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Trainers' and Employers' Perceptions of Training in Intralingual and Interlingual Live Subtitling: A Survey Study

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Abstract

Over the past decade, intralingual live subtitling (IntraLS) has become a professional practice backed up by academic research. Interlingual live subtitling (InterLS), in contrast, is still in its infancy. Although the demands for InterLS are growing, a competence profile and a subsequent curriculum design are yet to be developed. The ILSA project aims to bridge this gap by describing the profile of the interlingual live subtitler (InterLS-er) and by developing and validating a training course for this new professional. This article reports on the initial stage of that project: the assessment of the current practice and training of IntraLS and InterLS. Three surveys were disseminated among practitioners, trainers, and broadcasters and service providers. This article focuses on the responses from the latter two groups. The trainers were mainly asked questions about the content of the courses they teach. The employers, i.e. the broadcasters and service providers, were asked about the workflow at their company and the training of their staff members. The responses demonstrate that an all-encompassing training programme for InterLS is still lacking. This finding confirms the idea that research projects like ILSA are needed in order to train future InterLS-ers and to improve future live subtitling.

Keywords: interlingual live subtitling, training needs, professional practice.

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1. Introduction

Subtitling, dubbing, voice-over, subtitling for the deaf and hard of hearing (SDH), surtitling, audio description, live subtitling… the spectrum of audiovisual translation forms has grown substantially over the last few decades, and its purposes too. While audiovisual translation was initially conceptualised as a means to provide access to linguistic and cultural information, it has become a driver of social inclusion and integration by providing accessibility to audiovisual content for persons with a sensorial disability and for the elderly (Remael, Orero and Carroll, 2012), leading to a series of EU-funded projects (DTV4ALL[1], ADLAB and ADLAB PRO[2], HBB4ALL[3], ACT[4]).

One of the most recent forms of audiovisual translation and media accessibility is interlingual live subtitling (InterLS), i.e. the provision of subtitles for live content (such as news and public events) in another language than the language in which the utterance is pronounced. InterLS is a rather recent phenomenon, having emerged only in the last ten years. In contrast, its intralingual counterpart originated in the 1980s when live content was first subtitled for the deaf and hard of hearing. As Romero-Fresco (2018) explains, the techniques that are used to produce subtitles in both IntraLS and InterLS are the same: fast typing or stenography, dual keyboards and respeaking. Due to the expensive nature of stenotyping (given the extensive training that is needed to become a proficient stenotypist) and technological advancements in speech recognition (SR) software, respeaking has gained momentum since the turn of the century and is now the go-to method to produce live subtitles in many countries. Respeaking is:

> A technique in which a respeaker listens to the original sound of a (live) programme or event and respeaks it, including punctuation marks [...], to a SR software, which turns the recognised utterances into subtitles displayed on the screen with the shortest possible delay. (Romero-Fresco, 2011, p. 1)

According to Romero-Fresco (2018), respeaking was introduced as a profession in Europe in 2001, when it was first tested by the BBC and introduced at the same period in Flanders by the VRT. Other European countries, such as France, Italy and Spain, followed this trend some years later, primarily thanks to new legislation that made subtitling of 90% or even all television programmes obligatory, including live programmes.

Not only is the professional practice of InterLS new, so is research into this form of audiovisual translation and media accessibility. The handful of studies that have examined InterLS so far often follow the insights gained in previous research on IntraLS and/or examine InterLS in conjunction with its intralingual counterpart. To date, the research foci concern quality assessment in InterLS (Robert

[1] http://www.psp-dtv4all.org/
[2] http://www.adlabproject.eu/
[3] http://pagines.uab.cat/hbb4all/
[4] http://pagines.uab.cat/act/

& Remael, 2017; Romero-Fresco & Pöchhacker, 2017) and the cognitive respeaking process. A ground-breaking project in this respect is a Polish project named Respeaking – Process, Competences, Quality, conducted at the University of Warsaw, and funded by the Polish National Science Center from 2014 to 2017. In that project, eye-tracking, electroencephalography and screen recording were used to examine the cognitive load associated with intralingual and interlingual respeaking. The project led to several publications by the members of the project, with thought-provoking results. For example, it was shown that interlingual respeaking was perceived as more cognitively demanding than intralingual respeaking (Szarkowska, Krejtz, Dutka, & Pilipczuk, 2016). The team further examined respeaking among respeakers with different competence profiles: interpreters and translators. Whether interpreters make for better respeakers than translators or vice versa still remains to be seen. Szarkowska et al. (2016) reported not having found prominent differences between interpreters and translators across all categories of cognitive load, although interpreters stated having experienced lower cognitive load in some categories, particularly in self-reported mental demand. Similarly, Chmiel, Szarkowska, Korzinek, Lijewska, Dutka, Brocki and Marasek (2017), focusing on ear-voice span and pauses in respeaking, suggest that interpreters are not necessarily more predisposed to become respeakers than translators. However, more recently, Szarkowska, Krejtz, Dutka and Pilipczuk (2018) found that interpreters achieved higher quality ratings in respeaking, but they refined these findings by pointing at the strong link that was found between respeaking quality and working memory capacity: "People who have a high WMC performed consistently better as respeakers, regardless of whether they are interpreters or not." (2018, p. 223). Finally, Chmiel, Lijewska, Szarkowska, and Dutka (2018) come to a similar conclusion in a study on paraphrasing for respeaking by interpreters, translators and bilinguals, in which they found no clear and straightforward advantages of any of the participant groups.

In this paper, we will address a research aspect that is related to the previously discussed studies: the competence profile of InterLS-ers. Although live subtitling using fast typing and respeaking has been carried out in professional practice for quite some time, primarily in the intralingual mode, much is still unknown on what kind of knowledge, skills and attitude it actually takes to perform InterLS. Remael and Pöchhacker (forthcoming) hypothesize that it requires translating, subtitling and simultaneous interpreting skills, but empirical research is still lacking. Insight into the competence profile of InterLS-ers is necessary to inform training programmes. In-house training at live subtitling service providers has existed since the emergence of the respeaking profession in 2001, but "respeaking courses at university level are still few and far between" (Romero-Fresco, 2018, p. 101). The demand for InterLS-ers by broadcasters and political institutions is growing and hence the need for insight into the competence profile of these new professionals, which can inform subsequent curriculum design and assessment parameters. This is precisely what the Erasmus+ project ILSA[5] aims to do: design, develop, test and validate the first training course

[5] 2017-1-ES01-KA203-037948; 2017–2020

for InterLS and provide a protocol for the implementation of this discipline in different real-life scenarios, such as TV and live events.

This paper will report on the very first step of the ILSA project: the assessment of the current landscape of IntraLS and InterLS training and practice. For this assessment, we collected data from three stakeholder groups: (1) trainers, (2) practitioners, and (3) broadcasters and service providers. In this article, we will report on the insights provided by two groups, that is, trainers on the hand, and broadcasters and service providers on the other hand. In addition, we will compare our findings to results related to practitioners, which have been reported in another study (Robert, Schrijver, Diels, Forthcoming).

2. Methodology

2.1. Study Design: Survey

We designed a comprehensive online questionnaire in Qualtrics to collect data on the current training and practice of IntraLS and InterLS in a systematic manner. We disseminated this questionnaire among trainers, practitioners, broadcasters and service providers in the spring of 2018. In line with our previous study on live subtitling training and practice (Robert et al., Forthcoming), the term 'survey' will be used to describe the study design, and 'questionnaire' refers to the data collection instrument used, in correspondence with Saldanha and O'Brien's stance (2013).

According to Saldanha and O'Brien (2013), questionnaires have the advantage of allowing researchers to collect structured data on a large scale and in less time than other instruments and methods, such as individual interviews, require. However, they may be plagued by four types of errors. As explained in our previous study (Robert et al., Forthcoming), the first type of error is the coverage error: a particular segment of the targeted population may not be included in the survey. To avoid this error, all four academic partners of the project (University of Vigo as project leader, and the universities of Antwerp, Warsaw and Vienna) disseminated the survey to more than 80 potential respondents. To reach a population as wide as possible, these respondents were encouraged to disseminate the questionnaire further. Although we obtained 126 valid responses from practitioners, only five trainers and 21 broadcasters and service providers completed the survey properly. However, as said before, respeaking courses at university level are still infrequent, which means that we could not expect a high number of respondents in that group. Trainers come from five different countries (Belgium, Poland, UK, Spain, and Germany), three of which are the countries of the project partners. The responding broadcasters and service providers come from eight countries (Austria, Australia, Canada, Denmark, New Zealand, Spain, Switzerland and the UK), three of which are countries of the partners. Unfortunately, four responding broadcasters and service providers did not detail their country.

The second type of error is the sampling error: some parts of the population have a higher probability of being included in the survey. It was indeed the case that more Austrian, Belgian, Spanish and Polish trainers filled in the questionnaire, but more variety was observed among responding broadcasters and service providers: 39% of the respondents were Austrian, followed by 17% from the UK, 11% from Australia, 11% from Switzerland and 5.5% from Spain, Canada, Denmark and New Zealand. The survey reached 27 countries in total.

The third error is the nonresponse error: members of the sample do not answer the questionnaire at all or answer only some questions. The drop-out rate for our questionnaire aimed at the first target group, i.e. trainers, was rather high: 18 people started filling in the questionnaire, but when asked whether they were teaching (or had taught in the past) IntraLS, InterLS or both, only 10 people answered the question. They might have thought that the survey was about subtitling and realized that it focused only on live subtitling. Of these 10 people, only six filled in the whole survey. In other words, the drop-out rate for the trainers is 40%. Moreover, 1 participant did not use respeaking in his/her teaching and was thus excluded from the results. Consequently, the results related to the trainers are based on 5 respondents.

The fourth error type is the measurement error, which occurs when the actual response differs from the 'true' response. Although we cannot exclude that risk, we do not think this applied to our questionnaire, since it was anonymous and online.

2.2. Questionnaire Design

The questionnaire design was a collaborative project between all four partners of the ILSA project, with different rounds of feedback and a pilot testing in Qualtrics. For the content, research on training in respeaking and live subtitling has also been consulted, e.g., Arumí-Ribas and Romero-Fresco (2008), Remael and van der Veer (2006) and Romero-Fresco (2012). Different types of questions were formulated: closed (one answer or multiple answers, plus the possibility to add a comment), open, and Likert-scale questions. The full survey questionnaire will be available on the ILSA Project Website in 2020.[6]

The questionnaires for trainers on the one hand and broadcasters and service providers on the other hand consisted of three parts. The first part, called "Demographics", contained questions related to age, gender, country, education, etc., but also to regulations for broadcasters and service providers. The second and third parts were dedicated to IntraLS and InterLS, respectively. Trainers could choose to answer both parts, if they worked or had worked as both trainers in IntraLS and InterLS, or only one part if applicable. The broadcasters and service providers also had to select the type of subtitling

[6] http://www.ilsaproject.eu/project/

that they produce. Part 2 and Part 3 each consisted of 22 questions for the trainers, which were similar for both IntraLS and InterLS. Broadcasters and service providers had to answer 35 questions maximum, since some questions were only shown depending on the answer to a previous question. In both surveys, the focus was on training, and in particular on aspects such as course prerequisites, focus and structure of the course, mode of delivery and assessment. In addition, respondents were asked about the importance of formal training and/or practical experience in specific disciplines, such as interpreting or subtitling, for successful live subtitling with SR.

3. Results and Discussion

In this section, we will present the results of the surveys in several subsections: Section 2.1 will focus on demographics and regulations, Section 2.2 on trainers, Section 2.3 on broadcasters and service providers. When appropriate and relevant, we will compare our results to those related to practitioners (Robert et al., Forthcoming).

3.1. Demographics and Regulations

In total, as indicated before, we were able to gather valid answers from five trainers and 21 broadcasters and service providers. Trainers as well as broadcasters and service providers are rather young: 33.4 years old on average for trainers, 37 for representatives of broadcasters and 47 for representatives of service providers. Contrary to practitioners, who were predominantly female (66%), four out of five trainers were male. 57% of the broadcasters and service providers were men too. There is also a difference regarding the level of education. In our previous study, we observed that live subtitlers are highly educated, with 33% holding a Bachelor degree, 50% holding a Master's degree, and 3% even a PhD. The same can be said of trainers (4 Masters and 1 PhD), although a majority of the respondents from broadcasting and service provision companies (67%) have a BA degree, with "only" 17% having a Master's degree, 5% a PhD and 5% a secondary education diploma. They almost all occupy a supervising and/or management position (team leader, head of unit, etc.). Similarly, the trainers all combine their position with another job or activity, such as subtitler for the deaf and hard of hearing, researcher, interpreter, audiovisual translator, etc. The questionnaire's demographics section for the trainers ended with a section related to their own training. Two respondents were self-taught, one had taken a vocational course, one a course at a higher education institution (HEI), and one a combination of in-house and HEI training.

Broadcasters and service providers, in turn, were asked about legal obligations in their country to provide IntraLS and/or InterLS. Three respondents (no country specified) answered negatively, whereas 18 respondents answered positively. Respondents from Australia were unanimous, one of them saying that "there is a legal obligation to caption all content between 6 a.m.

and midnight, and all news programming outside of those hours."[7] Some of them even referred to the official website of the Australian government,[8] on which the information is refined: "There are some exceptions from the basic rule. For example, television programs that are not in English are not required to be captioned." The respondents from Austria mention an obligation, but only for public service broadcasting. Although there is no fixed percentage, one respondent explained that "since 2010 intralingual subtitling should be increased annually; approx. 70% at the moment." One respondent from Canada claims that there is a 100% obligation for IntraLS, but not for InterLS. The same can be said for Denmark: one respondent says that they are obliged to provide Danish IntraLS on their main channel to all live programmes, except for sports, trailers and commercials, although there is no fixed percentage. In Spain too, IntraLS is required: "90% public television and 75% for private broadcasters." In Switzerland, the legal obligation used to be 33% of the programmes in 2012, but 80% should be reached by 2022. All respondents for the UK answer similarly:

Ofcom regulations state that the BBC channels (excluding BBC Parliament) are required to subtitle 100% of their programme content. The corresponding targets for ITV1 (including both the regional and national licensees) and Channel 4 are 90% and for Five and S4C1 80%. Other channels have varying targets. I can't find any specific rules for live subtitles.

In sum, there are obligations in all cited countries, but the question remains whether there is a difference in regulations between live and pre-recorded subtitling.

3.2. Trainers in IntraLS and InterLS[9]

As said before, only five trainers completed the survey for trainers. Three respondents only completed the part of the survey dedicated to IntraLS, and two answered both parts. In other words, the results for training into IntraLS are based on the answers from five respondents, whereas the results for training into InterLS are based on the answers from two respondents.

3.2.1. Use of technology

The first question related to the type of software trainers use in their teaching. All five trainers (IntraLS and InterLS) use a SR system (e.g., Dragon Naturally Speaking or Newton Dictate for Polish) and a subtitling software (e.g. WinCaps, Fan Subtitler Live). The trainers in IntraLS have been using a SR software in their course for one year (N=2), or two years (N=2), although one respondent stated

[7] Comments from the questionnaires that are represented in this article retain the original wording, including linguistic errors.
[8] https://www.acma.gov.au/Citizen/TV-Radio/Television/Captioning
[9] Since the results are based on 5 respondents, we will generally report the absolute numbers.

to have used SR software for the last 11 years. The two trainers in InterLS have been using SR in their course for one year (N=1) or two years (N=1). Trainers were also asked for how long they had been teaching IntraLS and/or InterLS. The results are exactly the same, in other words, they have been teaching IntraLS and/or InterLS since they have introduced SR in their course. With the exception of the more experienced trainer (teaching for 11 years, with some 700 students for IntraLS), trainers have taught in average some 20 students so far (IntraLS) and some 18 students in average for InterLS.

3.2.2. Training description

The next series of questions related to the level of the course, the number of hours, weeks, and ECTS. All courses have been or are being taught at Master level (Master in Interpreting, Master in Audiovisual Translation, Master in Applied Linguistics), with the exception of one respondent teaching a vocational course. Three of the five IntraLS courses were self-contained (e.g. "Audiovisual translation: live subtitling through respeaking") and two were parts of a module (e.g. "Media Accessibility"). Both InterLS courses were self-contained. The number of ECTS, contact hours and weeks of training varies and depends on the course type (self-contained or part of a larger module). Unsurprisingly, the trainer responsible for the vocational course in IntraLS did not answer the question regarding the number of ECTS, but reported 40 to 44 weeks of training, with a varying number of contact hours. The two HEI trainers in IntraLS responsible for a self-contained course report 3 ECTS, 15 weeks and 30 contact hours in total. The other two, who teach IntraLS within a module, report 10 and 20 ECTS for the whole module respectively, corresponding to 12 and 11 weeks respectively, and 36 and 3 hours respectively, although it is not clear whether the number of contact hours is meant to be per week, of for the whole course within the module. For InterLS, one trainer reports 3 ECTS, 15 weeks and 30 contact hours in total, the other 6 ECTS, 30 weeks, 60 contact hours in total, knowing that both IntraLS and InterLS is offered in one and the same course. In other words, it seems that in general, a training in IntraLS consists of around 30 contact hours.

In the next question, trainers were asked for what context they teach IntraLS and/or InterLS. They could select (1) television, (2) live events and (3) others. The vocational trainer in IntraLS selected live events and added "educational sector, work, sports, politics, media, and further public events in different areas"). Out of the four HEI trainers in IntraLS, two trainers selected television only and two both television and live events. Finally, as far as InterLS is concerned, one trainer selected television only, the other one both television and live events. As a result, television seems to be the main context for training.

Trainers were then asked about prerequisites for their course. Students who want to enrol for a course in IntraLS are expected to have a relevant BA (for example, in translation) (*N*=2), to be enrolled in a Master in Interpreting programme (*N*=1) or to have completed a course in subtitling or interpreting (*N*=1), although in this case, the trainer does not mention whether the course in subtitling or interpreting is part of the BA or MA programme. For the vocational course,

the prerequisites are broader: "people active in the fields of communications and texting, logopedist [speech and language therapist], pastoral care, inclusion, accessibility, media, interlingual and sign language interpreting." As far as prerequisites for InterLS are concerned, one trainer explains that the students of InterLS have to be enrolled in the Master's programme in Interpreting, whereas the other trainer says that "as a prerequisite, students have to complete one of the following courses in the previous semester: Audiovisual translation: subtitling, Theory of interpreting and/or Consecutive interpreting." In other words, interpreting seems to be an important prerequisite, in both disciplines, but even more so in InterLS.

The next series of question addressed the focus of the course, its structure and learning outcomes. We will first report on IntraLS. Three trainers in IntraLS explicitly mention the theory of respeaking as the focus of their course, whereas the others refer to respeaking techniques or skills. As one of the respondents explains:

> Some theory is covered each week and the content is designed to complement and situate the practical work: topics include why respeaking is needed (in the context of Ofcom), respeaking practice in the UK, challenges implicit in respeaking, and accuracy in respeaking (including the NER model).

Four out of five trainers also explicitly indicate the use of a SR software as a focal point. Two of them stress the importance of error detection and "understanding how SR software works, what are the sources of errors and how to avoid the errors" and "setting up and managing profiles, adding and training in vocabulary, using macros, dictation skills, understanding why errors have occurred and how to avoid them." Another common focus are respeaking skills, described by one of the respondents as "developing dual focus (on listening and speaking), building respeaking stamina, consideration of what words might be edited out, respeaking different genres," and for which one of the respondents also stresses the importance of "cultivating split attention." Finally, subtitling skills, editing, dictation and correct enunciation are also indicated as main course foci. We find approximately the same focus for InterLS, with the explicit mention of interpreting skills.

All trainers in IntraLS seem to structure their course in a similar way, for which Example 1 below is rather representative.[10] Trainers generally start with a theoretical introduction on live subtitling and SR. Three out of four HEI IntraLS trainers also include InterLS at a later stage.

[10] The exception is the vocational course, which has no specific structure but a "face-to-face session/individual online coaching each month."

Example 1:

- First two classes: explaining what speech recognition software have the students make their own speech recognition profile and experiment with it.
- Classes three and four: have the students add words to their lexicon and train their reflexes with written texts. Make them be inventive with problematic situations. Teach them how to stop speaking if they misspeak.
- Classes five and six: start respeaking with easy speeches I read to them, at a slow pace. The students learn how to listen, speak and dictate punctuation marks, without correcting.
- Classes seven and eight: learn how to work with Quantum (or the subtitling software you would work with). Keyboard shortcuts are very important. The students respeak easy speeches (Dutch and Belgian royals) and afterward they correct them in Quantum (correct spacing).
- Classes nine and ten: First respeak a speech and then correct the speech while the video is playing a second time.
- Classes eleven and twelve: work in teams. One student respeaks, the other one corrects. Importance of communication between the respeaker and his corrector. Importance of summarizing.
- Classes thirteen to sixteen: respeaking and correcting their own work while the video is playing. Importance of summarizing and quick correcting skills.
- Classes seventeen and eighteen: interlingual respeaking. Respeaking without correcting and correcting while the video is playing a second time. Or one group waits outside while the first group respeaks, then the second group comes in and corrects the first group's subtitles while the video is running. (This way, they haven't heard the speech the first time). Useful for open caption interlingual subtitling in a team.
- Classes nineteen and twenty: interlingual respeaking. Respeaking and correcting at the same time. Useful for closed caption interlingual subtitling (by yourself).

Learning outcomes (LOs) are in line with the structure of the courses and can be very succinct, such as: “The students should be able to respeak and correct any given speech (intralingual). The students should be able to apply interlingual respeaking techniques.” More elaborate LOs are also found, such as illustrated by Example 2.

Example 2:

KNOWLEDGE:

- After completing the course, the student knows different methods used to create live subtitles and is familiar with professional live subtitling standards. The student also understands technical aspects and limitations related to live subtitling and their influence on the translation process.
- The student knows various speech recognition systems and their limitations.
- The student knows the basic rules of how to create an easy to read text.
- The student understands the role of live subtitling within wider scope of accessibility for persons with disabilities.
- The student knows quality assessment models NER and NERT.

SKILLS:

- The student can create intralingual live subtitling in Polish and interlingual live subtitling (from English into Polish). The student can also prepare intra- and interlingual live subtitling for the deaf and hard of hearing.
- The student is able to choose the most appropriate speech recognition system depending on the possibilities, needs and the topic of the event or live audiovisual show which is to be subtitled live.
- The student can predict terminological issues and can prepare for them in advance by adapting the system dictionary, using templates or macros.
- The student is able to identify errors in live subtitling, differentiates between recognition, edition and translation errors and is able to weigh their importance taking into account the effect on the audience. The student is able to perform quality analysis using NER and NERT models.

SOCIAL COMPETENCES:

- The student knows different types of target groups using live subtitles and understands their needs.
- The student understand which types of errors in live subtitling have the greatest effect on the audience.
- The student is able to educate the audience and other stakeholders on the benefits of live subtitling as well as certain limitations and technological requirements that live subtitling entails.

The two trainers in InterLS start with IntraLS and therefore apply a similar structure and have comparable LOs.

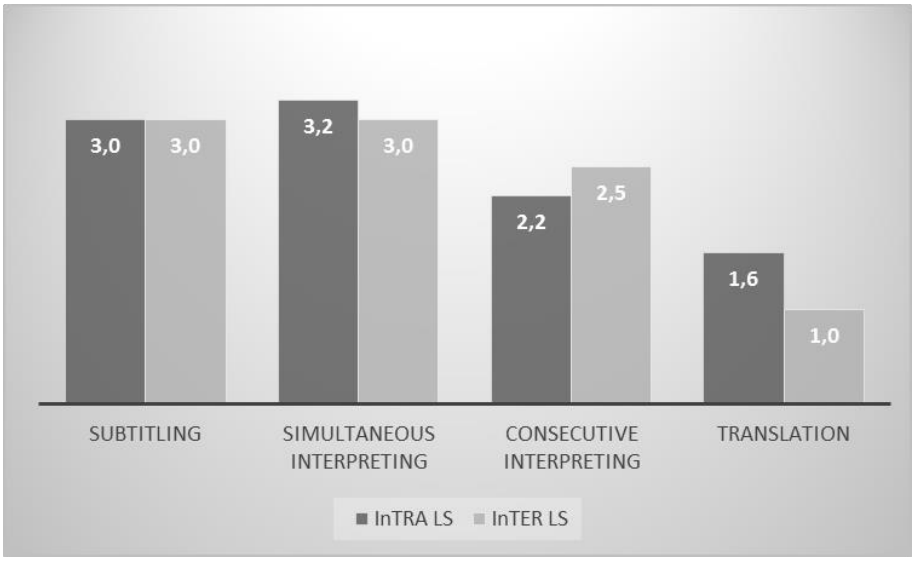
The next series of questions was related to the mode of delivery of the course, the set-up trained in the course (see below) and assessment. All courses, be it IntraLS or InterLS, involve a face-to-face part, generally combined with an online part and/or an internship. As far as the set-up for IntraLS training is concerned, trainers could select (1) individual respeaking without correction, (2) individual respeaking with self-correction, (3) individual respeaking with parallel correction by a corrector, (4) other. The vocational trainer focuses on set-ups 2 and 3, that is, individual respeaking with self-correction and individual respeaking with parallel correction by a corrector. Two HEI trainers only train individual respeaking with self-correction, whereas the two others combine set-ups 1, 2 and 3, or only 1 and 2. Regarding InterLS, one trainer focuses on individual respeaking with parallel correction by a corrector, whereas the other combines set-ups 1, 2 and 3. Assessment is in all cases continuous, or a combination of continuous assessment and a final exam or an internship. The accuracy rate (e.g. NER) is used in the assessment for IntraLS by three trainers (vocational trainer included). For InterLS, the accuracy rate is only used by one of the two trainers.

3.2.3. Prerequisites for successful IntraLS or InterLS with respeaking

At the end of the questionnaire, respondents were asked about the importance of prerequisites for successful IntraLS or InterLS with respeaking (using a Likert-scale question from 0 to 4, with 0 *being not important* and 4 *very important*). They had to rate the following prerequisites: formal training and/or experience in consecutive interpreting, simultaneous interpreting, subtitling and translation. As shown in Figure 1, they rate formal training and/or practical experience in simultaneous interpreting and subtitling as rather important (at least 3 on a scale of 4), whereas consecutive interpreting and translation are not considered as important. However, caution is warranted in interpreting these results: they are based on five respondents for IntraLS and two for InterLS, and the importance of translation, for example, seems to be less important for interlingual than for intralingual, which is counter-intuitive.

Figure 1.

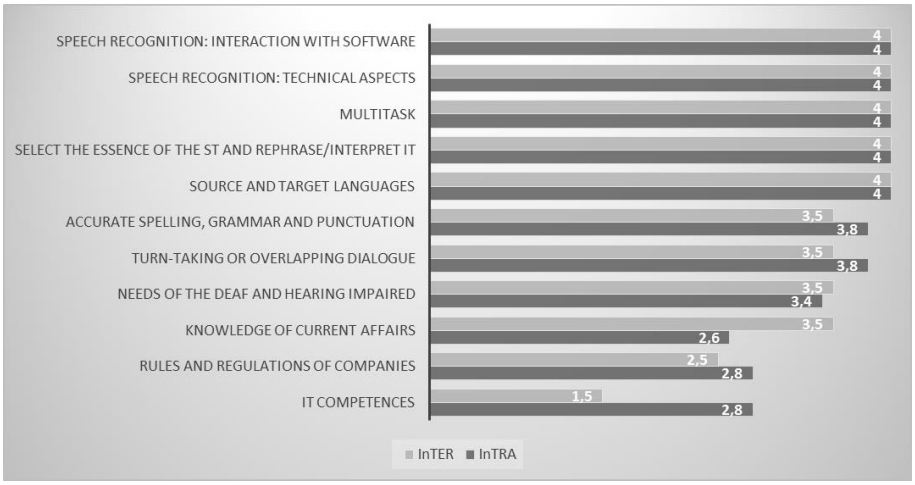
Trainers' Perception of the Importance of Core Prerequisites for Successful Intrals or Interls with Respeaking (Mean)



The trainers were also asked about additional prerequisites. As shown in Figure 2, there are a few skills that are considered very and equally important, such as the interaction with and the technical aspects of the SR software and multitasking. Only one skill is rated less important (below 2), i.e., IT competences for InterLS. But overall, all suggested skills are regarded as important prerequisites for successful live subtitling with SR.

Figure 2.

Trainers' Perception of the Importance of Specific Prerequisites for Successful Intrals or Interls with Respeaking (Mean)



These findings are very much in line with the data collected among practitioners who were trained at a HEI (Robert et al., Forthcoming). For example, almost all practitioners said that they were trained at Master level, either in Interpreting, in Audiovisual Translation, or in Translation and/or Interpreting. Practitioners also reported having a bachelor degree, preferably in translation or a language-related discipline, as a course prerequisite. The duration of the courses, again, seems similar to what the trainers report but varies considerably too. As far as the focus of the course is concerned, a majority of the practitioners reported a strong focus on practice, with some theoretical introduction. The practical part generally consisted of software use and profile creation, dictation practice and then respeaking practice. The most frequent set-up for respeaking training was individual respeaking with self-correction, although many respondents reported a combination of set-ups: individual respeaking without correction, with self-correction or with parallel correction. Again, this is quite analogous to the trainers' responses. The same applies to modes of delivery and assessment.

3.3. Broadcasters and Service Providers

As explained before, the second target group of the survey were representatives of broadcasting companies (*N*=6) and service providers (*N*=15).[11]

3.3.1. Profile, technology, context and workflow

The first series of questions focused on the positions held by the respondents at their company, the types of subtitles they produce and the technology they use. All respondents from broadcasting companies have a management position, such as "Chief Technical Officer", "head of access services", "head of the subtitling department". The same holds for respondents from service providers, with only one "live subtitler", the others having a management position, such as "supervisor", "CEO", etc.

In terms of the type of subtitles they produce, results show that 18 respondents (the 6 broadcasting companies, plus 12 service providers) produce only IntraLS (86%), two (both service providers) only InterLS (9%) and one respondent (a service provider) produces both (5%). In other words, results related to IntraLS will be based on 19 answers, and results on InterLS will be based on 3 answers. According to the answers, the respondents producing interlingual live subtitles all appear to be service providers. Respondents were asked for how long they had been providing IntraLS and/or InterLS. Three broadcasters report one or two years, the other three report respectively 10, 15 and 33. The service providers have been producing live subtitles for 16 years in average (min. 2 years, max. 42 years for IntraLS), and 12 years in average for InterLS (min. 4 years, max. 20 years).

[11] Sometimes, a question remained unanswererd.

As far as the technology is concerned, respondents could select one or several of the following options: speech recognition (SR), automatic SR, stenography, velotype, dual keyboard and standard keyboard. Results for both IntraLS and InterLS together (broadcasters and service providers taken together) (see Figure 3) reveal that SR is actually used by 95% of the respondents, since only 5% (1 respondent) reports using only a standard keyboard. Automatic SR does not seem to be used yet among our respondents. Figure 4 shows the results for each target group separately. InterLS is produced by SR, except for one respondent, using only a standard keyboard. As far as subtitling software is concerned, a majority uses Wincaps, Swift and FAB.

Figure 3.

Type of Technology Used to Produce Live Subtitles (Intrals and/or Interls, Broadcasters and Service Providers Taken Together

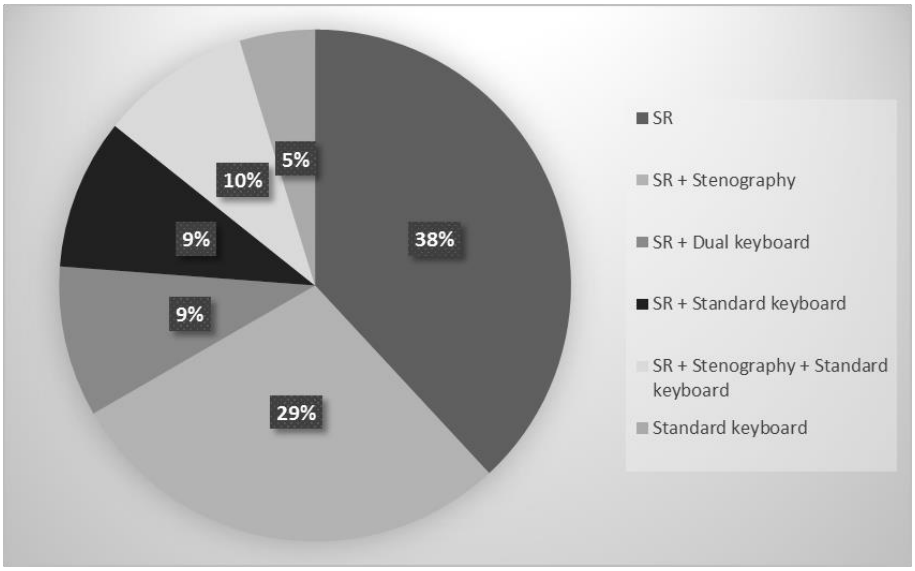
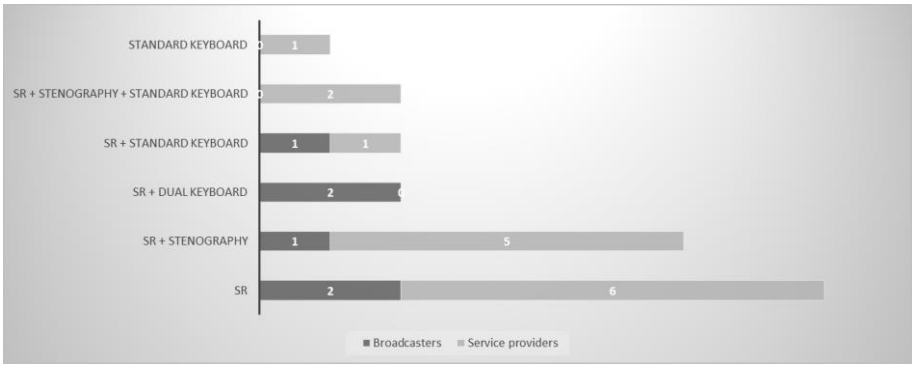


Figure 4.

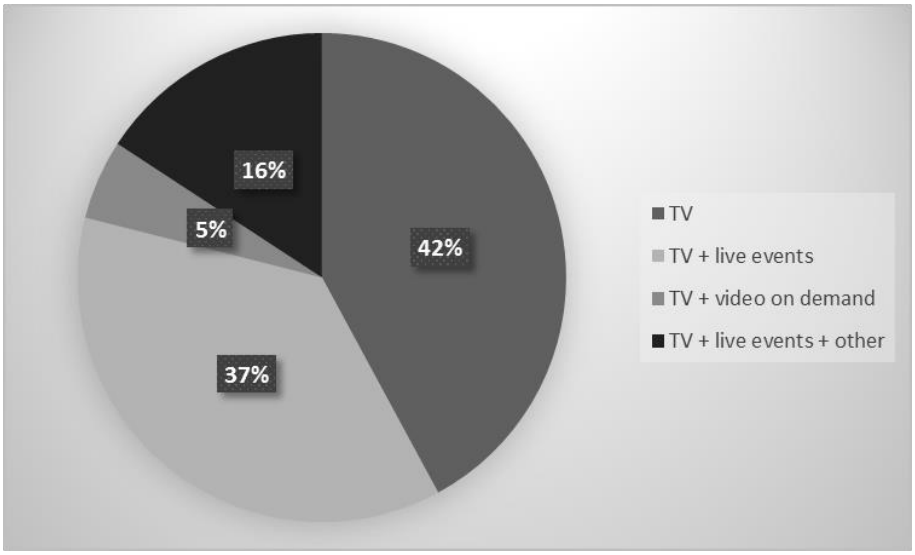
Type of Technology Used to Produce Live Subtitles (Intrals and/or Interls, Broadcasters and Service Providers Taken Separately)



Next, broadcasters and service providers were asked about the context for which they produce live subtitles. As far as IntraLS is concerned, broadcasters (N=6) all answered TV, although one broadcaster also added live events and another one added video on demand. Four service providers reported TV only, six selected TV and live events, and four selected TV, live events and others, i.e. streaming or an educational setting (see Figure 5 for both groups taken together, in percentages). For InterLS, one respondent says that they are still testing InterLS, but not using it yet. Another one mentions education, meetings, courts, hospital; the third one did not answer the question.

Figure 5.

Context for Production of Live Subtitles



In the next question, an open question, respondents were asked to give a detailed report of their workflow and workflow "participants" (or "actors"), to allow for a comparison with the training set-up reported by trainers (see section 2.2.) and practitioners (Robert et al., Forthcoming). We will first report on IntraLS. For IntraLS for TV, two broadcasters describe a workflow with three actors, such as "a respeaker interprets, a corrector next to him corrects errors and a broadcaster broadcasts the subtitles"; one broadcaster reports a workflow with a respeaker and a corrector, and the other 3 broadcasters describe a workflow or set-up generally consisting of two respeakers working in pairs, alternating when the programme is long, but taking care of the respeaking with self-correction or no correction, while the other respeaker prepares additional subtitles or is on stand-by. The workflows seem slightly different at service providers. They generally work with just one respeaker (*N*=7) or two respeakers working in pairs, alternating (*N*=5).[12] In other words, whereas broadcasters prefer to assign the different tasks (i.e. respeaking, correcting and broadcasting) to different people during one and the same task, service providers favour a workflow with just one respeaker combining the different tasks, or two respeaking alternating.

[12] Not all service providers answered that question.

For live events for which service providers provide IntraLS, 3 out of 10 service providers work with just one respeaker, 4 work with a respeaker and a corrector, and 3 with a respeaker or both a respeaker and a corrector, depending on the event. In other words, although service providers tend to prefer working with one respeaker for TV, for live events, they tend to work with two (see example 3).

Example 3:

> Depending on the nature of the event, either a solo captioner or a pair of captioners will respeak using Dragon into our Ai-Stream program, which transmits captions to viewers either logged in to a client program or on a webpage. The captioner respeaking live has the ability to edit their output within a certain character limit, and if there is a second captioner they also have the ability to edit captions within a separate, larger character limit. Any changes made will show up in real-time.

As far as InterLS is concerned, only one service provider gave a description of the workflow for TV, i.e., a set-up with two or three actors (respeaker + broadcaster; respeaker + corrector + broadcaster). For live events, the same service provider gave the same description, and another one reported a set-up with "one interpreter and two subtitlers working together at the same case using Text-on-Top software to present the text on screen or on a remote computer." We can conclude that the training reported by trainers (Section 2.2) and by practitioners (Robert et al., Forthcoming) prepare them well for the types of workflows in which they can play a role, since all workflows are covered in the training.

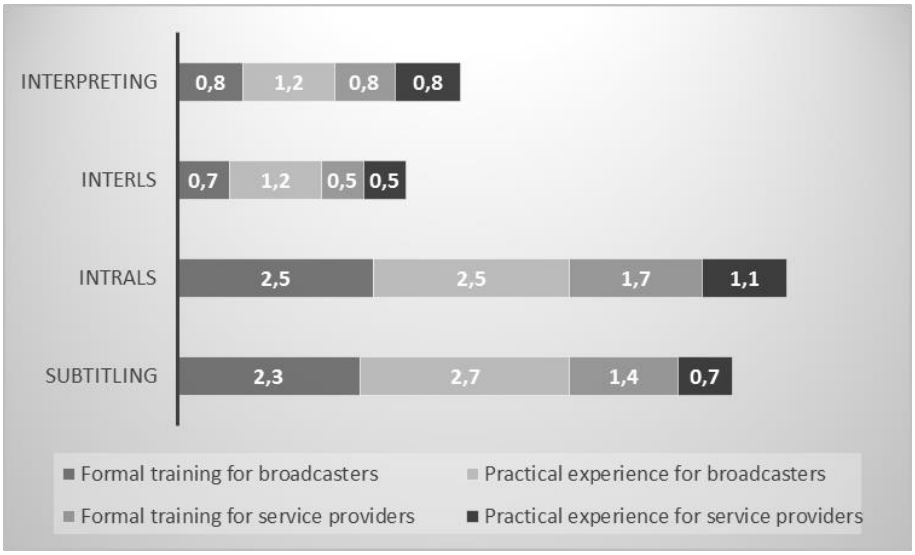
3.3.2. Staff, recruitment and in-house training

The next series of questions was related to staff and staff recruitment. The number of staff members that work as live subtitlers for the broadcasters and service providers varies from 7 to 100 for IntraLS (mean = 48), and from 2 to 12 for InterLS (mean = 5). However, it has to be noted that 74% of the respondents said that their IntraLS-ers combined that function with another one, such as subtitling, team leading or transcription. The same applies to InterLS-ers, who combine that function with intralingual or pre-recorded subtitling in two thirds of the cases. When they have to find new staff for IntraLS, 74% of the broadcasters and service providers train their own staff, 21% hire externally trained staff and 5% do both. Taken separately, the results for both target groups are slightly different, with 50% of the broadcasters training their own staff and 50% hiring externally, whereas these figures are respectively 84% and 8% for service providers (the remaining 8% work both ways). For InterLS, service providers seem again to prefer training their own staff (*N*=2), or work both ways (*N*=1).

Next, respondents were asked to rate the importance (from *not important* to *very important*, on a scale of 0 to 4) of formal training and practical experience in four different disciplines when hiring new staff: subtitling, live subtitling (IntraLS), interlingual live subtitling (InterLS), and (simultaneous) interpreting (SI). When hiring IntraLS-ers, it seems that broadcasters (*N*=6) and service providers (*N*=15) seem to favour a background in IntraLS and subtitling (formal training or practical experience), before a background in interpreting or InterLS. Broadcasters consider a background in subtitling or IntraLS much more important than a background in interpreting or InterLS whereas the difference in rating is more subtle among service providers (Figure 6).

Figure 6.

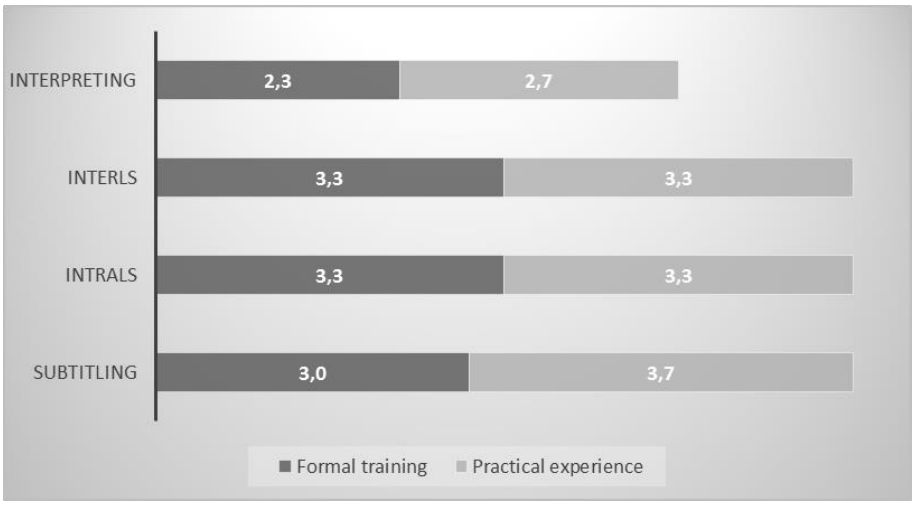
Importance of Formal Training and Practical Experience When Hiring Intrals-Staff



The picture is different when service providers have to hire new InterLS-staff: they rate a background in subtitling, IntraLS, InterLS and interpreting much higher than when they have to hire new IntraLS-staff (Figure 7). However, the results are based on 3 answers.

Figure 7.

Importance of Formal Training and Practical Experience When Hiring Interls-Staff



Regarding the hiring procedure, 63% of the broadcasters and service providers report that new candidates always have to take aptitude tests (*N*=2 for broadcasters, *N*=10 for service providers). 32% say they generally use such tests (*N*=3 for broadcasters, *N*=3 for service providers), whereas 5% report that there is no test (Only 1 broadcaster). All but one respondent specify that this test is a grammar and spelling test (94%), combined with either a respeaking test (82%) or a subtitling test (18%). Some respondents also mention an interview. Tests for InterLS, in contrast, include a speed writing test (min. 450 strokes/minute) (stated by the respondent using a keyboard, no respeaking), or a translation test. The use of the latter was explained as follows: "generally we feel the respeaking process can be trained reasonably easily but the core translation skills must be there from the start." Again, these results are based on 3 answers.

In a subsequent series of questions, respondents were asked whether they offered an in-house training in IntraLS and/or InterLS and if yes, they had to answer questions about the content, the duration, prerequisites, focus, structure, modes of delivery, set-up and assessment. 74% of the respondents offer in-house training in IntraLS (Broadcasters, *N*=3; service providers, *N*=11). Those who do not (Broadcasters, *N*=3; service providers, *N*=2), have an external service or hire a company for subtitling. Broadcasters and service providers who do offer in-house training have been doing so for a few years (2 to 15 years; *M*=9.6 for broadcasters; *M*=8 for service providers). The rate at which training is organized differs. The three broadcasters offering an IntraLS in-house training report a week, a few weeks or a month, respectively. A majority of service providers (*N*=9) report a few weeks, two of them specifying "15 periods of 2 or 3 hours" and "4-6 weeks, but only 1-2 hours a day, as they work on non-live subtitling the rest of the time" respectively. The two remaining service providers who also offer an in-house training in IntraLS report a duration of one a day, or a few hours, respectively. All broadcasters (*N*=3) organize the in-house training only when needed, which is also the case for 36% of the service providers (*N*=4). The others provide

a training a few times a year, but not every month (*N*=6, i.e. 55%) or offer an individual programme for each new subtitler (*N*=1). Broadcasters say that in average, 85% of their staff members working as live subtitlers have taken the in-house programme, for service providers, the percentage is slightly higher, at 87%.

For training in InterLS, very few data were collected: one respondent said that they were still in a test phase, another one just mentioned that they "look for people with the core language skills and train them in respeaking," and the last one, who gave many details, does not use respeaking in the workflow. Consequently, in the following paragraphs, the answers related to training focus, structure, mode of delivery, set-up and assessment will only involve training in IntraLS, as reported by 3 broadcasters and 11 service providers.

In all cases, the focus of the training is on using software (SR and subtitling) and on respeaking skills. 57% of the respondents also explicitly mention editing. In the description of the structure of the training, 42% of the respondents explicitly mention a theoretical part, devoted to the theory of respeaking. In general, the training is structured around respeaking with SR software, captioning or subtitling (e.g. using Q-live), hybrid captioning (i.e., alternating between pre-recorded and live subtitling) and error correction. All skills are trained with an increased level of complexity, going from shadow sessions to live work. Example 4 gives a good idea of the structure of training programmes.

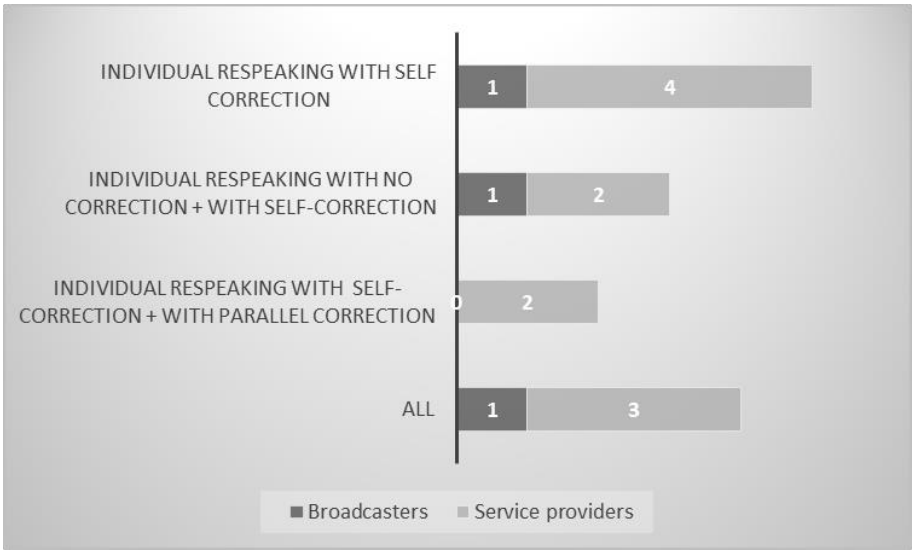
> Example 4:
>
> The first week of training focuses on captioning theory and developing respeaking practice through awareness and familiarity with Dragon software. These overarching concepts are built upon throughout the entire training program. The second week introduces the trainees to broadcast subtitling software, and introduces various strategies that can be used to improve respoken output. Editing speed, standards and accuracy is introduced in the second week.
>
> Week three introduces hybrid captioning, and trainees learn about the captioning software in which we prepare blocked captions. They also learn about the programs we access to find scripts for news content.
>
> Weeks four, five and six elaborate on all learned processes and introduce more complex captioned content, such as sports captioning and panel shows. Trainees are also informed about general administrative processes and company culture. Over this period, they start to gain experience in working with experienced captioners and sending captions to air in different contexts.

Similar to data collected from trainers and practitioners, the mode of training delivery is generally face-to-face (64%), a combination of face-to-face and online (29%) or online only (7%).

The trained set-ups are varied, as shown in Figure 8, but no respondent reports a training consisting only in individual respeaking with no correction.

Figure 8.

Training Set-Up in Intrals In-House Training at Broadcasters and Service Providers



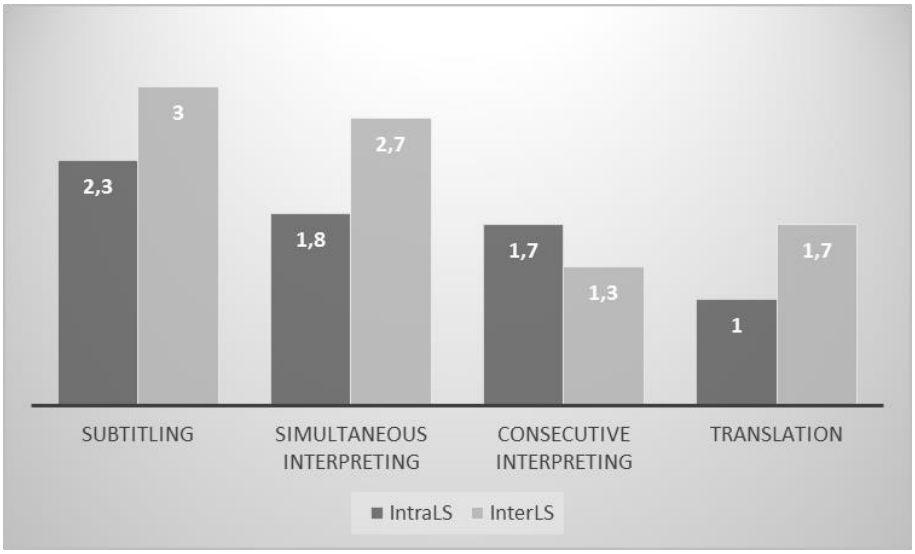
Assessment is systematic, either in the form of compulsory weekly tests, or in the form of performance analysis and feedback from the trainer. The NER model or a simplified version is often used in the assessment process (65%). When asked what they would change in the training if they could, respondents make a variety of suggestions, such as more one-to-one training and feedback, more editing, more online modules, a longer period of training.

3.3.3. Prerequisites for successful IntraLS or InterLS with respeaking

Finally, as for trainers, we asked broadcasters and service providers to rate the importance of prerequisites for successful IntraLS and InterLS with respeaking. For IntraLS, respondents rank formal training and/or experience in subtitling higher, followed by simultaneous interpreting (SI), translation and consecutive interpreting (CI) (see Figure 9). It has to be noted that only subtitling scores higher than 2, on a scale from 0 to 4. For InterLS, the ranking is similar, but both subtitling and simultaneous interpreting score higher than 2. These findings are consistent with the ones we obtained from the trainers.

Figure 9.

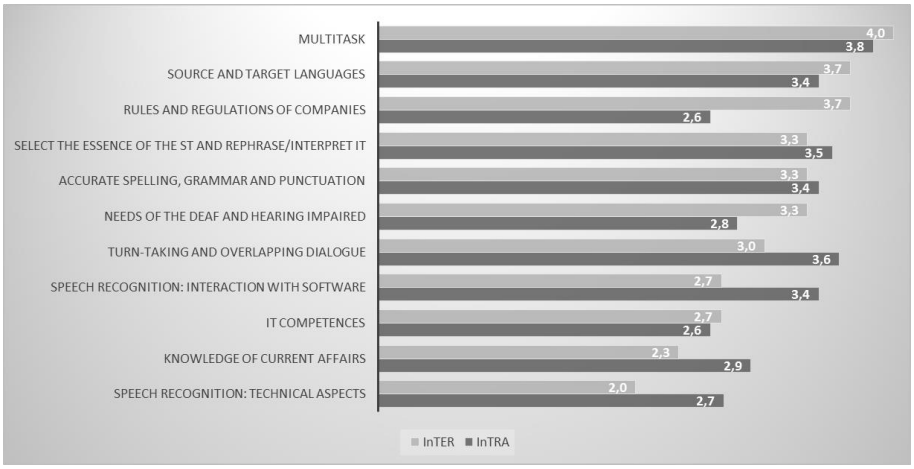
Broadcasters' and Service Providers' Perception of the Importance of Core Prerequisites for Successful Intrals or Interls With Respeaking (Mean)



Compared to trainers, broadcasters and service providers rank prerequisites for IntraLS and InterLS differently, although the same trends can be observed: a strong focus on multitasking and perfect command of the source and target languages (Figure 10).

Figure 10.

Broadcasters' and Service Providers' Perception of the Importance of Additional Prerequisites for Successful Intrals Or Interls With Respeaking (Mean)



3.3.4. Quality control, demand and remuneration

Regarding quality control, 80% of the respondents say that they apply the NER model for assessing IntraLS, either internally of by an external contractor, but this kind of evaluation is often combined with ad-hoc review and feedback.

As far as demand for IntraLS is concerned, 65% of the respondents say that there is currently a high or increasing demand of live subtitling for programmes such as news and sports, but also for live events or education, for live-streamed online video for example. Others describe the demand as good, medium, static or flat, since it is a regulatory requirement. With respect to future demand, more than 80% expect an increase, mentioning regulations, a higher demand from universities and for live streaming. One respondent says that the demand will continue to rise if quality remains a priority, otherwise, automatic SR could take over. Other respondents, in contrast, remain neutral regarding the future of IntraLS. As far as InterLS is concerned, one respondent says that there is "no steady demand yet, but it seems to pick up, mainly for conferences." This is confirmed by the respondent not using SR, who says that "the demand is rising," although the "service is not very well known with the hard of hearing persons." Another one indicates that "it seems as though there are a lot of broadcasters considering this service, particularly for live events which are broadcast in different territories in English, although fewer committing to it." They all expect a growing demand in the future, explaining, for example, that "broadcasters will adopt interlingual live subtitling for big one-off events or gain market penetration in new territories."

Finally, with regard to remuneration, 56% of the respondents think that remuneration for IntraLS as compared to pre-recorded subtitling will be higher, compared to 44% who expect it to remain the same or even be lower, due to, for example, the "implementation of artificial intelligence and other IT techniques." For InterLS, one respondent expects the same, the other states that they "expect costs to be higher as there are either additional resources (translator + respeaker) or more skilled respeakers required. This would be reflected in what we need to charge." In short, broadcasters and service providers see a bright future for InterLS, but emphasize the need for quality control.

Conclusions

In this article, we have reported on a survey study among trainers and representatives of service providers and broadcasting companies of the current training and practice of IntraLS and InterLS. In total, five trainers and 21 employers completed the survey. The profile of these trainers and employers differed from the profile of IntraLS and InterLS practitioners (Robert et al, forthcoming): in contrast to the practitioners who are mostly women, trainers and employers are predominantly men, and in their thirties and forties. Three of the five trainers only teach IntraLS; the other two teach both IntraLS and InterLS. This finding seems to reflect current professional

practice, in which demand for IntraLS is still higher than for InterLS. It also demonstrates that the practice is relatively new as most trainers have only started teaching the course recently. All trainers work with a speech recognition (SR) and a subtitling software and all the courses are taught at MA-level, except for one vocational course.

The IntraLS courses are mostly focused on live subtitling, respeaking techniques, subtitling skills and the use of the SR software, but they end with a (short) introduction on InterLS. The InterLS courses also focus on interpreting skills. This is the case for both HEI trainers and in-house training organised at broadcasters and service providers.

Trainers consider formal training and/or experience in simultaneous interpreting an important prerequisite for successful IntraLS with respeaking, even more so for InterLS, where simultaneous interpreting scores the highest. However, formal training and/or experience in subtitling is considered equally important too, more than consecutive interpreting and translation and this is true for IntraLS and InterLS. When we compare these results to the responses of the IntraLS and InterLS practitioners (Robert et al., Forthcoming), there are quite a few parallels, suggesting that the courses that the practitioners took are very similar to the ones organized at HEIs. Broadcasters and service providers rank formal training and/or experience in subtitling higher than in simultaneous interpreting, for both IntraLS and InterLS. Formal training and/or experience in consecutive interpreting and translation receive lower scores. In other words, their ranking is very similar to that of HEI trainers. However, the scores given for IntraLS are lower than the scores given InterLS, meaning that formal training and/or experience in subtitling and simultaneous interpreting for example is considered less important for IntraLS than for InterLS. In contrast, HEI trainers give similar scores to subtitling and simultaneous interpreting, be it for IntraLS or InterLS. In terms of general skills, multitasking is one of the most important prerequisites, as well as interaction with the SR software, for HEI trainers, broadcasters and service providers. In other words, trainers, practitioners and employers are generally on the same page.

The small number of respondents in this study makes it difficult to draw conclusions for the profession in general. However, the limited number is probably representative of a small population and as such demonstrates the novelty of the practice. This is particularly true for the trainers and confirms the idea that courses on live subtitling at HEI level are still quite rare. In light of the current increasing demand for IntraLS and expected increase in demand for InterLS reported by broadcasters and service providers, we think that designing, developing, testing and validating the first training course for InterLS is more than timely.

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