaluated as key assessment criteria.

The testing of the TRADILEX proposal was conducted both online and onsite. The methodology for this study consisted of a quantitative non-parametric inferential analysis (Wilcoxon Signed-Rank Test) to measure the correlation between ITIS and FITIS. Additionally, a Mediation Analysis PROCESS with bootstrapping analysed to what extent the SDH mode acted as mediation variable between ITIS and FITIS.

All the procedure details of the overall results of the TRADILEX can be found in Fernández-Costales, et al. (2023). Therefore, to carry out this study the instruments designed to collect data for this specific research consisted, on the one hand, of the Initial Test of Integrated Skills (ITIS) and the Final Test of Integrated Skills (FITIS) and, on the other hand, the DAT activities involving the SDH mode (as explained in Talaván et al., 2023, p. 91).

As regards data gathering for the intervention, there were three LPs for each DAT mode (Sub, SDH, Dub, VO, and AD). As previously mentioned, in this research, we focus on the SDH mode. The SDH LPs were designed in GoogleForms divided into four parts: 1) Warm-Up activities lasting approximately 10 minutes, 2) followed by preview activities (5-10 minutes). 3) Then, the main didactic activity was carried out, focusing on SDH (approximately 30 minutes). 4) Then came the post-AVT activities (approximately 15 minutes). A complete Lesson Plan would take no more than 60 minutes (1 hour).

In the Warm-Up activities section, a brief text related to the main theme of the Lesson Plan was provided, and students are required to answer comprehension questions specifically designed for CEFR level B1/B2 (independent). This phase anticipated video content, characters, events and presents new vocabulary, structures, or cultural information. Subsequently, an initial viewing of the video clip was conducted. The video extract was watched at least twice, with or without subtitles, and accompanied by related tasks that familiarised students with the vocabulary, tone, intonation and accent. During the main activity, the actual SDH was performed. To help students complete the SDH, a guide with instructions was provided, along with all the necessary files for use in the specific subtitling programme for the hearing-impaired, a programme called AegiSub. The students then downloaded the AegiSub software (https://aegisub.org/), then the video clip, and finally, the .ass, or .srt subtitle file with blank spaces to fill in. Once they finished the subtitling, they were required to submit the file within the Lesson Plan, evaluated on the basis of the rubric shown below (see Image 2).

Image 2
Didactic SDH rubric

	Failure to meet expectations (0–19%)	*Poor (20–49%)*	*Good (50–69%)*	*Very good (70–89%)*	*Excellent (90–100%)*
Accuracy and appropriateness of the translated text (20%)	The subtitles are incomplete. There are lexical/grammatical errors to an unacceptable level	The subtitles are unclear. There are lexical/grammatical errors that do not fit the translated text	The subtitles are sometimes unclear or inaccurate. There are some lexical/grammatical errors	The subtitles are comprehensible but there are a few lexical/grammatical errors	The subtitles are precise, error-free and fit the translated text
Subtitle length, duration, and synchrony (20%)	The subtitle length, duration and synchrony are inappropriate	The subtitle length, duration and synchrony are often unsatisfactory	The subtitle length, duration and synchrony are not always appropriate	The subtitle length, duration and synchrony are often appropriate	The subtitle length, duration and synchrony are appropriate
Condensation and segmentation strategies (20%)	The reduction and segmentation of the subtitled text are either inappropriate or incomplete	The reduction and segmentation of the subtitled text are minimal or limited	The reduction and segmentation of the subtitled text are not always clear or accurate	The reduction and segmentation of the subtitled text are often clear and accurate	The reduction and segmentation of the subtitled text are clear and accurate
Correct description of sound effects and music (20%)	Sounds, music elements and effects are either not described, or done to an unacceptable level	A few sounds, music elements and effects are described in an appropriate way to a minimal level	Some sounds, music elements and effects are described in an appropriate way to an acceptable level	Almost all sounds, music elements and effects are often described in an appropriate way to a good level	All sounds, music elements and effects are described in a complete and appropriate way to the highest level
Paralinguistic information and character identification (20%)	Mood, tone of voice, pitch and character identification are either not described or done to an unacceptable level	Mood, tone of voice, pitch and character identification are at times described to a minimal level	Mood, tone of voice, pitch and character identification are sometimes well articulated and accurate to an acceptable level	Mood, tone of voice, pitch and character identification are often well articulated and accurate to a good level	Mood, tone of voice, pitch and character identification are well articulated and accurate to the highest level

Note. Retrieved from "Appendix 3.2. Didactic SDH sample rubric", N. Talaván, J. Lertola y A. Fernández-Costales, 2023, p. 96.

Next, in the Post-AVT section, students had to watch a video with related tasks to practise elements present in the LP that differed from the video they had previously subtitled and then record an audio lasting 1:30 to 2:00 minutes on Vocaroo (https://vocaroo.com/). In the recording, they would express their opinion on the topic, engage in a discussion, or address specific instructions provided in each Lesson Plan. Besides, some activities included written production (known as short composition).
To conclude, it is worth mentioning that all the instruments designed for this study were validated by experts and tested by other participants in a previous piloting phase (Couto-Cantero et al., 2021). Moreover, this research and its procedure was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of Universidad Nacional de Educación a Distancia (date of approval 5 July 2021) and all the universities involved in the project.

Data collection

For data collection, the Statistical Package for Social Sciences (SPSS. v.29 IBM Corp., Armonk, NY, USA), a widely used software programme for statistical analysis and data management was used. This software allowed us to perform statistical analyses, generate graphs and charts, and effectively organise the data collected during the TRADILEX pilot testing. As previously noted, the data underwent analysis via the SPSS programme, with the specific objective of comparing the previous ITIS with the outcomes of the FITIS.

To accomplish our objectives, we initially analysed descriptive statistical data (Mean) to ascertain the precise values of the figures at hand. Secondly, we calculated the Wilcoxon Signed-Rank Test and the Mediation Analysis using PROCESS with Bootstrapping.

RESULTS

In this section, we carry out a systematic analysis of the data with a comprehensive categorisation of the results based on specific objectives. This approach is fundamental in gaining a deeper understanding of the correlations between the various communicative skills and the SDH mode within the context of DAT.

The first objective (O1) aims to analyse the correlation between the ITIS and FITIS. This is an initial and essential step to determine whether there was a significant improvement in the results following the intervention. The second objective (O2) aims to explore the extent to which the SDH mediation variable impacts on the results between ITIS and FITIS. This analysis is particularly valuable, as it sheds light on the connection between SDH and the development of each communicative skill. Adopting this holistic perspective is crucial for understanding the multifaceted role SDH plays in foreign language learning. By assessing these correlations, we identified the strengths and weaknesses of this DAT mode in relation to each communicative skill. This analysis paves the way for more effective instructional strategies and tailored solutions for future practice.

Analysis of the correlation between the ITIS and FITIS (O1)

Firstly, we carried out the descriptive statistics of ITIS and FITIS (see Table 2). The table shows that the data do not follow a normal distribution, as the mean is not at the central value within the possible range (0–10).

Table 2
Descriptive Statistics of ITIS and FITIS

	N	Mean	Standard Deviation
ITIS	167	7.70	1.26
FITIS	167	8.89	.89

Next, we conducted an inferential analysis (see Table 3). Specifically, we used the Wilcoxon Signed-Rank Test, a non-parametric test that compares two dependent samples in pre-test and post-test studies. This test is appropriate, as the data do not follow a normal distribution, as seen above.

Table 3
Wilcoxon Signed-Rank Test ITIS – FITIS

	ITIS - FITIS
N	167

Z	-9.760
Asymp. Sig. (2-tailed)	< .001

The results show an improvement between ITIS and FITIS (Z = -9.760), and that this improvement is significant ($p < .001$).

Analysis of O2. To find out to what extent the SDH activities as mediation variable impact on the results between ITIS and FITIS

The analysis of O2 is a crucial step in understanding whether the SDH mode is a significant mediation variable in the FITIS results. To this end, a mediation analysis was conducted to examine the effect of the mediation variable, SDH mode, on the relationship between ITIS (pre-test) and FITIS (post-test). Additionally, the analysis was carried out using ITIS and FITIS data for each skill. This allowed for a deeper exploration and for obtaining the most comprehensive response possible to O2. Moreover, since our data failed to follow a normal distribution, we used the bootstrapping method with 5,000 resampling samples (see Table 4).

Table 4
Results of the PROCESS macro analysis ITIS – FITIS (N = 167)

	Indirect Effect	BootSE	BootLLCI	BootULCI
Listening	.0127	.0160	-.0110	.0531
Reading	.0033	.0075	-.0089	.0227
Writing	.0032	.0140	-.0244	.0325
Speaking	.0226	.0137	.0006	.0538

Table 4 shows the mediation effect of the SDH mode LPs divided by skills. The table reveals that the indirect effect of the SDH mode is positive across all skills. This means that the SDH mode enhances the relationship between ITIS and FITIS. In other words, the intervention of the SDH mode LPs leads to better FITIS scores.

Furthermore, to determine whether this positive relationship was significant, we examined the bootstrapping Lower Limit Confidence Interval (BootLLCI) and Boot Upper Limit Confidence Interval (BootULCI) data. When the interval between BootLLCI and BootULCI does not include the 0 value, we conclude that the results are significant. The breakdown of the results for the Listening skill indicated that, although the effect of the mediating variable was positive, it was insufficient, as it failed to reach significance. As regards the Reading and Writing skills, the indirect effect was positive but low, and therefore not good enough to achieve statistical significance. Finally, the Speaking skill showed a higher positive indirect effect compared to all other skills, and in this case, the mediating variable did reach significance.

DISCUSSION AND CONCLUSION

The data analysis confirms our RQ, indicating that following an intervention on three Lesson Plans (LPs) focused on Subtitling for the Deaf and Hard-of-Hearing (SDH) for foreign language learning, it is indeed feasible to enhance the Communicative Language Competence in language skills. As concluded by Fernández-Costales et al. (2023) when examining the data from ITIS and FITIS, significant improvements were

observed in all communicative skills. Furthermore, our findings confirm that the SDH mode similarly aligns with this improvement trend, as positive correlations were evident in all instances.

In this article, while addressing O1 and focusing on the correlation between ITIS and FITIS, we observed an overall significant advancement between the initial and final results, particularly in oral production skills ($p < .01$). This finding indicates that the SpS intervention contributed notably to students' progress, in line with the results reported by Fernández-Costales et al. (2023). This improvement can be attributed to the fact that the main activity accounted for 50% of the total time within each LP in this DAT mode, with oral and written production being its primary focus. On one hand, active listening occurred in the form of dialogues, intonations, sounds and sound effects as Lertola (2019) and Talaván (2019) claimed in previous studies. Furthermore, particular attention was given to participants as they were instructed to transcribe all oral information into text, adhering to the basic guidelines for SDH (UNE153010) (AENOR, 2012).

On the other hand, with regard to O2, the results show that the SDH activities as the mediating variable between the ITIS and the FITIS are significant in improving the Speaking skills. Despite Listening and Writing being the Main activities in didactic SDH, the LPs, as a whole, also include Reading and Speaking activities (Talaván et al. 2023). This is the reason why these authors consider that a good LP design is an essential prerequisite for success. SDH involves integrating auditory information (dialogue and sound) in written form. By having to transform auditory input into accessible text, the student activates a cognitive process with characteristics similar to those involved in oral production, particularly in discourse organization and lexical selection.

Although the task is written, it does require active linguistic decisions, e.g. what information needs to be maintained, simplified, or adapted for a hearing-impaired audience. This promotes the automatization of oral structures, as the student must write the discourse as if it were going to be conveyed verbally (Swain, 2000).

After obtaining the results of improvement between ITIS and FITIS and comparing the results reported by Fernández-Costales et al. (2023), where there is significant improvement between ITIS and FITIS, further analysis for future research is recommended. Therefore, in the future, this study would involve analysing the different DAT modes to verify which mode, as a mediation variable, has a greater impact on each skill. In fact, these authors believe this is very important because the five DAT modes are all in harmony, and the ideal approach for language learning is to have a general understanding of all skills and not just one or two of them, in order to communicate and comprehend messages.

Future research endeavours should also concentrate on addressing and enhancing the weaker aspects of the SDH mode. One area for improvement lies in diversifying the types of activities within the remaining LP content that is not part of the Main activity. Specifically, exploring the incorporation of more Reading activities into this LP content can help strengthen the effectiveness of the SDH mode. This adjustment could be achieved through activities that require students to comprehend written texts and answer short and long questions related to the text. Integrating reading exercises into the SDH LPs would offer students an opportunity to not only reinforce their reception skills but also answer related questions.

Furthermore, this expansion of reading activities could help bridge the gap between reception and production language skills, resulting in a more comprehensive and holistic language learning experience. Such research could delve into the specific types of reading activities that are most effective within the context of SDH, ensuring that these modifications contribute positively to improve the Communicative Language Competence and enhance accessibility for individuals with hearing impairments.

FUNDING

This research was funded by PID2019-107362GA-I00 AEI/10.13039/501100011033. Spanish Government, Science and Innovation Ministry / Gobierno de España, Ministerio de Ciencia e Innovación.

AUTHOR'S CONTRIBUTION

Mariona Sabaté-Carrové: Conceptualization; Methodology; Formal analysis; Investigation; Writing—original draft preparation; Writing—review and editing.
Pilar Couto-Cantero: Conceptualization; Methodology; Formal analysis; Investigation; Writing—original draft preparation; Writing—review and editing.
Noemi Fraga-Castrillón: Methodology; Formal analysis; Investigation; Data curation.

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