The project SubESPSKills: Subtitling tasks for students of Business English to improve written production skills

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A R T I C L E   I N F O

1. Introduction

In today's world, communication has expanded to new frontiers thanks to information and communication technology (ICT) tools, speaking and writing being the most important skills with which to accomplish this type of linguistic connection. In the university context, some students present difficulties when expressing themselves in a foreign language (L2) and addressing this fact is a must by both lecturers and researchers. Numerous studies (Muñoz-Luna, & Taillefer, 2018) are implemented with the aim of improving students' written skills in the English for Specific Purposes (ESP) class. Audiovisual translation (AVT) is no exception, and based on the contribution of numerous scholars (Díaz Cintas, 2012; Talaván, 2013; Danan, 2015; Vanderplank, 2016, among others), its potential cannot be ignored in the scope of foreign language learning (FLL).

Additionally, thanks to globalisation, both professionals and students can work and study abroad, further illustrating the importance of being able to communicate properly. Thus, the fact that more and more international students participate in

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both Spanish university degree and master's degree programmes calls for lecturers to implement methodologies that can address diverse cultural realities.

Bearing this in mind, the project SubESPSKills (Subtitling tasks in the English for Specific Purposes class to improve written production skills) was implemented with the aim of improving the written production skills in the second course of ESP of the Degree in Commerce at the *Universidad Complutense de Madrid* (UCM), Spain. Thus, this paper addresses the potential of reverse subtitling in FLL by dealing with a number of research questions that speak to the core of the research design employed. It also presents a comparison of the results of the development achieved by the two groups of students who undertook the course of Business English in the two different modalities, namely the traditional pen-and-paper methodology consisting of written tasks and the AVT methodology including extra activities involving reverse subtitling.

2. Audiovisual translation and foreign language learning

The literature of the use of AVT tools in FLL has gained an important position in the research field of AVT. Nowadays, it is common to implement student-centred methodologies where learners can work actively with audiovisual content and AVT modes.

Many studies have been conducted since the time when AVT was first emerging as a technique in FLL (Danan, 1992; Díaz Cintas, 1995; Vanderplank, 1988). A number of contributions consider how the subjects under study are not just passive users of audiovisual content that has been subtitled or dubbed, but instead become active participants making use of the techniques and strategies available to utilise new (other) AVT modes with the aim of improving linguistic, cultural, translation and ICT skills.

Talaván (2006, 2012, 2013), for example, devotes a great deal of her work to the use of active subtitling (Talaván, Ibáñez, & Bárcena, 2017; Talaván & Rodríguez-Arancón, 2014) as a didactic tool in FLL. Other studies are based on the potential of diverse AVT modes such as dubbing and subtitling (Talaván & Ávila-Cabrera, 2015). In addition, accessibility in FLL has been explored on the basis of diverse modes such as active audiodescription (Talaván & Lertola, 2016) and voiceover (Talaván & Rodríguez-Arancón, 2018) to enhance speaking skills, and subtitles for the deaf and the hard-of-hearing for written skills enhancement (Talaván, 2019b), among others.

Regarding other studies on the benefits of using AVT to enhance vocabulary, we can mention those works by Lertola (2012, 2015, 2019). It is important to highlight some European projects on AVT and FLL such as Levis (Romero, Torres-Hostench, & Sokoli, 2011; Sokoli, 2006), which accounts for learning via subtitling, and ClipFlair (Baños & Sokoli, 2015; Sokoli, 2015), the continuation of the former project. The latter offers users a database of activities based on revoicing and captioning, which can be enriched through the uploading of more material by registered users. The number of languages to create activities which can be selected in the platform is vast and this can help a myriad of users, lecturers, etc. whose language combinations are far from the common ones.

While they are rather scarce, there are also studies which focus their attention on subtitling, as a pedagogical tool, for teenage students. For example, Imre (2018) pinpoints the inclusion in FLL (especially in English) of passive subtitling through Hollywood films and TV series in the teaching of English to counterbalance the use of coursebooks and grammar books. Ávila-Cabrera (2018) implements a methodology which includes activities for secondary students with active interlingual reverse subtitling, recommending a good practice guide to avoid significant flaws in these types of experiments.

All these previous works on AVT explore and confirm the potential of this methodology as an L2 teaching tool but, most of them highlight the fact that culture is inherent to foreign languages and, consequently, it must also be taken into account when learning an L2. González-Iglesias and Toda (2011) analyse, from a professional point of view, how dubbing can be more beneficial than subtitling in the case of intercultural communication. By contrast, the importance of cultural and intercultural learning through the creation of subtitles is addressed by Borghetti and Lertola (2014). In a more unusual manner, Ávila-Cabrera and Rodríguez Arancón (2018) delve into the subtitling of offensive and taboo exchanges done by undergraduates and highlight the importance of culture and ideology when transferring controversial terms into a target text. The cultural component therefore cannot be denied, as it is a very important element to consider when learning an L2.

This paper shares common ground with some of the aforementioned studies. It deals with reverse subtitling in an active way, i.e. as the means to obtain the goal, namely the improvement in students' written production through their active role in the subtitling tasks. This practice is meant to positively influence the students' writings in an L2 considering that they will subtitle from their mother tongue into English. However, this paper has a distinctive feature, since participants are undergraduates taking an ESP course. It could be said that there are other skills derived from the active AVT mode practices, such as speaking, listening, reading, and digital skills, and knowledge such as vocabulary and grammar, all of which can be developed, considering the technical and linguistic features that these modes entail. For the sake of brevity, other transferable skills are not to be analysed thoroughly in this paper, which aims to contribute to the existing literature of AVT and FLL with a special focus on active reverse subtitling to improve written skills in Business English.

The variety of topics explored in the field of AVT and FLL exhibit an array of concepts which prove the flourishing state that AVT, in its broadest sense, has shown in the last few decades. We can observe new taxonomies of subtitles such as cybertitles divided into other sub-categories (Díaz Cintas, 2018b) and also new realities and terminologies in the subtitling and dubbing scope like fansubs (amateur subtitling), funsubs (gag dubbing), fandubs (amateur dubbing), and fundubs (gag dubbing) (Chaume, 2018). "AVT scholars are awakening to the reality that mass media is an extraordinarily powerful tool" (Díaz-Cintas, 2018a: 8), for which reason it could be said that this area of research has still a great deal to contribute to academia.

Accordingly, all these new research avenues can have a positive impact on AVT and FLL because of the multiple applications for use in the class.

3. Methodology

The teaching innovation project from the *Universidad Complutense de Madrid* called SubESPSKills (Subtitling tasks in the English for Specific Purposes class to improve written production skills) took place during the first semester of the 2018–2019 academic year. This section describes the goals, method and procedures for the development of this experiment.

3.1. Goals

The main goals of the project are defined by two research questions presented as follows:

- RQ1: Can reverse subtitling improve students' written skills in the ESP subject?

This project encourages students to practise their written skills in English through the completion of writing activities related to Business English as well as AVT tasks. In concrete terms, reverse subtitling entails a transfer from a source language (SL), i.e. the students' mother tongue (mainly Spanish and Chinese), into a target language (TL), in this case, English. The quantitative and qualitative analysis of the tasks completed by the students will be used to address this question by comparing the students' quantitative results with their perception of their participation in the project.

- RQ2: Are there other skills which can be improved upon regarding the use of reverse subtitling?

The activities selected are aimed at practising vocabulary related to the degree programme the participants are completing, namely, business and commerce. Writing properly entails making use of an array of varied terminology, grammatical structures, and translation strategies, as well as showing cultural awareness, which is paramount when learning an L2. The type of activities designed for this purpose also help students learn how to use ICT tools. Accordingly, every activity used ESP as the language of communication and this can also allow students to enhance some other skills. In order to answer this question, we will analyse the participants' own perceptions from a pre- and post-questionnaire, which the students completed before and after having done all proposed tasks.

There is also a secondary goal worthy of mention as shown below:

- Validating the potential of reverse subtitling and making participants familiar with AVT.

Subtitling has been proven to be an AVT mode which can be used in different manners both passively and actively. Through the active practice, participants can improve upon a number of linguistic skills. This project aims to support many other benefits revolving around AVT in FLL as claimed by different scholars. In addition, the practice of this AVT mode allows participants to become familiar with reverse subtitling in an active way that was previously unfamiliar to many of them.

3.2. Participants

This project involved 40 second-year students of a course on Business English. These students comprised the experimental group (EG) (out of which 12 were Spanish, 6 Chinese, 1 Romanian and 1 Bulgarian, whose Spanish level was nearly that of a native speaker) and the control group (CG) (out of which 14 were Spanish and 6 Chinese). All the students taking part in this study were between 18 and 25 years old, being 57.5% female and 42.5% male. The two groups have the following composition in terms of age: 2 18-year-old students (10%), 3 19-year-old (15%), 8 20-year-old (40%), 1 21-year old (5%), 2 22-year-old (10%), 2 23-year-old (10%), and 2 25-year-old (10%) in the CG and 3 18-year-old students (15%), 4 19-year-old (20%), 7 20-year-old (35%), 2 22-year-old (10%), 2 23-year-old (10%), and 2 25-year-old (10%) in the EG. Their first language was Spanish (57.6%), Chinese (29.8%) and others, such as Romanian or Bulgarian (12.6%) with oral and written linguistic skills very close to a Spanish native speaker. Finally, the students' level of proficiency in written production in English ranged between A2 and B2, with the following distribution of each proficiency level in each group: 2 students with A2 level (10%), 8 with B1 (40%), and 10 with B2 (50%) in the CG, and 3 students with A2 (15%), 7 with B1 (35%), and 10 with B2 (50%) in the EG. All in all, it can be stated that both of the groups were very similar in terms of age, nationality and proficiency level.

3.3. Method

The methodology followed was the multi-strategy design (Robson & McCartan, 2016), given the type of data gathered and analysed, and we also resorted to the sequential explanatory design (Creswell, 2003), that is, quantitative data are explored during the first stage with the aim of corroborating or refuting findings on the grounds of the qualitative data gathered in the second place.

Table 1
Tasks to be completed.

- Pre-questionnaire
- The subtitling of 2 videos from Spanish/Chinese to English (Business topics)
  ○ European students: Spanish-English
  ○ Asian students: Chinese-English
- 3 Compositions in English
- Post-questionnaire

There were common tasks done by both groups such as listening comprehension exercises, compositions, reading exercises, and creative dubbing tasks (with the aim of improving their speaking skills with an AVT mode) (Talaván, 2019a). Regarding the compositions (see Appendix 1), being the object of study, they were about business and commerce topics. Participants had to write 200–250 words and were instructed to develop 3 main aspects in the body of each of the composition themes, which were based on the content proposed. However, the subtitling activities were the only tasks done by the EG, but not by the CG. In the project announcement, in order to get students motivated for their participation, we indicated that 1 extra point would be added to the final mark they obtained in the course, provided this mark was at least 4 out of 10 points. As for the CG, they had 2 extra writing tasks with the aim of compensating for the lack of subtitling activities. These were very similar to the other compositions shared by both groups, since they concerned writing 200–250 words on business and commerce topics and also addressed 3 content-related points to be developed in the body (see Appendix 2).

The EG students were instructed to submit a number of tasks, which are included in Table 1.

Quantitative data were gathered in the form of two questionnaires. The pre-questionnaire dealt with general questions on the participants' gender, age, linguistic competence, etc. It was administered at the beginning of the project as a way for students to enrol in the project. Three compositions in English were submitted throughout the semester, and the reverse subtitling tasks were intertwined with these three essays. Finally, once all the tasks were completed and submitted, the participants filled out a post-questionnaire so that the researchers could have qualitative information on the students' outcomes after completion of the project.

As for the lecturers/researchers involved, three lecturers were from the *Universidad Complutense de Madrid* (UCM), three lecturers from the *Universidad Nacional de Educación a Distancia* (UNED), and one lecturer from the *Universidad Autónoma de Madrid* (UAM). All these universities are public and based in Madrid, Spain. In this project, the two main languages spoken by the students were Spanish and Chinese. This is the reason why the project needed to take into consideration the students' mother tongues and why the collaboration of Chinese native speakers was necessary in order to be able to provide these participants with tasks that could be successfully undertaken by them.

3.4. Procedures

The announcement of the project took place in the classroom, as well as on the virtual platform, which is Moodle. After the pre-questionnaire was completed, a virtual community was created for those students willing to participate, who were then given access to the virtual space as well as to a number of instructions on how to proceed.

The students were given information on the timeline so that they could start working toward meeting the assigned deadlines. Table 2 shows all the stages of the project.

Table 2
Timeline.

First semester: 10 September – 20 December
- 10–23 September. Sign up with pre-questionnaire
- 24 September-7 October: <u>Composition 1</u> (will be done in a face-to-face class)
  ○ Feedback on the composition
- 8–21 October: **Subtitle video 1** (will be done at home)
  ○ 22–28 October: Feedback on the subtitles (video 1)
- 22 October-4 November: <u>Composition 2</u> (will be done in a face-to-face class)
  ○ Feedback on the composition
- 5 November-18 November: **Subtitle video 2** (will be done at home)
  ○ 19–25 November: Feedback on the subtitles (video 2)
- 19 November-2 December: <u>Composition 3</u> (will be done in a face-to-face class)
  ○ Feedback on the composition
- 3 December-16 December: Post-questionnaire

As can be inferred from the above table, the participants received feedback on all their tasks including both compositions and reverse subtitling tasks.

Before the students had to submit the subtitling tasks, a general introduction to subtitling was given to them in class (Talaván, Ávila-Cabrera, & Costal, 2016). Then, very general conventions on subtitling were also addressed keeping in mind that the participants' subtitles were not expected to be as accurate as those produced by students from a Degree in

Translation, and because the goal of the project was related to the improvement of L2 skills. These subtitling conventions can be seen in Table 3.

Table 3
Subtitling conventions.

- Subtitles should appear on screen for a minimum of 1 second and a maximum of 6 seconds (the 6-second rule).
- One-line subtitles should have a maximum of some 35 characters.
- Two-line subtitles should have a maximum of some 70 characters.
- Only the most important information (both linguistic and paralinguistic) should be visible on the subtitles.
- Segmentation or line breaks: subtitles must be semantically and syntactically properly segmented (1 or 2 lines), that is, the division of the subtitle should not split the phrases between the lines.
- For further information please read the BBC subtitle guidelines: http://bbc.github.io/subtitle-guidelines/

In addition, some examples of segmentation were provided so that students could see different cases and learn how to break lines as shown in Table 4.

Table 4
Sample of segmentation.

Segmentation/line break	
When you play a game of thrones, you win or you die.	When you play a game of thrones, you win or you die.
Example A: ✔	Example B: X

The error in the second segmentation of Example B comes from the fact that it splits the preposition (of) from the noun it follows (thrones), separating the noun phrase (a game of thrones) into two lines, while it should be kept in the same line (a game of thrones) as it appears in Example A.

The subtitling editor chosen was Aegisub (http://www.aegisub.org/) because we consider it to be user-friendly and, taking into account that many of the subjects had not subtitled before, it was expected that participants would have fewer difficulties using it. In addition, individual attention and feedback on technical issues was offered to students on the virtual platform. A tutorial on Aegisub was also uploaded to this space to facilitate their use of the software program.

Regarding the participants' compositions (see Appendices 1 and 2), we based our assessments on the Cambridge writing performance rubric for B2 level as the coursebook used for the subject of Business English corresponded to that level.[1] As reverse subtitling tasks were also evaluated, only with the aim of providing the students with feedback on this AVT practice, we borrowed a rubric from a project with some common features (Talaván et al., 2017), as indicated in Table 5.

Table 5
Rubric for the assessment of subtitles.

Name/surname				Group
Item	Excellent	Good	Sufficient	Insufficient
Accuracy	0-5 errors	6-10 errors	11-15 errors	Over 15 errors
	(4–3.5 points)	(3.4–2.5 points)	(2.4–1.5 points)	(1.4–0 points)
Condensation	100%–80%	79-60%	59-50%	Below 50%
	(4–3.5 points)	(3.4–2.5 points)	(2.4–1.5 points)	(1.4–0 points)
Segmentation	100%–80%	79-60%	59-50%	Below 50%
	(1 point)	(0.75 points)	(0.50 points)	(0.25–0 points)
Synchrony	100-80%	79-60%	59-50%	Below 50%
	(1 point)	(0.75 points)	(0.50 points)	(0.25–0 points)
Grand total				

The above table reveals that the assessment tends to be lenient in some items, because these students may not be as familiar with AVT as other students taking a course in foreign languages. Also, because of the nature of this experiment in FLL, whose activities are designed to be completed in the course of only one semester, little knowledge of subtitling is expected to be gained in such a short span of time. A more recurrent use of AVT practices like this, whether with educational or ludic purposes, might lead participants to learn how to subtitle in a more accurate way.

The audiovisual corpus selected for the subtitling tasks was composed of four videos related to ESP, more specifically, Business English:

- Video 1 (Spanish-English). *Las razones del alcalde de Miami para que inviertan allí las empresas españolas.*[2] [Miami Mayor's reasons for Spanish companies to invest there].

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[1] https://www.cambridgeenglish.org/pl/Images/603901-cer_6647_v1b_jul20_teacher-guide-for-writing_b2_first_schools_prf2.pdf.
[2] https://www.youtube.com/watch?v=PclWWsY1M4A.

- Video 1 (Chinese-English). Zhangjiagang Kangde Xin Composite Material Co, Ltd China.[3]
- Video 2 (Spanish-English). *Cervezas La Virgen estrena fábrica: el secreto del éxito de este oro líquido*.[4] [La Virgen Beers opens a new factory: the secret of the success of this gold liquid].
- Video 2 (Chinese-English). *Solco Biomedical*.[5]

In the case of the Chinese videos, the ST in Chinese was translated into English by two Chinese students collaborating on the project. Table 6 shows some excerpts from these videos.

Table 6
Transcripts from Chinese into English.

Video 1
历经十六年的锐意精取, 开拓创新, 康得新已发展成为以先进高分子材料为核心的国际化企业集团。拥有六大产业基地, 九大研发中心, 三十一家子公司, 营销网络遍布全球八十多个国家和地区。
After 16 years of eagerness and innovation, Kangdexin has become an international enterprise group with advanced polymer materials as its core. It has 6 industrial bases, 9 R&D centres and 31 subsidiaries. Its marketing network covers more than 80 countries and regions all around the world.

Video 2
Solco Biomedical 成立于1974年, 在过去四十余年, 一直以健康生活为经营目标, 从治疗疾病的医疗领域到促进健康生活的家庭医疗保健, 只在为大众提供可以健康身体、健康心态、健康生活的综合保健方案。
Solco Biomedical was founded in 1974. In the past 40 years, it has always been aiming at healthy living, ranges from the medical field of treating diseases to family health care that promotes healthy living and provides comprehensive health care programmes that are focused on a healthy body, mindset and life.

The four videos, chosen by the researchers along with the support of the two Chinese students, were cut so that their duration was of about 2.5 min, to maintain the learners' interest (Talaván, 2019). It must be noted that each video could entail creating about 30 subtitles with room for about 250 words. Each video exhibited a register which aligned with ESP, providing the participants with non-fictional audiovisual material whose terminology is specific to the disciplines under study, that is, business and commerce English. Spanish students along with other European students, whose level of Spanish was advanced or proficient, subtitled two videos from Spanish into English, and Chinese students subtitled the videos from Chinese into English. All in all, every student subtitled 2 videos.

4. Data analysis

As already mentioned, this paper centres its attention on the students of the Degree in Commerce. As regards the number of students included in each group, there was a drop in the students' participation as the project was offered to 25 students, but only 20 of them managed to finish all tasks; perhaps due to the fact that active subtitling was a new task for most of the participants, who may have also found some difficulties when using the subtitling editor Aegisub.

The following section offers an analysis of the data obtained from the tasks performed by the students of both the EG and the CG.

4.1. Quantitative data

In order to find an answer to RQ1 (Can reverse subtitling improve students' written skills in the ESP subject?), this section shows both EG and CG students' marks and discusses whether data may be considered relevant enough to support the assumption that the implementation of the subtitling activities had positive influence on the improvement of the written skills in the EG. Firstly, Figure 1 includes the marks (on a scale from 0 to 10) that the EG students obtained in the subtitling activities:

As can be seen in Figure 1, the marks obtained by the students in the second subtitling task (2) are significantly higher than those obtained in the first (1). In fact, 16 of the 20 students scored higher in the second task than in the first. Two students did not experience any development in their written skills and only one student earned a lower mark. This fact allows us to affirm that students improved significantly in their ability to subtitle in English. This fact is confirmed by calculating the difference between the two average marks, which shows that the subtitling task presented an improvement of +0.59 points (means), although this was not considered in terms of the final goals.

Secondly, Figure 2 shows the marks (on a scale from 0 to 10) that EG students achieved on the three compositions they completed, which can help us get an idea of their initial level of proficiency in writing and how much development they experienced since then.

The students who performed the subtitling tasks, namely the EG students, also show considerable development in their skills when writing in English. As derived from these quantitative data, 15 of the 20 EG students improved their marks as a

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[3] https://www.youtube.com/watch?v=AOJ-QfCEbtM&t=227s.
[4] https://www.youtube.com/watch?v=0iSx0DmEGGU.
[5] https://www.youtube.com/watch?v=TKSFHn4p44s.
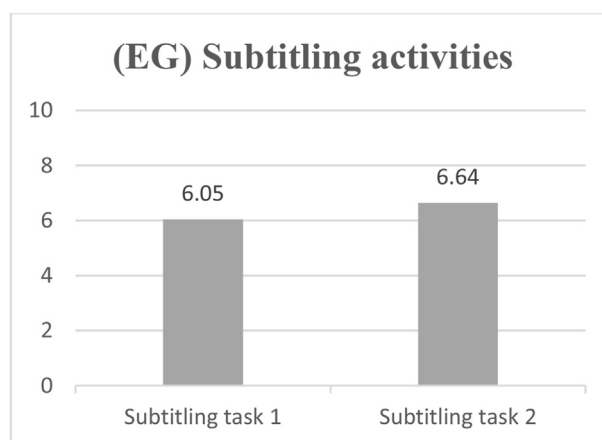
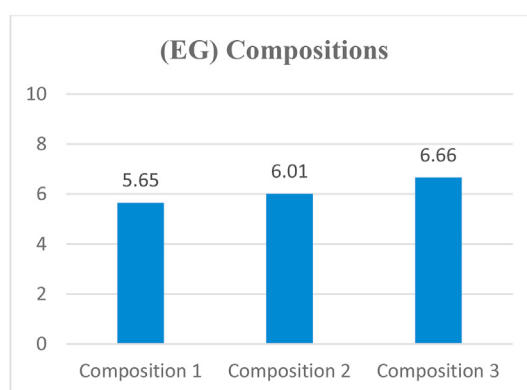**Figure 1.** Marks of the EG in the subtitling activities.

Figure 2. Marks of the EG in the writing activities.

result of having done the three written tasks and the subtitling practices. Furthermore, the difference between the average marks of the third (3) and first compositions (1), in Figure 2, shows an improvement of +1.01 points. This improvement of written skills in English in the EG suggests that these students became more familiar with subtitling in the FLL context, which could also have benefited other skills such as reading, and computing skills, and knowledge such as vocabulary. We could claim that understanding and putting into practice subtitling conventions can help students to improve some of the afore-mentioned skills.

Finally, Figure 3 includes the marks that CG students received for having written their compositions.

As can be observed in Figure 3, the CG students, who did not do the subtitling task, seem to have had more difficulty in improving their written skills in English. Thus, only 12 of the 20 CG students appear to have managed to improve their writing skills throughout the course after having submitted their three compositions. Furthermore, the difference between the initial (1) and final average mark (3) in the CG (+0.51 points) shows a lower improvement than in the EG (+1.01 points), which could be accounted for by the fact that the CG students did not carry out the subtitling tasks. In order to compensate for the absence of the subtitling tasks of this group, these students did other two extra writing tasks from home, which were not assessed.

Furthermore, the marks (on a scale from 0 to 10) obtained by EG students in most of the written tasks are considerably higher than those obtained by GC students, as is illustrated in Figure 4.

The comparison of the development of the written skills in EG and CG students, illustrated in Figure 4, shows that both groups initially had a similar level of proficiency (5.65 points vs. 5.65 points respectively). However, after completing the subtitling activities, particularly the second one, the EG students demonstrated some improvement in their writing skills, as evidenced by the comparison of the average mark in the third composition (6.66 points vs. 6.16 points) and the range calculated from the difference between the average mark in the third composition and that of the first composition (+1.01 points vs. +0.51 points).

A study of the descriptive statistics also supports the view that the EG students improved their written skills more than the CG students (see Table 7).
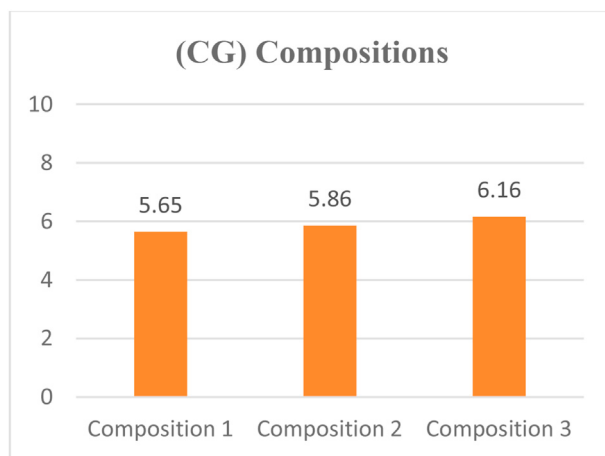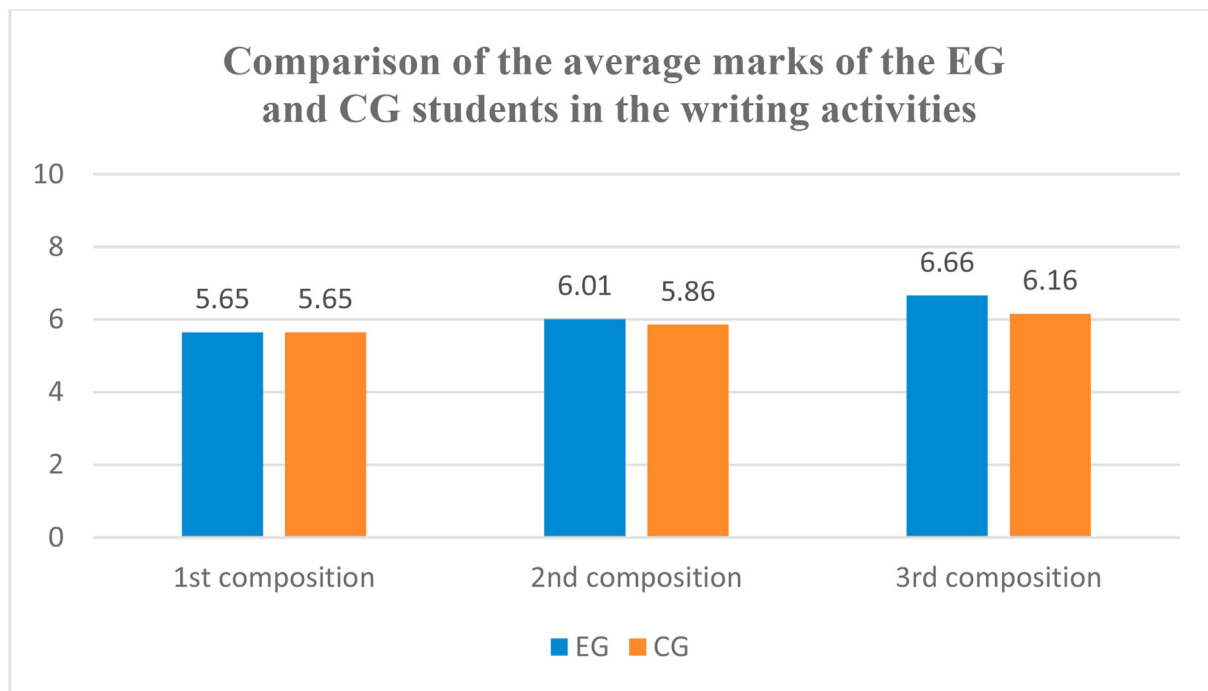
Figure 3. Marks of the CG in the writing activities.

Figure 4. Evolution of the improvement in the EG and GC students' written skills.

Table 7
Descriptive statistics.

	N	Mean	Std. Deviation
EG	20	6.10	1.59
CG	20	5.89	1.30

Table 7 shows that the EG achieved a noticeably higher mean than the CG (6.10 vs. 5.89). As regards the values of the standard deviation, it is of note that the CG shows a lower standard deviation (1.30) than the EG (1.59), which means that the values of the CG are closer to the mean –this results from the sum of the average marks of the three written assignments– and, consequently, more expected results than those of the EG, as a lower standard deviation indicates that data are generally considered fairly common and expected. By contrast, a higher standard deviation, such as that shown by the EG, indicates a relatively high variation from the average, which suggests the influence of an external factor. Owing to the difference between

the two means, it might be assumed that the influence has been positive, as there are higher values than the average in the EG than in the CG.

Further evidence for the assumption that the EG students have benefited from doing the subtitling activities that has helped them improve their written skills can be provided by statistical procedures. While the results obtained in tests such as Chi square do not fully support the aforementioned conclusion, they are, at least, not incompatible with the assumption that working on the subtitling activity could have helped students of the EG group improve their written skills.

Next, a deeper statistical study is offered to see if it is possible to establish a correlation between the increase in marks in the composition activities and the audiovisual tasks carried out by the experimental group. Once we know that the samples are normally distributed and that the population variances are statistically equal thanks to the Kolmogorov–Smirnov Goodness-of-Fit test, we can proceed to calculate the Student's t-statistic.

Firstly, a T-test is carried out to determine whether the two samples corresponding to the marks obtained by the EG students in the two audiovisual tasks show significant variation (see Table 8).

The means of subtitling activity 2 minus that of subtitling activity 1 equals 0.59 and the p-value is lower than 0.05, hence the difference between the two means in this sample can be considered to be statistically significant. This appears to reveal that the EG students have considerably improved their skill by completing the audiovisual tasks.

Secondly, the two samples corresponding to the marks the same group of students obtained in the last two written compositions were also examined with the T-student test in order to gauge a possible variation between the means (see Table 9).

The data from this analysis show that the means of the written assignment 3 minus that of the written assignment 2 equals 0.64 and, given that the p-value 0.045 is lower than the significance level, it seems plausible to consider the difference between the means in this sample statistically significant. This fact implies that the EG students have experienced great improvement in their completion of the written assignments.

As the data in Tables 8 and 9 show that the EG students have shown considerable development in the realisation of both the two audiovisual tasks and the realisation of the last two written assignments, we can assume a positive influence from doing the subtitling activities on the result of the realisation of the compositions. In order to check whether the CG was also able to show a similar development after having done more traditional (though not audiovisual) activities, a T-test was also calculated on the marks of the last two writing assignments in this group (see Table 10).

Table 8
T-test analysis involving the subtitling activities in the EG.

	Mean	SD	SEM	N	Confidence interval (95%)		t	df	SED	Sig.
					Lower	Higher				
Subt1	6.05	1.26	0.28	20	0.046	1.123	2.27	19	0.257	0.034
Sub2	6.64	1.38	0.31	20						

Table 9
T-test analysis involving the written tasks 2 and 3 in the EG.

	Mean	SD	SEM	N	Confidence interval (95%)		t	df	SED	Sig.
					Lower	Higher				
Wr2	6.01	1.74	0.38	20	0.015	1.279	2.14	19	0.302	0.045
Wr3	6.66	1.73	0.38	20						

Table 10
T-test analysis involving the written tasks 2 and 3 in the CG.

	Mean	SD	SEM	N	Confidence interval (95%)		t	df	SED	Sig.
					Lower	Higher				
Wr2	5.86	1.38	0.30	20	0.007	0.607	2.04	19	0.147	0.055
Wr3	6.16	1.35	0.30	20						

The analysis of the means in the two last written tasks made by the CG students shows a difference of 0.30, which is considerably lower than in the EG. Furthermore, the p-value is higher than 0.05, which means that the difference between the means in this sample is not statistically significant. This fact reveals that the progress of the CG was not as apparent as that made by the EG.

Next, the Pearson test was applied to the total means of the written tasks and of the subtitling activities made by the EG in an attempt to measure the strength of a possible correlation between the two variables, which would reflect an influence of the experimental methodology on the improvement of these students in their skills for completing written compositions (see Table 11).

Table 11
Pearson test of correlation between methodology and marks in the EG.

		Total subtitling activities in the EG	Total written activities in the EG
EG Total subtitling activities	Pearson correlation	1	0.272
	Sig.		0.245
	N	20	20
EG Total written activities	Pearson correlation	0.272	1
	Sig.	0.245	
	N	20	20

The result of this test shows that, although there is a positive correlation (r = 0.272; r^2 = 0.074), the relationship between the two variables is weak, that is, the strength of association between the variables does not approach 1 (r = 0.272), and the correlation coefficient is only slightly above from zero.

Finally, a Chi square test was applied to the total marks of the three compositions made by both groups in order to see if it is possible to prove the relationship between the type of methodology followed by each group and the marks obtained in the written compositions completed by each group. The results of the Chi square test show that, given a degree of freedom df = 19 and a p-value of 0.996, the Chi square statistic x^2 = 6.60 is higher than the critical value for a probability level of 0.997 (6.31) and lower than the critical value for a probability level of 0.995 (6.84), which indicates that the variables, namely completing the subtitling task and a higher improvement in the written skills, could be at least slightly associated. However, the corresponding p-value, namely 0.996, is higher than the level of significance 0.05. This means that the probability of finding a value 6.60 with a degree of freedom 19 is greater than 0.05, which appears to suggest a lack of association between the variables.

The fact that results provided by the Pearson test and the Chi square test are not statistically significant may be linked to the small size of the sample and the presence of a good number of values lower than 5, however.

4.2. Qualitative data

As mentioned in the methodology, the students of the EG were asked to complete two questionnaires. As regards the information provided by the students in the pre-questionnaire (see further data in section 3.2), they stated that they enjoyed working with videos, were keen on subtitling and improving English, and were interested in the possibility of getting one extra point as the reasons for participating in the project ("The use of a new program and doing practical things helps more than just learning the theory in other classes."). As for their familiarity with subtitled audiovisual content, only 13.5% of the students stated they always used it, 13.5% said they generally used it, 16.2% often used it, 56.8% sometimes used it, and, finally, 8.2% said they hardly ever used it. Furthermore, 43.2% of the students stated that they had had some previous subtitling experience (e.g. AMARA, Aegisub, Subtitle Workshop, ClipFlair, YouTube Video Editor…), and 56% said they had never had such an experience. Finally, of those with previous experience, 37.8% of the students said that they had subtitled a few clips, 2.7% of them said that they frequently did some subtitling work, and 2.7% of the students considered themselves fansubbers.

With regard to the information offered by the EG students in the post-questionnaire, the results support the participants' perception that performing AVT tasks seems to help them improve their written skills in another language: 19.04% of the students stated that they were very satisfied with their improvement of written skills in English after doing the AVT tasks, 47.61% of them were quite satisfied, 28.57% said that their experience had been beneficial in the development of their written skills ("My favourite aspect is to translate the subtitles into English and add them to the video, which makes me feel fulfilled."), and only 4.76% said that this experience had not met their expectations completely. As for the students' perception of those other aspects that could also have benefited from the AVT practice, they cited digital skills and vocabulary (both with 57.1%) as the best developed skill/knowledge, followed by grammar (33.3%) and reading (28.6%) ("I liked most of all the research job I had to do to learn the specific commerce vocabulary and also some new grammatical forms.").

Taking into account the students' opinions, it could be said that most of them found working on the subtitling activities within their classes especially stimulating and motivating. Many of them were aware, at the end of the project, that there was a close relationship between the use of this less conventional methodology and the improvement of their skills, not only of their written skills, but also of other aspects of their learning of English related to vocabulary acquisition, grammar knowledge, reading comprehension, and the development of digital skills. This therefore appears to suggest that the goals of the teaching innovation project were reached.

5. Discussion

This paper has attempted to offer evidence to relate the increase in English written competence to the use of an experimental methodology based on the use of AVT tasks consisting of the reverse subtitling into English of two videos related to

Business English. While it is true that the different statistical tests did not yield relevant results that allow us to affirm the existence of a relationship between the higher level of proficiency acquired by the EG students and the completion of the subtitling activities (in comparison with the CG students, who did not do the audiovisual tasks), basic descriptive statistical data have been analysed and presented. The total average mark resulting from the completion of three written assignments (6.10 points for the EG vs. 5.89 points for the CG) (Table 7), the average marks obtained by the students of different groups in the last two written assignments (second composition: 6.01 points for the EG vs. 5.86 points for the CG; third composition: 6.66 points for the EG vs. 6.16 points for the CG) (Figure 4) –carried out after doing the subtitling tasks–, and the development shown by the two groups between the first and third written composition. This is illustrated by the difference between the first and third total average mark (+1.01 points for the EG vs. +0.51 points for the CG) and can provide an indication that the higher level reached by the EG students compared to the CG students may be associated with the implementation of an innovative methodology. More than being due to mere coincidence, it seems more plausible to state that reversed subtitling has been an effective factor influencing writing proficiency. In addition, this AVT mode appears to generate better results than a traditional methodology utilising some other written activities based on the study of vocabulary and grammar. However, the fact that the AVT activities provided to the EG participants included more guided opportunities to practice not only translation, but vocabulary and grammar than of the CG groups, entails a limitation to this study.

6. Conclusion

This project has enabled us to support the potential of AVT in FLL. Reverse subtitling, being the AVT mode under analysis, was used with the goal of making students active subtitlers from their mother tongues, in the majority of the cases (with the exception of two out of 20 whose proficiency of Spanish was almost that of a native speaker), into English. Cultural differences were taken into account as most participants' mother tongues were Spanish and Chinese, the languages of the audio of the videos to be subtitled. The aim of the experiment was to validate whether or not written production skills along with other skills could be enhanced through the practice of activities involving reverse subtitling. While it has not been possible to provide significant statistical evidence to prove this relationship between the use of reverse subtitling and the development of the written skills in English, the data at least confirm that using a methodology involving AVT in an active way can be beneficial as students in the EG attained a higher proficiency than students in the CG, as was the case with some of the studies previously referenced (Lertola, 2012; Talaván, 2006; Talaván & Rodríguez-Arancón, 2014).

This paper has aimed to contribute to the body of research focusing on a less-studied AVT mode, reverse subtitling, using a novel language combination: Spanish/Chinese-English. The success of reverse subtitling, which proved to be a beneficial condition, can be explained by analysing the way in which translation facilitates L2 encoding, which is then enhanced by the multiple memory paths created by the visual and bilingual input (Paivio's bilingual dual coding model, 1986). As for a possible pedagogical implication, it may be suggested that by using subtitles for the writing activities, input may be processed more deeply enabling L2 learners to enhance their knowledge of language. Working on active subtitles as a writing activity can help L2 students acquire some knowledge of language (e.g. words, structure, etc.), which allows them to improve their written skills in an L2. In conclusion, based on the results of this study, a model integrating both reverse subtitling and traditional vocabulary and grammar learning into a complete curriculum could be a beneficial innovation in ESP courses.

As regards the limitations of this study, data collection only included the interaction produced by 20 students in each group and, therefore, the replication of this study including larger corpora that incorporate data produced by more students will have to be analysed for results to be significant. In addition, the EG practised with subtitling tasks, while this was not the case with the CG that worked on two extra writing tasks. The EG's exposure to more guided activities related to written production skills in English might have been an important factor for their outcomes. It seems plausible to asume that the sample size in this study might have affected the significance of the findings. However, we could also support the fact that the trend of subtitling tasks can lead to better scores, although they are not statistically significant.

The use of active subtitling in the FLL context is not a new practice and we can see that more and more experiments are being conducted at universities and secondary schools. It is expected that projects like this one can be implemented in more courses as part of the curriculum in many areas of study, thereby opening the gates to the enrichment of the literature of AVT and FLL.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.esp.2021.02.004.

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