

## DOCTORAL THESIS

### Interlingual live subtitling

**a research-informed training model for interlingual respeakers to improve access for a wide audience**

Dawson, Hayley

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University of Roehampton

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**Interlingual live subtitling: a research-informed training model for  
interlingual respeakers to improve access for a wide audience**

by

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*A thesis submitted in partial fulfilment of the requirements for the degree of PhD*

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# List of abbreviations

|                   |   |
|-------------------|---|
| <b>AD</b>         | Audio description                           |
| <b>AR</b>         | Action Research                             |
| <b>AS</b>         | Accessibility Studies                       |
| <b>AVT</b>        | Audiovisual Translation                     |
| <b>BBC</b>        | British Broadcasting Corporation            |
| <b>B/VIP</b>      | Blind and partially sighted                 |
| <b>CONT-ADD</b>   | Content addition                            |
| <b>CONT-OMISS</b> | Content omission                            |
| <b>CONT-SUBS</b>  | Content substitution                        |
| <b>CPD</b>        | Continuous professional development         |
| <b>DHOH</b>       | Deaf and hard of hearing                    |
| <b>EQF</b>        | European Qualifications Framework           |
| <b>EMT</b>        | European Master's in Translation            |
| <b>FORM-CORR</b>  | Form-correctness                            |
| <b>FORM-STYLE</b> | Form-style                                  |
| <b>GALMA</b>      | Galician Observatory of Media Accessibility |
| <b>HE</b>         | Higher Education                            |
| <b>HEI</b>        | Higher Education Institution                |
| <b>ICT</b>        | Information Communication Technology        |
| <b>ILS</b>        | Interlingual live subtitling                |
| <b>ILSA</b>       | Interlingual Live Subtitling for Access     |
| <b>ILSer</b>      | Interlingual live subtitler                 |
| <b>ITV</b>        | Independent Television                      |
| <b>LiRICS</b>     | Live Reporters International Certification  |
| <b>MA</b>         | Media Accessibility                         |
| <b>MOOC</b>       | Massive Open Online Course                  |
| <b>NBC</b>        | National Broadcasting Company               |
| <b>RQ</b>         | Research question                           |
| <b>SDH</b>        | Subtitling for the deaf and hard of hearing |
| <b>SI</b>         | Simultaneous interpreting                   |
| <b>SL</b>         | Source language                             |

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|--------------|---|
| <b>SMART</b> | Shaping Multilingual Access through Respeaking Technology |
| <b>SPSS</b>  | Statistical Package for Social Sciences                   |
| <b>SR</b>    | Speech recognition  |
| <b>ST</b>    | Source text   |
| <b>TL</b>    | Target language   |
| <b>TS</b>    | Translation Studies                                       |
| <b>TT</b>    | Target text   |
| <b>TV</b>    | Television  |
| <b>VRT</b>   | Vlaamse Radio- en Televisieomroeporganisatie              |
| <b>WPM</b>   | Words per minute  |

The research for this project was submitted for ethics consideration under the references MCL 17/030, MCL 18/037 and MCL 18/038 in the Department of Media, Culture and Language and was approved under the procedures of the University of Roehampton's Ethics Committee on 22/02/2017, 26/01/2018 and 31/10/2019 respectively.

# Abstract

Respeaking is one of the youngest branches within Media Accessibility (MA) and it is used to make live and pre-recorded television accessible to the d/Deaf and hard-of-hearing (DHOH) community. As audiovisual material is increasingly and globally streamed live, there is a growing demand for this live content to be made accessible in a foreign language. Although intralingual respeaking has become an established practice within the industry, interlingual respeaking is not widely practised. This thesis investigates its possibilities and introduces a training programme to train interlingual respeakers to subtitle live content for both foreign-language and hearing-impaired viewers, illustrating a wide and inclusive notion of MA where access is needed for audiences with and without disabilities.

A methodological framework of Action Research (AR) was adopted in order to carry out experimental research on interlingual respeaking performance and to identify the task-specific skills and the best-suited professional profile for interlingual respeaking. A small-scale pilot experiment, a large-scale main experiment and an interlingual respeaking module formed each stage of AR. Within each stage, participants and trainees (with backgrounds of subtitling and interpreting and language combinations of English and Spanish) received training on interlingual respeaking. Training included dictation, intralingual and interlingual respeaking practice and a final test. Comprehensive data was acquired about their intralingual and interlingual respeaking performance through the analysis of over 300 respoken texts using the NER model (Romero-Fresco and Martínez, 2015) and the NTR model (Romero-Fresco and Pöchhacker, 2017), as well as with questionnaires, recordings and student interaction via the online class platforms.

The results show interlingual respeaking as a complex task in which (live) translation and speech recognition (SR) skills are equally important, but also one that is feasible provided that appropriate training is delivered. As expected, results of the final experimental stage of research demonstrate that interlingual respeaking performance improves after substantial training (16 weeks). Trainees achieved an average overall accuracy rate of 98%, which meets the threshold for acceptable live subtitles (Romero-Fresco & Pöchhacker, 2017). Those who performed well had good dictation, were able to multitask and showed good live translation skills, as well as language, source text (ST) comprehension, target language (TL) expression and memory skills. Results do not point to a particular profile being best-suited to interlingual respeaking.

Based on these findings, a research-informed training model for interlingual respeaking is presented that acts as a framework upon which to base an interlingual respeaking training course. The course is composed of five modules on: (1) Media Access, (2) Dictation and software management, (3) Simultaneous interpreting, (4) Intralingual respeaking, (5) Interlingual respeaking, and two discussion points on: (1) The professional world and (2) New developments in respeaking. This is regarded as an essential step to help consolidate this new discipline as a viable access service and to produce quality live subtitles to benefit a DHOH and foreign community as well as language learners.

**Keywords:** respeaking, interlingual live subtitling, task-specific skills, training, media accessibility

# Chapter 1

## Introduction

*'Access was previously thought to concern exclusively or mainly specific groups of people, it is now understood to concern all human beings'.  
(Greco, 2018, p. 211).*

As societies have acknowledged various forms of social diversity, they have made efforts to develop new forms of accessibility to break down barriers to communication (Pöschhacker & Remael, 2019). A case in point is respeaking, which is a technique used to produce live subtitles. It is one of the newest modes of translation and is situated within the subfields of Audiovisual Translation (AVT) and Media Accessibility (MA). It is used to make live and pre-recorded television (TV) accessible to a wide audience and has been defined as:

A technique in which a respeaker listens to the original sound of a live programme or event and respeaks it, including punctuation marks and some specific features for the d/Deaf and hard of hearing audience, to a speech recognition software, which turns the recognised utterances into subtitles displayed on screen with the shortest possible delay (Romero-Fresco, 2011, p. 1).

Intralingual respeaking (from one language into the same language) was first implemented in 2001 by the British Broadcasting Corporation (BBC) in the UK and by Vlaamse Radio- en Televisieomroeporganisatie (VRT) in Belgium (Romero-Fresco, 2011); however, interlingual respeaking (from one language into another) has yet to take off. As audiovisual material is increasingly and globally streamed live, there is a growing demand for live content to be made accessible in foreign languages. This requires interlingual respeaking, which is intended to produce interlingual live subtitles for a wide audience, including hearing-impaired, hearing and foreign viewers, children, elderly people, and those with cognitive impairments. This reflects the broad and inclusive range of processes used in MA, where access is needed for audiences with and without disabilities (Romero-Fresco, 2018).



This thesis will explore where interlingual respeaking is situated within the fields of AVT and MA; additionally, it will investigate the viability of interlingual respeaking and will present the results of empirical work from the largest study to date. The study focusses on a language combination of English and Spanish but hopes to create a research-informed training model for interlingual respeaking that can be applied to different languages. The training model will act as a framework upon which to base an interlingual respeaking training course. The training course has been conceived as an original and valuable contribution to the field by introducing training in a new technique that is in demand by governmental regulators, user associations, and subtitling companies. Interlingual respeaking has the potential to revolutionise access to live content, whether TV or live events, in a foreign language for people with and without disabilities. This research is a necessary prior step in order to achieve this goal. Due to its display as subtitles, intralingual respeaking was initially adopted by audiovisual translators instead of by the interpreting community and has since been performed by subtitlers (Romero-Fresco and Eugeni, forthcoming). However, the language transfer in interlingual respeaking brings the process closer to simultaneous interpreting (SI) and brings into question the necessary skills and best-suited professional profile for the task.

### **1.1 Demand for interlingual live subtitles**

Media corporations are required to address a wider spectrum of end users than ever before as audiences increasingly use subtitles for a wide range of purposes (Davies, 2019). Action on Hearing Loss (2018) states that there are 11 million people in the UK living with hearing loss. According to the European Federation of Hard of Hearing People, not all countries effectively gather data on the statistics of DHOH people in their nations. Spain is one of these nations. There are an estimated 1.064 million people with official hearing loss in Spain; however, the unofficial figure of those with hearing loss is estimated to be 3.5 million (EFHOH, 2015). Current hearing loss figures around the world exceed 700 million and are expected to rise to 900 million by 2025, highlighting that the societal demand for access to content is continuously increasing (Romero-Fresco, 2019a).

In addition to providing access for those with a sensory impairment, interlingual live subtitles also have the potential to cater for other audiences, such as foreign viewers. These subtitles could also be used for live global news and programmes broadcast in public buildings where silence is required, and for an

increasing number of viewers who consume audiovisual content with subtitles on their mobile phones. Even intralingual subtitles are not solely used by those with a hearing impairment but also by the audiences mentioned above. Although the following refers to pre-recorded subtitling, an example of the demand is the stark figure of approximately 85% of Facebook videos being watched without the sound (Davies, 2019) by a wide audience. Given the fact that a total of 5 billion YouTube videos are watched every day, YouTube has recognised the importance of subtitles to make content accessible (Caeg, 2019).

In 2018, 602,000 people immigrated to the UK, with the most common reasons being work and study (Office for National Statistics, 2019). It is expected that those who immigrate to the UK for these reasons already possess a high working level of English and would perhaps not require the same level of access compared to those who were granted asylum or resettlement, a figure which amounts to 14,985 people in the year ending March 2019 (*ibid.*). According to data from the Home Office, in 2019, the total number of people granted asylum was 9,191, which is up by 34% from the previous year, and 5,794 people were granted protection under resettlement schemes (*ibid.*).

There is a high demand for interlingual respeaking to provide access to content on television, on the internet, at live events (Moores, 2020), and in the classroom (Romero-Fresco et al., 2019) as a form of social integration. Furthermore, interlingual respeaking has the potential to aid language learning. English is spoken at a functional level by 1.75 billion people (25% of the world's population), and there are more non-native speakers of English than there are native speakers (British Council, 2013). To give a brief example of how interlingual respeaking could foster language learning, let us consider the fact that knowledge of a foreign language is limited for some native speakers of English. Recent figures highlight that the UK is in a foreign-language crisis as the number of students taking a modern foreign language at GCSE or A Level is historically low with a 45% drop since 2002 (Jeffreys, 2019). Statistics on self-reported foreign-language skills show that only 34.6% of the UK's population aged 25–64 know one or more foreign languages (Eurostat, 2019), which is a low figure compared to Spain (54.3%), Belgium (78.6%), the Netherlands (86.4%), and Sweden (96.6%) to name but a few countries (*ibid.*). Under UK government plans, 75% of Year 10 pupils are expected to take a GCSE in a modern language by September 2022, with that number rising to 90% of pupils by 2025 (House of Commons, 2018). Making live content accessible in a foreign language may also aid a much-needed surge in language learning for students, in the UK in particular. Having live media and other events subtitled from English

into a foreign language, or vice versa, has the potential to frequently expose students to a foreign language and could act as an additional resource for language learning.

## **1.2 Research in respeaking**

Respeaking is still considered to be a new development but has rapidly evolved over the last decade. Research into intralingual respeaking began in 2006 when a special issue of the academic journal *InTRAlinea* focussed solely on respeaking. Since then, much research has been conducted on intralingual respeaking and has explored the process of respeaking (Romero-Fresco, 2011; Eugeni, 2003, 2008); the training of respeakers (Arumí Ribas and Romero-Fresco, 2008; Romero-Fresco, 2012a); the reception of respoken subtitles (Romero-Fresco, 2015, 2016; Fresno, 2019); and new technologies (Eugeni and Mack, 2006).

So far, research on interlingual respeaking is scarce, and recent outputs have been produced mainly by the Interlingual Live Subtitling for Access project (ILSA)<sup>1</sup> funded by the European Commission from September 2017–August 2020. Survey-based research has explored the profile of the interlingual live subtitler (Robert et al., 2019a) and perceptions of training (Robert et al., 2019b); theory-based research has looked into the competences required for interlingual respeaking (Pöchhacker and Remael, 2019); and initial experimental research has tested interlingual respeaking performance (Dawson, 2019). ILSA is the first sustained and international research project to look at developments in interlingual respeaking. It aims to identify the skills and the profile of a new professional – the interlingual live subtitler – and to develop, test, and validate the first training course on interlingual respeaking with course materials and provide a protocol for the implementation of this field in three real-life scenarios: TV, political/social settings, and the classroom.

The work being completed for ILSA is divided into seven intellectual outputs: an assessment of the current intralingual live subtitling practice and training (IO1); the identification of the subtitling, interpreting, and respeaking skills required for the job (IO2 and IO3); the development, assessment, and validation of a specialised course and its materials (IO4, IO5, and IO6); and the creation of a protocol to transfer the results of the project to society for the implementation of interlingual respeaking

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<sup>1</sup> <http://galmaobservatory.eu/projects/interlingual-live-subtitling-for-access-ilsa/>

in real-life scenarios (IO7). This doctoral research project predates ILSA. In a very timely fashion, when the ILSA project started, the main experiment of this research was conducted within the framework of an international team of researchers. This allowed more scope for the design and discussion of the main experiment, since it was discussed and considered by a team of experts in live subtitling. The main experiment of this research project also informed part of IO2 of the ILSA project, as it aims to identify the task-specific skills required for interlingual respeaking and to determine the best-suited professional profile for an interlingual respeaker. While the dynamic context of ILSA has been crucially beneficial for the main experiment, the aim of the two projects differ. The ILSA project is primarily to produce as a final output a 'ready to use' training course in ILS through respeaking. This research, on the other hand, is to investigate the viability of interlingual respeaking more broadly within the field of Translation Studies (TS), and to develop a research-informed training model, of which the first interlingual respeaking course is a prototype. This investigation of training is also broader and considers training issues within a wider educational framework. The resources that have been developed for the ILSA project can also be used as source material for the research-informed training course. A comparison of the ILSA course and this research-informed training course is available in Section 8.6.

### **1.3 Aims of this research**

This thesis aims to answer the following research questions (RQs) in response to interlingual respeaking demand:

Research question 1 (RQ1): How have existing research and practice led to the emergence of interlingual respeaking within AVT?

Research question 2 (RQ2): Is good quality respeaking across two languages feasible?

Research question 3 (RQ3): How can quality in interlingual respeaking output be measured?

Research question 4 (RQ4): What are the required task-specific skills for interlingual respeaking?

Research question 5 (RQ5): What is the best-suited professional profile for an interlingual respeaker?

Research question 5 (RQ6): How can existing training models and approaches inform suitable training for interlingual respeakers?

The RQs above have been drawn up to explore a logical development of interlingual respeaking. The questions begin with the emergence of interlingual respeaking, its feasibility, its quality, and what is required to perform the task. Then, the results of RQ1–RQ5 should allow for pertinent conclusions to be drawn in order to inform training for interlingual respeaking.

#### **1.4 Outline of this research**

**Chapter 2** explores the key concepts instrumental to this research and the context of respeaking. The theoretical focus of this chapter aims to answer RQ1 as it introduces the stance taken on the relationship between AVT and MA and explores research and practice in subtitling, interpreting, and respeaking. It situates live subtitling within the field and details the landscape of intralingual live subtitling over the past 20 years, including broadcast, demand, training, certification, and quality assessment. The recent progression of interlingual respeaking is detailed as well as the current practice and current projects on interlingual respeaking, such as ILSA and Shaping Multilingual Access Through Respeaking Technology (SMART), recent research, initial training, quality assessment, and the need for the development of training for interlingual respeakers.

**Chapter 3** focusses on the research framework, methodology, and methods employed during this research. The chapter frames the research within the methodological framework of Action Research (AR), situating it within Audiovisual Translation Studies and MA. The experimental training aspect is introduced through a ‘train, practice and test’ approach, forming a spiral of AR, in which the first experiment informs the second and so on. A social-constructivist approach to training is used to foster a participant/ learner-centred approach to training. The chapter also evaluates the chosen methods for data collection and critical interpretation, such as the use of the statistical software Statistical Package for Social Sciences (SPSS) for quantitative data analysis and NVivo for qualitative data analysis. The advantages and limitations of the research framework, methodology, and methods are also discussed. Approaches to training used within TS will be discussed in Chapter 7.

Before conducting substantial practical research, the feasibility and quality of interlingual respeaking are tested through a pilot study presented in **Chapter 4**. This study marks the beginning of the AR spiral mentioned above and presents the results of the first known study on interlingual respeaking, in which eight participants respoke three short videos from English into Spanish. The results shed light on RQ2

and RQ3, as the focus of the chapter is on the feasibility of good quality interlingual respeaking, how quality can be measured, and what learnings can be taken from the experimental set-up and participant performance to inform a large-scale study.

**Chapter 5** presents the empirical data and findings of the main study, the largest known study of interlingual respeaking to date. The chapter has a practical focus, and the analysis covers the edition and recognition errors of intralingual respeaking as well as the translation and recognition errors of interlingual respeaking exercises carried out during the experiment. The chapter focusses on what participants did to perform well and what they need to improve to produce a successful respoken text. Results are put into the context of requirements for interlingual respeaking training and aim to inform the interlingual respeaking module of the first known course on the subject.

From January to May 2019, an interlingual respeaking course was delivered online by the University of Vigo to seven trainees by the present researcher. **Chapter 6** presents the course and results, which consisted of three modules: SI, intralingual respeaking and interlingual respeaking. The interlingual respeaking module is informed by research carried out for the small-scale and large-scale experiments presented in Chapters 4 and 5. A social-constructivist approach to training is featured heavily as the interlingual respeaking module encouraged a collaborative approach to learning, facilitated trainee learning through research, and collected more data to inform the final stage of this AR project. Sections on quantitative data analysis in Chapters 4, 5 and 6 may seem dense but are necessary to present. This chapter concludes the practical section of this thesis and aims to finalise the answers to RQs 2, 3, 4, and 5, which are fundamental to creating a training model for interlingual respeaking.

**Chapter 7** marks a shift in focus from the practical to the theoretical. It aims to critically review useful literature on approaches to translator, interpreter, and respeaker training, all of which are evaluated within the context of interlingual respeaking training. Relevant approaches to training in the 21<sup>st</sup> century are explored, such as creating a learner-centred approach and considering accessibility and flexibility in training, including face-to-face versus blended learning and online delivery. This overview of approaches to training aims to inform the creation of a training model for interlingual respeaking presented in the penultimate chapter.

In **Chapter 8**, the practical recommendations for training are brought together from the three stages of AR with the approaches to translator training presented in Chapter 7 in order to create a research-informed training model for interlingual respeaking. The task-specific skills and competences for interlingual respeaking are used to draw up the training model, which acts as the framework for a training course. As an instantiation of the training model, a research-informed training course is designed. The proposed training course covers a six-month period and includes five modules on Media Access (and subtitling), dictation and software management, interpreting, intralingual respeaking, interlingual respeaking and two discussion points on the professional world, and new developments in respeaking. Suggestions for units are made within each module, which also detail recommended material and tasks to train trainees to deal with the complexity of interlingual respeaking, such as high speech rates, different speakers, and varying genres of television and live events. The focus is placed on minimising translation and recognition errors with exercises that focus on preventing the most common subtypes of translation errors, combatting recognition errors, and making live corrections.

The conclusions of this research project are presented in **Chapter 9**, which summarises the answers to the RQs presented throughout this thesis. The chapter also explores how the practical findings and theory can increase awareness of interlingual respeaking, increase training by use of the training model, and ensure that the profession of an interlingual live subtitler can become a reality. The chapter ends with ideas for future research, such as integrating accessibility into training, exploring other language combinations, studying delay, increasing provision of the access service, and the need for audience reception studies in interlingual respeaking.

A series of **appendices** that support the empirical study is available on a USB. The appendices include the questionnaires used, an overview of the individual performance of each participant and trainee, and all available recordings of intra- and interlingual respeaking exercises<sup>2</sup>. Although the data and information included throughout this thesis and its appendices are dense, they offer helpful insight into the type of translation and recognition errors incurred. It is also hoped that by making the data available, it could inform further research in this area.

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<sup>2</sup> It must be noted that not all recordings are available as participants did not always record their exercises and, unfortunately, some have been lost due to technical faults.

# Chapter 2

## Concepts and context of respeaking

### 2.1 Introduction

Interlingual respeaking is a product of the evolving field of TS. As explained in the introductory chapter, interlingual respeaking entails a process similar to that of interpreting, being carried out to produce an output similar to subtitling. The multiskilled nature of the task along with the wide audience it caters for means that many areas must be explored to gain a full understanding of the nature of respeaking and where it belongs within AVT and MA. The concepts and context that surround interlingual respeaking are interdisciplinary in nature: they touch upon other fields and their specific methodologies, such as accessibility, translation, interpreting, subtitling, technology, and reception studies. This chapter will consider key literature published in AVT and MA to provide a broad overview of the subject area and to contextualise interlingual respeaking as the next natural step of research in subtitling.

This chapter is organised into three main categories: (1) MA and AVT; (2) respeaking; and (3) training. Each category explores the key concepts relevant to this research, discusses the publications that have shaped the thinking behind this project, and provides definitions for terms that are used in this thesis. First, MA and AVT are defined, and recent shifts within these areas are explained with a focus on how interlingual respeaking contributes to them. The evolution of AVT is explored with regard to subtitling practices, technology, and legislation. Second, a brief history of respeaking is provided along with an overview of the similarities between respeaking and interpreting, demand, certification, and recent research. It is important to note that Chapters 4, 5, and 6 focus on how experimental research can inform future training while Chapter 7 focusses on the existing theoretical elements that relate to training. Therefore, the final section of this chapter discusses the current training in intra- and interlingual respeaking and the definitions of training terms that are used throughout this thesis, such as learning outcomes, competence, and skills. These terms are defined within the context of TS and education. This chapter leads up to the exploration of theoretical literature that will be discussed in Chapter 3.



## 2.2 The relationship between AVT and MA

Most scholars agree that TS became first recognised as an academic discipline in the second half of the 20<sup>th</sup> century (Munday, 2016). Since then, it has gained momentum, with an expansion of translation and interpreting programmes at university level as well as conferences, books, and journals dedicated to research in TS; there are also many international organisations committed to bringing together national associations and professional translators (*ibid.*). AVT and MA have developed at each other's 'crossroads' (Remael, Orero and Carroll, 2012). TS is primarily understood as the discipline that studies theories and applications of translation across a wide range of fields from literature to medicine. By contrast, MA covers

a broader interdisciplinary area that criss-crosses many fields, including AVT, but that cannot be entirely nor exclusively reduced to any of them because it is a proper subdomain of a new field, which [is referred] to as Accessibility Studies (AS) (Greco, 2019a, p. 19).

Before discussing the relationship between AVT and MA, it is important to differentiate Disability Studies as an established discipline and AS as an emergent one. At the turn of the last century, Disability Studies was described as 'an emergent field with intellectual roots in the social sciences, humanities, and rehabilitation sciences' (Albrecht et al., 2001, p. 2). Disability Studies has since become an established discipline, and much research has explored sub-areas of study, such as feminist disability studies (Garland-Thomson, 2005) and critical disability studies (Meekosha and Shuttleworth, 2017) to name but a few. The Society for Disability Studies describes the field as one that 'sits at the intersection of many overlapping disciplines in the humanities, sciences and social sciences' (Society for Disability Studies). Disability is recognised when impairments interact with their environments (Goodley, 2017, p. 1). Disability Studies, AVT, and MA, as well as the emergent field of AS, challenge environments and aim to make them more accessible. Greco (2018, p. 205), one of the first scholars to examine MA within both the fields of TS and Human Rights, defines AS as 'the field concerned with the investigation of accessibility processes and phenomena, and the design, implementation and evaluation of accessibility-based and accessibility-oriented methodologies'. Although the accessibility movement started almost a century ago and has developed strongly in the areas of information and communication

technologies (ICT)<sup>3</sup> and media, it appears that the term 'Accessibility Studies' is yet to be used beyond MA (Greco, 2016a; Jankowska, 2019; Romero-Fresco, 2019a).

Szarkowska and Wasylczyk (2018) explain that, traditionally, AVT aims to translate media products from one language into another mainly through subtitling, dubbing, or voice-over. Besides the interlingual transfer that gives audiences access to foreign audiovisual texts, other modalities have also transpired. Subtitling is an access service, which, in some cases, uses special features such as sound labels and colours to identify different speakers to cater for a DHOH audience and give a hearing audience access to the text when the sound cannot be used. Audio description (AD) is an access service that a blind and visually impaired (B/VIP) audience typically benefit from and is defined by Fryer (2016, p. 1) as 'a verbal commentary providing visual information for those unable to perceive it themselves'. Some recent modalities of AVT are intra- and interlingual live subtitling, which aim to cater for a wide audience. Other recent translation-based modalities include enriched subtitles and live ADs (Greco and Jankowska, forthcoming).

MA has been defined by Greco (2016) as the research area that deals with theories, practices, services, technologies, and instruments that provide access to media products, services, and environments for people who cannot completely access the content in its original form. As explained at the beginning of this section, MA criss-crosses many fields including AVT. The close link between AVT and MA is generally accepted (Remael et al., 2012) and has recently been highlighted as being:

increasingly envisioned and funded to play a socially inclusive role by fostering the integration of sensory impaired members of the community within mainstream society as far as their access to cultural commodities and venues is concerned (Pérez-González, 2014, p. 2).

Hermans (1997, p. 10) views translation as a 'socially regulated activity', as translations are produced by individuals for the use of other individuals who all belong to a social system. Translations therefore have a social function and a socio-communicative value (Wolf, 2007). Given the fact that all types of translation aim to give access to others, the socialisation of TS has a role in social inclusion. Take interlingual respeaking as a specific example: it does not only provide access for those with an impairment but also helps to break down linguistic barriers (Díaz-Cintas, 2005; Matamala and Orero,

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<sup>3</sup> It is understood that MA within TS is broad and considers accessibility of media products. By contrast, in ICT, MA relates primarily to digital content created and posted on the web.

2007), just as other interlingual forms of AVT seek to do. In this way, respeaking intends to improve certain aspects of society related to audiovisual media and communication and allow for social integration, thus belonging to both subfields of AVT and MA.

The idea of MA pertaining to audiovisual media has now shifted to MA providing access for those who do not have complete access to media in its original form (Greco, 2016b). Szarkowska and Wasylczyk (2018) argue that accessibility goes far beyond the parameters of media and that MA could be considered as an umbrella term that intersects with AVT, while Greco (2019) does not consider AVT as being included within MA or vice versa, but sees them rather as two areas that exist in unison. Figure 2.1 illustrates the coexistence of AVT and MA and highlights the latter as belonging to the broader emergent subfield of AS (Greco, 2018).

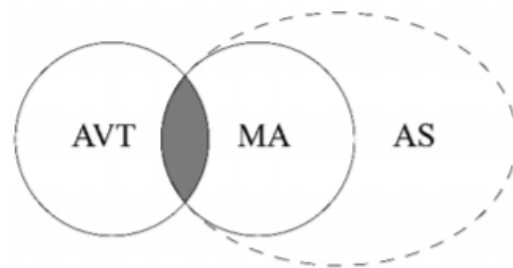


Figure 2.1: The relationship between AVT and MA (Greco, 2019a).

This thesis supports Greco's view and placement of MA alongside AVT and within AS, as this perspective gives access to the widest possible audience, which is what interlingual live subtitles aim to provide.

### 2.2.1 Shifts in MA

Aside from the relationship between AVT and MA, recent shifts in MA have also come into play (Greco, 2018). The first shift being one from particularist accounts to universalist accounts of accessibility; this means that access was previously thought to concern specific groups of people, but it is now understood to concern everyone (*ibid.*). The second shift is from maker-centred to user-centred approaches, and the third is from reactive to proactive approaches.

A comparison of particularist accounts versus universalist accounts of MA is presented in Section 2.2.2. However, given the fact that universalism is a loaded notion, space has been made to briefly discuss it here. In the context of MA, universalism and particularism have a specific meaning. Universalism is not understood here as a 'cultural universalism', which suggests that values and ideas can be measured against universal standards (Andersen, 2001; Kohfeldt and Grabe, 2014). In TS, the generalised meaning refers to internationalisation, which 'aims to redress imbalances in the respective disciplines by opening their lines of enquiry up to non-European/non-Western sources' (Susam-Saraeva, 2014, p. 335). By contrast, in the fields of Disability Studies and Human Rights, universalism has tended to be understood as an approach allowing maximal inclusion of users. This understanding of universalism is positioned in opposition to particularism, which supports specific communities of users. In terms of a wide audience, the definition of a universal vision was perhaps first given by Stephanidis and Emiliani (1999) in the field of human-computer interaction. This field expanded its focus to other groups before acknowledging that 'accessibility can no longer be considered as a specific problem of people with disabilities [but of] society at large' (Stephanidis and Emiliani, 1999, p. 22). The subfield of MA also saw shifts from specific audiences to all audiences. First, MA took on particularist accounts since it concerned only those with sensory barriers (Orero, 2004), and then later to people with sensory and linguistic barriers (Díaz-Cintas, 2005; Matamala and Orero, 2007). MA now appears to be moving towards universalism, which, in the subfield of MA, 'concerns access to media products, services, and environments for all persons who cannot, or cannot completely, access them in their original form' (Greco, 2018, p. 211). The definition of a universalist account of MA provided by Greco (2018) will be used in this thesis, as it reflects the wide audience that interlingual live subtitles cater for and is specific to the subfields to which interlingual live subtitling belongs.

All three shifts (particularist to universalist accounts, maker-centred to user-centred approaches, and reactive to proactive approaches) can be applied to the conceptual framework of interlingual respeaking research and training, which will be featured throughout this chapter. This thesis supports a wide view of MA and acknowledges that MA **includes** the provision of access services in the form of SDH for a DHOH audience, which began in the late 1970s (Romero-Fresco, 2018a) as well as AD for a B/VIP audience, which developed much later, proliferating in the late 1980s and 1990s (Fryer, 2016). However, it also recognises that SDH and AD provide access **beyond** users with sensory impairments.

At this point, it is fitting to establish a definition for what is understood by MA for the purposes of this research:

Media Accessibility, which falls under Disability Studies and Accessibility Studies, refers to how audiovisual texts and live events can be heard, seen, or read by all through practices such as (live) subtitling and audio description for those who either cannot completely receive the content in its original form, or for those who wish to extend their level of comprehension [my definition].

It is hoped that the above definition of MA complies with universalist accounts and maintains subtitling and AD at its centre, highlighting them as access services for all. As discussed so far, the scope of universalist accounts of MA is broad and is one that includes users with sensory impairments as well as 'the elderly, children, people with learning disabilities and people without disabilities who may need linguistic access to audiovisual content in a foreign language' (Romero-Fresco, 2018, p. 190). It is also intended for those who want to increase their access to an audiovisual text or live event, their exposure to foreign languages, or 'have more control over the language combination(s) they want to follow' (Díaz-Cintas, 2015, p. 632).

### **2.2.2 Particularist versus universalist approaches to MA**

Particularist accounts define accessibility in relation to persons with disabilities and frame MA by services. Particularist accounts of accessibility tend to be restrictive and view SDH and AD as access services that are only used by the DHOH and B/VIP audiences, respectively. However, such services can also provide access for hearing and sighted audiences, such as the use of SDH for when the sound cannot be used on TV, and AD when the screen cannot be viewed or for restrictive theatre views. In short, particularist accounts limit access to specific groups of users, which can prove to be beneficial for certain groups, but do not cater for all. In contrast to particularism, Greco (2016a, 2016b) argues that framing MA services contradicts the meaning of accessibility and creates a ghetto effect. Universalist accounts consider accessibility as being relevant for all (Greco, 2019b). In other words, universalist accounts do not limit access to specific groups. An extensive level of access, in the form of an audiovisual text containing both AD and subtitling, may not be preferred by some users as it could be deemed distracting. Having access also means having the ability to interact with and enjoy the content (Greco, 2018). Considering the points above, it seems apt for interlingual live subtitling to be developed with universalist accounts of MA in mind. This approach regards the service as an

opportunity to widen access for TV broadcasts and live events while being inclusive towards those with sensory impairments. It also has the potential to support language learning, as speakers of multiple languages may be able to choose in which language they would like to access live TV should interlingual live subtitles be made available on demand. These aspects create an inclusive environment to make media accessible to as many users as possible.

### **2.2.3 Joining forces in research**

To round off this first section on the relationship between AVT and MA, it seems relevant to refer back to the growing relationship between the two fields with the following thought:

The growing prominence, diversity and clout of AVT studies is now also signalled by the inception of collective research projects funded by international stakeholders, the formation of transnational research groups, and the participation of AVT scholars and trainers in successful programmes of collaboration with industry partners (Pérez-González, 2019, p. 1).

MA has developed alongside other subfields of AVT, as large-scale research projects have been informing the industry of audience requirements, thereby resulting in enforced legislation and guidelines. However, there has been a problematic focus on quantity as opposed to quality (Remael, Orero and Carroll, 2012). The Understanding Media Accessibility Quality project responds to this threat; it recognises that as quotas are now being met in terms of the quantity of access services being produced in Europe, the focus must shift to quality in translation in general and particularly in relation to Machine Translation. Understanding Media Accessibility Quality aims to conduct the first comprehensive analysis of the situation of quality in MA and provide a theoretical framework to better understand it. Other projects in this area such as ADLAB, ADLAB Pro<sup>4</sup>, and DTV4ALL<sup>5</sup> also highlight MA as a research priority for the AVT field while taking into account training and audience reception. Expanding the number of transnational research groups, the University of Vigo launched the Galician Observatory for Media Accessibility<sup>6</sup> (GALMA) in 2017, funded by the Galician government. This research group's aim is to promote accessibility in the Galician media through research and training, which has strands in accessible filmmaking and live subtitling. Expert members of the field of AVT and

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<sup>4</sup> <http://www.adlabproject.eu/>

<sup>5</sup> <http://www.psp-dtv4all.org/>

<sup>6</sup> <http://galmaobservatory.eu/projects/galician-observatory-for-media-accessibility-galma/>

MA have joined forces to work on various projects that also form part of GALMA; the projects most pertinent to this research are ILSA<sup>7</sup> and SMART<sup>8</sup>. MA projects have been extended to the Media Accessibility Platform<sup>9</sup>, a new platform that intends to gather and bring together information about MA from across the world. Although still in its beta version, it is the first cloud-based online platform for MA with the main objective of exchanging information and best practice between stakeholders. The Media Accessibility Platform allows for learning from one another to occur and highlights the recent surge of interest and research within MA and AVT. The ILSA project is the newest addition to this vast array of applied research that belongs to MA and AVT and is the most relevant for this research project. The main experiment of this research has successfully informed IO2 of the ILSA project, which is one of ILSA's deliverables; also, ILSA and this thesis aim to inform the future training of interlingual respeakers and influence how interlingual respeaking is received as a profession within the industry.

### **2.3 Historical context of AVT**

Now that interlingual respeaking has been situated within the AVT and MA, a brief outline of the historical context of AVT and subtitling is required in order to contextualise the developments from pre-recorded to live subtitling. Academic articles dealing with AVT from a translational perspective came about in the late 1950s and early 1960s (Díaz-Cintas, 2004). During the 1960s, AVT was 'conceptualised as an aesthetic form of mediation subject to a range of extra-linguistic constraints pertaining to the medium in which films are embedded' (*ibid.*, p. 26). Each decade, attempts have been made to categorise texts and their functional characteristics (Reiss, 1971). The late 1980s and early 1990s saw the mapping of TS, in which AVT was placed within literary translation and cinema translation by Snell-Hornby (1988, 1995) and Bassnett (1980, 1991) (Pérez-González, 2014). Theory in AVT has developed over the past three decades as scholarly work took off due to the surge of TS in the 1990s (Pérez-González, 2014) along with the surge in global media products. Over the past 15 years, theory in AVT has evolved as technology has advanced and awareness of end users' needs has developed.

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<sup>7</sup> <http://galmaobservatory.eu/projects/interlingual-live-subtitling-for-access-ilsa/>

<sup>8</sup> <http://galmaobservatory.eu/projects/shaping-multilingual-access-through-respeaking-technology-smart/>

<sup>9</sup> <http://galmaobservatory.eu/projects/map/>

Since the early 1990s, the internet has been the biggest catalyst for changes in audiovisual communication and translation and has impacted culture, commerce, and education (Díaz-Cintas, 2015). The internet has made the world smaller and smarter, substantially increasing the demand for audiovisual content to be made accessible to a wide audience. Georgakopoulou (2019) provides an updated and insightful overview of the role of technology within the field. She argues that AVT is a by-product of developments in film, video, and broadcasting technologies, emphasising that language and technologies have always accompanied one another. The digital revolution in the 1990s resulted in developments within the subtitling industry with concurrent technological advances and saw language technologies being introduced on a large scale to increase productivity and reduce project turnarounds and costs. Some examples are the use of speech recognition (SR) software in respeaking (introduced in 1997 with IBM's ViaVoice and Dragon System's NaturallySpeaking), Translation Memories and Machine Translation (*ibid.*).

#### **2.4 Historical context of subtitling**

As developments in AVT took place, subtitling practices also evolved. Ivarsson (2004) describes what could be considered as the first developments in AVT. He outlines the process of subtitling, which was required shortly after the invention of film and especially during the late 1920s as 'the interplay between sight and sound became the biggest concern for filmmakers' (Pérez-González, 2014, p. 44). Intertitles were introduced to cinema in 1903 and were first used as descriptive titles that were drawn or printed and filmed while displayed between sequences in a film; however, they were seldom used overlaid on moving pictures (Ivarsson, 2004). Translation in this era was much simpler than now as intertitles of the translated text were filmed and reinserted into the picture (*ibid.*). After the first sound film in 1927, various techniques were used across Europe to improve the subtitling process (*ibid.*). Photographical, mechanical, chemical, and laser processes were tried and tested, and, although subtitles are now used differently, these first concepts formed the basis for what we know, even if they have now become automated with the invention of computers and dedicated subtitling software. This is an important place of study to start with in order to establish an understanding of how practices evolve; going forward, this research project must ensure that processes and practices are well documented from the beginning.



### 2.4.1 Subtitling for the DHOH (SDH)

The rise of MA has coincided with a wider demand for access services, and SDH has quickly evolved in recent decades (Szarkowska, 2012). SDH, as a form of subtitling, is usually produced intralingually and includes special features such as sound labels and the use of colours to identify different speakers; it is used for instances when a viewer does not have access to the sound (Neves, 2005). Its features allow SDH to cater for a wide audience, including scenarios when the sound cannot be heard or used in a given space.

In Europe, the beginning of SDH is linked to TV. In the UK, the BBC announced its Ceefax Teletext service in 1972, and, in the same year, the French TV channel France 2 used a teletext-based system to subtitle the weather forecast (Romero-Fresco, 2011). However, such digital text services in the UK are now inoperative, as BBC Ceefax, the world's first teletext service, ended in 2012 (Hand, 2012) and the Red Button text function is set to come to a close in early 2020 (BBC News, 2019). SDH has had a staggered start across Europe: the UK and France started providing the service in 1979, Germany in 1980, Belgium in 1983, Italy in 1986, and Spain and Portugal in the 1990s (Romero-Fresco, 2011). As for live SDH, production methods have changed and evolved over time, and respeaking is considered to be the most appropriate method to provide access to live programmes for a DHOH audience. In a 2011 report entitled *State of subtitling access in the EU*, a vision to subtitle '100% of programmes in public TV all over the European Union by 2020 with simple technical standards and consumer-friendly rules' was proposed (The European Federation of Hard of Hearing People, 2011, p. 3). Developments in SDH can be seen in interlingual SDH, which shares some elements with its intralingual siblings (Szarkowska, 2012) and the use of SR software to produce live subtitles (see Section 2.5.3). A demand for access services for live programmes brings SDH closer to an established mode of translation and interpreting (Remael, Reviere and Vandekerckhove, 2016), which is essential in order to make audiovisual texts accessible to a wide audience with a particular demand for improved access services.

Around 10% of broadcast viewers use subtitles regularly; this figure increases to 35% for some online content of which many viewers are not hard of hearing (BBC, 2016). A report from the Office of Communications (2015) states that of 7.5 million users of SDH in the UK, 6 million do not have hearing loss. What was once a question of accessibility, foreign-language broadcasts are now becoming an

inescapable part of visual media (Davies, 2019). Subtitle use has increased with the usage of mobile devices, and subtitles now provide access for wider audiences who consume audiovisual media on their daily commutes or who need to read and process large amounts of information.

#### **2.4.2 The growth of audiovisual services**

Texts such as *Audiovisual Translation: Subtitling* (Díaz-Cintas and Remael, 2007), *Audiovisual Translation. Language Transfer on Screen* (Díaz-Cintas and Anderman, 2009), and *Audiovisual Translation in a Global Context* (Baños Piñero and Díaz-Cintas, 2015) provide critical overviews of how the demand for subtitles has increased. These volumes show how corporations such as the BBC and Independent Television (ITV) more than doubled their number of channels at the beginning of the 21<sup>st</sup> century. New channels across Europe have launched, and the film industry has flourished with the influx of film festivals, DVDs, and the internet (Díaz-Cintas and Anderman, 2009). Foreign films and TV series, which would not usually be made accessible to a foreign audience with a language barrier, are becoming increasingly popular via streaming services. One example is the Spanish-language series *La Casa de Papel*, known in English as *Money Heist*, which was deemed the most important Netflix series at the end of 2019, – 44 million households watched it across non-English language territories (Douglas, 2019). Another is the Oscar-winning film *Parasite*, which is the first non-English language film to win best picture and, despite already being available on DVD and via streaming services in the US, took more than \$501,000 at cinemas the day after the Oscars ceremony (Pulver, 2020).

As the examples above show, non-English language products are being embraced by foreign audiences, which calls for the content to be made accessible in foreign languages. The growth of on-demand audiovisual services has changed the way audiences consume content, with terms such as binge-watching and cord-cutting being used to describe audience behaviour (Georgakopoulou, 2019). Being able to consume audiovisual content on different devices has also impacted how it is being consumed and produced (*ibid.*). For example, more than 6 billion hours of YouTube video are watched each month (Caeg, 2019) and corporate video is on the rise. Also, Massive Open Online Courses (MOOCs) have become popular in the education sector (Georgakopoulou, 2019) and need to be made accessible; within the field of TS, the TraMOOC<sup>10</sup> project is a notable example of this.

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<sup>10</sup> <http://tramooc.eu>

The boom of audiovisual content and the breadth of its consumption has led to an increase in subtitling practices in an attempt to manage the quantity of available content (Georgakopoulou, 2019), hence the demand for live subtitling. Before interlingual respeaking, the costly and time-consuming production of interlingual live subtitles required a stenocaptioner to produce live subtitles from an interpreter's output (*ibid.*). However, professionals are now dictating their interpretations into SR software, which is an alternative way of creating interlingual live subtitles. Díaz-Cintas (2015, p. 642) notes that 'the mantra of the subtitling companies can be summarised in three key concepts: (low) costs, (speedy) turnovers and (high) quality'. So far, the nature of interlingual respeaking responds to this socio-economic need in two ways. First, respeaking is cost-effective (Lambourne, 2007) compared with other methods of live subtitling, such as stenotypy – 'a system of machine shorthand in which letters or groups of letters phonetically represent syllables, words, phrases and punctuation marks' (Encyclopaedia Britannica) – which is of a high cost (Lambourne, 2007) or Velotype – 'a syllabic chord keyboard which allows the user to press several keys simultaneously, producing syllables and words rather than letters' – (Romero-Fresco, 2011, p. 13) which is of a moderate cost (Lambourne, 2007). Second, the live nature of respeaking means that the turnover from the process to product is instantaneous. The demand for a fast turnover in subtitles has been addressed by the expansion of SR software (discussed in Section 2.5.3), particularly Dragon NaturallySpeaking (referred to from now on as Dragon), which has positively impacted the rise of respeaking.

However, for interlingual live subtitling to be recognised as a viable access service, interlingual respeakers must be trained to produce live subtitles of good quality. Quality in intralingual respeaking is already being addressed by working-quality assessment models, such as the NER model (Romero-Fresco and Martínez, 2015) (Section 3.4.4.2), and respeaking certification (Romero-Fresco et al., 2019) (Section 2.5.6). However, quality assessment and certification have both been reactive approaches (Greco, 2018), as they have sought to resolve existing problems rather than act as preventative measures. Quality assessment for interlingual respeaking has been addressed with the NTR model (Romero-Fresco and Pöchhacker, 2017) (Section 3.4.4.4). Although interlingual respeaking training has started to take place (Section 2.6.3), the required skills for the task are yet to be identified through experimental research, which is the gap that this thesis aims to fill.

### 2.4.3 European legislation

Given the growth of audiovisual services and multimedia products, the provision of access services to make audiovisual content accessible is fundamental. European legislation will be drawn upon in this section to demonstrate the impact that legislation has had on access services in Europe. As this study is based on European data, this section will not explore legislation from other continents. The written declaration issued by the European Parliament in 2008 states that partial or complete loss of hearing affects more than 83 million people in the European Union, a figure that was expected to grow with the ageing population. In response to this, the European Parliament 'considers subtitling of all public-service TV programmes in the European Union to be essential, with a view to ensuring that all viewers, including DHOH persons, have full access to them and takes the view that this would also help with foreign-language learning' (European Parliament, 2008, p. 2). The declaration called for a legislative proposal to require European Union public-service TV broadcasters to subtitle all programmes.

The Audiovisual Media Services Directive 2010 further highlights the importance of the provision of access services for audiovisual media:

Audiovisual media services are as much cultural services as they are economic services. Their growing importance for societies, democracy – in particular by ensuring freedom of information, diversity of opinion and media pluralism – education and culture justifies the application of specific rules to these services (Audiovisual Media Services Directive, 2010).

Such specific rules linked to the provision of accessible audiovisual media services include making audiovisual products accessible to persons with sensory impairments and the elderly in order to ensure that these people are integrated in the social and cultural life of the European Union. Achieving accessibility should include access services, such as sign language, subtitling, AD, and easily understandable menu navigation (Audiovisual Media Services Directive, 2010). Generally, companies do not add access services unless it is mandatory. The reason why SDH flourished in Europe is because it became part of an European Union requirement. Article 7 of the directive states that 'member states shall encourage media service providers under their jurisdiction to ensure that their services are gradually made accessible to people with a visual or hearing disability'. This ensures that all audiovisual media is made accessible to a wide audience. Cost is a reason why companies may have been reluctant to provide access. As previously discussed in Section 2.4.2, this is interesting in relation to live subtitling

via respeaking, as respeaking is a cost-efficient method to produce live subtitles in relation to other existing methods such as stenography or Velotype.

The European Accessibility Act, adopted by the Council of the European Union in March 2019, has the purpose of contributing to the internal market by putting laws and regulations in place regarding accessibility requirements for certain products and services. Such laws and regulations aim to eliminate and prevent barriers to the free movement of particular accessible products and services arising from differing accessibility requirements (European Accessibility Act, 2019).

Accessible products and services are not only in high demand by persons with a sensory impairment but also by a wide range of other persons who experience functional limitations, for example ‘the elderly, pregnant women or those travelling with luggage’ (*ibid.*). The dissimilarities between laws and regulations of different member states in terms of the accessibility of products and services create barriers to their free movement and introduce ineffective competition within the internal market (*ibid.*). To prevent this, the directive promotes equal participation by improving access to products and services that, through design and adaptation, address the needs of persons with disabilities or functional limitations and streamline their economic value. In terms of MA, there is a need to ensure that access to audiovisual media services is coordinated, thereby ensuring that all people, regardless of their abilities, can enjoy audiovisual media (*ibid.*).

Now that respeaking has been situated within the broad fields of study of MA and AVT, and context has been given to the demand for audiovisual access services, the next section will explore intralingual and interlingual respeaking and discuss their similarities with interpreting, demand, certification, and recent research.

## **2.5 Respeaking**

At this early stage, it is important to make distinctions between the terminology used to refer to different aspects of respeaking. The ILSA project has contributed to terminology and acronyms are starting to be coined in this area (Pöchhacker and Remael, 2019; Robert et al., 2019a, 2019b), and they will be used throughout this thesis. For many tasks, there is an umbrella term used to generically describe the task; this is the case for **live subtitling**, whereas **respeaking** is the term used to refer to the method of producing live subtitles via SR software as opposed to stenography. **Live subtitler** is used to refer to

the professional who produces **live subtitles** as an end product. All terms are further identified according to whether **intralingual** (same language) or **interlingual** (with a language transfer) live subtitles are being produced. It must be noted that **interlingual live subtitling**, as the broad umbrella term for all methods, is referred to as ILS.

### **2.5.1 A brief history of live subtitling**

Along with multiple people using standard keyboards to produce live subtitles, stenography (see definition in Section 2.4.2) was the conventional method used for intralingual transfer of audiovisual programmes before respeaking emerged. The first commercial stenotype machine was made in 1906 (Brooks Court Reporting). Stenography began in the 1950s in courtrooms where trained stenographers would record spoken words by writing shorthand on a stenotype machine (a machine composed of fewer keys than a standard QWERTY keyboard and that can translate stenotype into English) (Romero-Fresco, 2011). The main advantage of stenography is that a trained stenographer can produce a minimum of 250 and a maximum of 350 words per minute (wpm), enabling them to produce verbatim or near-verbatim subtitles; in other words, subtitles that provide a full and literal account of the dialogue (*ibid.*). In contrast, respeakers find it more challenging to keep up with the speech rate of the speakers and end up providing edited subtitles (Romero-Fresco, 2009). According to Romero-Fresco (2011), the first basic application of respeaking occurred in a US courtroom in the early 1940s. Reporters used to take shorthand notes of the speech in court before dictating their notes for transcription afterwards. This was very time consuming; therefore, attempts were made to respeak into microphones, but this turned out to be too noisy. To mitigate this, a reporter spoke into a microphone and used a stenomask to cancel out any extra noise. Although SR software was not used until the late 1990s, it could be interpreted that the concept of respeaking started there and then (Romero-Fresco, 2011). Since respeaking was introduced in the UK and Flanders in 2001, it has become the most common method to produce live subtitles on the continent (Romero-Fresco, 2015).

### **2.5.2 Intralingual respeaking**

According to Lambourne (2006), live subtitling was introduced to Europe in the early 1980s when the British channel ITV subtitled headlines of public events using a QWERTY keyboard. Academic research and collaboration with the industry have created new conventions in intralingual live subtitling by

combining elements of both translation and interpreting. Techniques that have been tested include Velotype, stenography, and respeaking. The respeaking process can differ depending on the country; for example, in the UK and Spain, respeakers tend to work alone, but correctors may be present to correct the respoken text before it is cued live. In France, up to four people can be involved in the process: (1) a respeaker; (2) a whisperer who helps the respeaker if they get lost; (3) a validator who corrects errors; and (4) another whisperer who looks out for future errors (Caschelin, 2013).

Intralingual respeaking has been practised in the UK since 2001 (Lambourne, 2006; Romero-Fresco, 2011), but research really took off in 2006 with a special issue of the academic journal *InTRAlinea* edited by Eugeni and Mack, which presented the first international seminar on real-time intralingual subtitling at the University of Bologna. Academic research continued with Eugeni and Romero-Fresco at the forefront of developments. Over the span of the past 13 years, topics such as new technologies (Eugeni, 2006), comparisons of respeaking and simultaneous interpreting (Eugeni, 2008), respeaking particular genres of TV (Eugeni, 2008, 2009), audience reception (Romero-Fresco, 2010, 2012; Fresno, 2019), respeaker training (Arumí Ribas and Romero-Fresco, 2008; Romero-Fresco, 2012a), the relationship between respeaking and subtitling and interpreting (Romero-Fresco, 2015a; Chmiel et al., 2017, 2017a; Szarkowska et al., 2017, 2018), cognitive load (Szarkowska et al., 2017), measuring quality in intralingual respeaking (Eugeni, 2012; Romero-Fresco, 2012; Romero-Fresco and Martínez, 2015), and respeaker certification (Romero-Fresco et al., 2019) have been researched and, while bridging the gap between academia and industry, have paved the way for a recognised profession.

### **2.5.3 SR software**

Interlingual respeaking would not have been possible without the development of SR software, in which language engineering has played a fundamental part. The Oxford English Dictionary (2019) defines language engineering as 'the use of computers to process languages for industrial processes'. Tools such as machine-readable dictionaries (Dash and Ramamoorthy, 2019) and sentence parsers (Hendry and Hanna, 2019) (to understand the exact meaning of a sentence or a word) have been widely used within the field of language engineering and have contributed to developments in SR software. SR has been researched for a substantial amount of time, with some studies dating back to almost three decades ago. In computer science, methods of explicitly minimising errors have been explored (Mangu,

Brill and Stolcke, 2000; Gangaputra, 2012) along with investigation into automatic SR error-detection tasks and accuracy (Ogawa and Hori, 2017). Studies in the realm of healthcare include investigating the use of SR as a replacement for medical transcription in order to save time and reduce costs (Rosenthal et al., 1998). In psychological assessment, SR is applied as a tool for depression screening (González, 1993). In the field of linguistics, studies tend to focus on the structure of language, such as language models that can improve SR performance (Bellegarda, 2004) and multimodal processing (Deng, 2016).

SR software has started to be widely used for respeaking and was first implemented by VRT and the BBC in 2001, as a method to produce real-time subtitles for live programmes (Romero-Fresco, 2011). In order to respond to the demand for interlingual live subtitling and to produce good quality live subtitles, interlingual respeakers must be able to cope with the technological aspects of SR. Technology is expected to play a large part in training, as audiovisual content is used for respeaking practice material and SR software is used to respeak. The 'technological turn' (O'Hagan, 2013) has meant that, aside from the traditional skills and competences required in TS, technical skills must also be developed in interlingual respeaking training so that respeakers can manage the software they must work with and produce a quality output.

#### **2.5.4 Similarities between intralingual respeaking and SI**

Historically, the importance of using SR software has not been shared with SI, but now the two have come together to create interlingual live subtitles. Conference interpreting has become the most professional type of interpreting since it began in the early 20<sup>th</sup> century; its evolution has facilitated its place within academia (Pöchhacker, 2015). Pöchhacker (2015) defines conference interpreting as the rendering of speeches delivered in one language into another in conference-like settings, in either the simultaneous or consecutive mode. SI has been defined as a mode of interpreting in which 'the listener hears the interpretation at the same time as the speech is made' (Phelan, 2001, p. 6). SI is normally practised in a conference setting where the interpreter hears what is being said through headphones and simultaneously interprets what they have heard. It is common for multiple interpreters to work in separate booths, each working in a different language and in many instances with a colleague to assist them if necessary while they prepare for the next speech (*ibid.*). Similar to SI, intralingual respeakers



must also listen to the ST and simultaneously respeak what they have heard. Respeaking includes the added difficulties of 'including punctuation marks and some specific features for the deaf and hard of hearing audience' (Romero-Fresco, 2011, p. 1), correcting errors live, and managing the SR software. Although we should not forget that SI involves language transfer and intralingual respeaking does not, these extra tasks contribute to an increase in cognitive load required of the respeaker (Szarkowska et al., 2016). Cognitive load can refer to the processing load imposed on the performer by a particular task (Paas and van M errienboer, 1993), or the perceived mental effort a performer invests in a task (Yin et al., 2008).

A simultaneous interpreter and an intralingual respeaker both produce language in a different form for a given audience, whether it be in a different language in the case of SI, or from speech-to-text in the case of respeaking. A respeaker speaks 'to SR software, which turns the recognised utterances into subtitles displayed on screen with the shortest possible delay' (Romero-Fresco, 2011, p. 1). Therefore, one could say that the respeaker's audience is a computer, whereas a simultaneous interpreter interprets the spoken text from one language into another for a human audience (Dawson and Romero-Fresco, forthcoming). The major difference here lies in the appropriate delivery for a given audience. A respeaker must dictate their interpretation to SR software and adapt their delivery to sound more robotic than human to facilitate the software's understanding. However, a simultaneous interpreter must deliver their interpretation in a pleasant voice and can emphasise words and use intonation to facilitate the audience's understanding and make their interpretation pleasant to listen to (Jones, 2002).

### **2.5.5 Demand for intralingual respeaking**

As discussed in Section 2.2, MA was born within the fields of TS and AS, and its universalist definition frames it in relation to a wide audience. From a social point of view, the demand for intralingual respeaking is essential for giving a wide audience access to audiovisual texts in different settings. For example, for DHOH students or for students with cognitive impairments who require subtitles to access content at school and university (Romero-Fresco et al., 2019) and as discussed in Section 2.4.1, for hearing audiences when media programmes are silenced in public areas. In terms of TV, the news is a priority for a DHOH audience, as they want to know what is happening as quickly as hearing people do (Allsop and Kyle, 2008). An understanding of a DHOH audience's viewing habits is also important for

producing relevant and appropriate access; this is an extension of the idea of quality in MA. Viewing preferences have been taken into consideration in various papers (Allsop and Kyle, 2008; Romero-Fresco, 2010, 2012, 2015) and are essential in order to determine elements such as subtitle positioning, subtitle font and size as well as which genres of TV should be prioritised. Such research is useful to this project because, in the future, similar studies could be conducted and considered for the audience of interlingual live subtitles. More recently, intralingual live subtitles have been used to provide access for live events including at conferences and film festivals and in the classroom (Moore, 2020). The audience of interlingual live subtitles is expected to be more varied than that of intralingual live subtitles, due to the change in language. Such an audience could include the DHOH, hearing, language learners, children, the elderly, people with cognitive impairments, immigrants, and foreigners. These are all audiences that need to be considered in order for interlingual live subtitles to successfully cater for as many people as possible. The first step of providing this access is to determine how interlingual respeakers can be trained well, which is a gap this thesis aims to fill. Then, as explained in Chapter 9, further research could explore how interlingual live subtitles cater for specific groups within the wide audience, as well as what is missing for the specific requirements of each group.

#### **2.5.6 Certification in intralingual respeaking**

Quality also plays an important part in audience reception, which is why measures such as certification have been taken to ensure quality. Stejskal (2003, n.p.) defines certification as a 'voluntary process by which an organisation grants recognition to an individual who has met certain predetermined qualification standards'. This is carried out 'on the basis of testing, completed training, presentation of previous relevant experience, and/or recommendations from practising professionals' (Hlavac, 2013, p. 32).

The popularity of translator certification appears to vary between countries. Belgium has a strong tradition of certification and a long history of translation and interpreting training with established university centres in Antwerp, Brussels, and Gent (Hlavac, 2013). Belgium's substantial experience in translation may be a result of the fact that they are a multilingual country that has the European Union at its heart. In the past few decades, an interesting case has emerged: the Flemish regional government has developed a policy for civic integration in response to the emerging multicultural and multilingual

society (Vermeiren et al., 2009). An important area of the policy is the provision of social interpreting, a concept unique to Flanders, which is similar to community interpreting within public and social services but is not conducted within legal, police, and asylum contexts (*ibid.*). Certification exams for social interpreters in Flanders has marked an important step to gaining control and ensuring quality over an informal sector, in which family members and friends frequently carried out the role of interpreter with little knowledge of their true accountability (*ibid.*).

In other countries, translator certification is not as popular, which could be caused by its commercialisation, such as is the case in the UK. *The status of the translation profession in the European Union* report (European Union, 2012) proposes criteria for actions that may be taken to enhance the status of the translation profession, one of which is the development of standardised examinations for translator certification. The report notes that, in some cases, certification is presented as something that can be purchased, just as Computer Aided Translation (CAT) tools can be, rather than a status that can be acquired by having met predetermined qualification standards. Overtime, certification has become more attractive in the translation professional world. The commercialisation of products has led to industry-led certification programmes, such as the case of SDL for certification in SDL Trados Studio, SDL MultiTerm, and SDL Tridion Sites.

Requirements also have an impact on the popularity of translator certification. In the UK, there is no requirement for certification to operate as a professional translator or interpreter, with the exception of the Diploma in Public Service Interpreting, which is required in order to work in court (Hlavac, 2013), local authorities and the Home Office, among others. The Chartered Institute of Linguists and the Institute of Translation and Interpreting function as professional associations and connect members with potential customers (*ibid.*); the institute offers varying levels of membership to professionals that reflect the length of professional experience. The Chartered Institute of Linguists accredits the Diploma in Public Service Interpreting as well as a Diploma in Translation. In Spain, aside from undergraduate and postgraduate degree programmes in Translation and Interpreting Studies at Spanish universities, the only formal certification is for sworn translation issued by the Ministry of Foreign Affairs (*ibid.*). Two nationwide professional associations, The Spanish Association of Professional Translators and Interpreters and The Spanish Association of Translators, Copyeditors and Interpreters, do not require members to be certified, nor do they certify their members.

In the UK, there is a requirement for respeaking certification for respeakers to be allowed to provide intralingual live subtitles to university students (Romero-Fresco et al., 2019). Respeakers tend to be trained via courses delivered in-house, which can vary across companies. As a consequence of this, the UK government refused to allow the Disabled Students' Allowance to be used for the provision of live respoken subtitles, arguing that respeaking was not a qualified profession. Live Reporters International Certification (LiRICS), run by GALMA, was set up to resolve this issue. It works with the industry to allow their respeakers to obtain three different levels of certification from two strands: TV and education and live events (Romero-Fresco et al., 2019). LiRICS aims to set and maintain high international standards in the respeaking profession to build a pool of certified professional respeakers who can produce good quality intralingual live subtitles in English. Since its implementation, LiRICS has certified respeakers to provide this access service for DHOH university students in the UK funded by the Disabled Student's Allowance.

A pilot study of nine candidates received LiRICS Level 1 certification in 2018 (Romero-Fresco et al., 2019). The data shows that 6,000 subtitles and 40,000 words were analysed in which the average accuracy rate is 98.5%. A recent Ofcom study that spanned 78,000 subtitles and 546,000 words (Ofcom, 2014a, 2014b, 2015a, 2015b) obtained an average accuracy rate of 98.4%. This comparison suggests that LiRICS has aligned itself with current professional standards. Both accuracy rates reach the 98% threshold for acceptable live subtitles, which is explained in detail in Sections 3.4.4.2 and 3.4.4.4.

Although certification appears to be somewhat unpopular in certain countries, Chan (2008) argues that, if implemented properly, it could be an effective tool for identifying the professional standards of translators, as it enforces a standard of quality and helps clients determine the quality of translators. Shifts taking place within AVT and MA also call for certification, as attention is moving from quantity to quality (Remael, Orero and Carroll, 2012) and from reactive to proactive approaches (Greco, 2018). These trends emphasise the benefits that certification could bring to an increased quality in translation should it be adopted on a broader scale. Once appropriate training has been put in place, certification for interlingual respeaking is expected to be valuable in setting and maintaining professional standards for interlingual respeaking.

### 2.5.7 Interlingual respeaking

Given the process of creating interlingual live subtitles via SR software only differs from intralingual respeaking due to a change in language, the widely used definition of intralingual respeaking (Romero-Fresco, 2011, p. 1) (presented in Chapter 1 of this thesis) has been used as a basis for the proposed definition of interlingual respeaking. The proposed definition also considers the setting in which interlingual live subtitles are required and a universalist approach to the fields of MA and AVT. Interlingual respeaking could be defined as:

A technique in which one listens to the original sound of a (live) programme or event **in one language** and respeaks (interprets) it **in another language** to a speech recognition software, including punctuation marks and some specific features **for when the audience cannot access the sound in its original form**, which turns the recognised utterances **into text displayed on screen** with the shortest possible delay [my definition adapted from Romero-Fresco, 2011, p. 1].

Three amendments have been made to this widely used intralingual respeaking definition coined by Romero-Fresco. The inevitable addition of 'in one language' and 'in another language' clarifies the shift from intralingual to interlingual respeaking. Interlingual live subtitles are used to give access to a TV programme or event to a wide audience; this audience may be composed of people who cannot access the sound due to a hearing impairment or due to the environment in which they are consuming the audiovisual text or event or of people who do not understand the source language (SL) or who could benefit from a visual support of the language. So, from a universalist point of view, 'specific features for the deaf and hard-of-hearing audience' has become 'specific features for when the audience cannot access the sound in its original form'. The amendment of 'into subtitles displayed on screen' to 'into text displayed on screen' considers the diversity of material that interlingual live subtitles could provide access to and recognises that the written output may not always be displayed as subtitles but rather as 'live-titles' (Pöschhacker and Remael, 2019, p. 133).

Much like intralingual respeaking, the output of interlingual live subtitles is closer to subtitling, and the actual process of producing the subtitles is closer to the task of SI. Given the element of language transfer, interlingual respeaking is more complex than intralingual respeaking. Romero-Fresco (2015) has also defined respeaking as a form of computer-aided SI. It has been observed that interlingual respeaking and SI share skills that refer to the live nature of the task. These skills include multitasking, live translation, working at speed, short-term memory, and split attention; furthermore, interlingual

respeaking and subtitling share skills that refer to the limitations that subtitles pose due to time constraints and reading speeds, such as reformulation, condensation, and edition, among others (Dawson, 2019; Pöchhacker and Remael, 2019). The term 'live translation' refers to a general skill that is understood as the ability to produce an immediate oral translation of an oral text (F. Pöchhacker, University of Vienna and L. Alonso Bacigalupe, University of Vigo, personal communication, April 26 2018). In this thesis, live translation is referred to both as a task-specific skill required for interlingual respeaking and as a process of listening in one language and speaking in another. The term live translation shows the common ground and the differences between different forms of live translation. For example, SI and interlingual respeaking are both forms of translation that are carried out live so the skill of live translation is required for both tasks; as well as for others such as sight translation. The characteristics, constraints and immediate audience of interlingual respeaking are not identical to those of SI. It is for this reason that 'live translation' is used to describe the skill and process as opposed to 'interpreting', 'simultaneous interpreting' or 'simultaneous translation'.

Academia seems to have anticipated the professional development of interlingual respeaking, which is still only experimental. This explains why more academic studies than training programmes exist in this area. Szarkowska et al. (2016) explore cognitive demand in respeaking. In this study, the scholars reported that, compared to the translators, the interpreters had a lower cognitive effort, lower mental demand and experienced frustration for shorter periods of time. This could be due to the interpreters already having developed relevant skills such as listening and speaking at the same time. The results indicate that those with experience in interpreting may be at an advantage when dealing with the complexity of interlingual respeaking. In contrast, Chmiel et al. (2017) found that interpreting students are not necessarily better prepared to produce live subtitles than translation students, but Szarkowska et al. (2018) saw interpreters perform better than translators and a control group in a series of interlingual respeaking exercises. Davitti et al. (2018) trained 26 students with a mix of interpreting, subtitling, and intralingual respeaking backgrounds for six to eight hours in order to complete an interlingual respeaking test. Results show that there was not a particular background that performed better or worse and that producing interlingual live subtitles of good quality is ambitious but not unattainable. The mixed results of the four aforementioned studies highlight some uncertainty around what the best-suited professional profile is for an interlingual respeaker. Some similarities can be seen in the skills required for the task, as the interpreting groups appeared to be able to deal better with its

complexities compared with other groups. A large-scale experiment to test the feasibility of interlingual respeaking is required to gather meaningful empirical data on the task-specific skills and best-suited professional profile; this is a gap that this thesis aims to fill.

### **2.5.8 Demand for interlingual respeaking**

Live subtitling is mainly intralingual, for example from English to English; however, interlingual respeaking is gradually becoming more common. Romero-Fresco (2011) explains that this could be due to the multilinguistic reality of a given area. For example, in Wales, live programmes in Welsh are usually subtitled into English. In other countries such as Denmark, Belgium, and the Netherlands broadcasters provide viewers with live subtitles in the country's native language for important speeches; for example, President Obama's inauguration speech was respoken into Danish by TV2 and into Dutch by VRT and VTM (Romero-Fresco, 2011). Examples of current practice along with statistics on disability, immigration, and language learning (see Chapter 1) highlight the increasing demand for interlingual live subtitles to give access to large volumes of multilingual content and for training in interlingual respeaking to respond to its demand as an access service for those with disabilities or for those in an environment with a language barrier.

Since research into interlingual respeaking began three years ago, it has been implemented at various live events (namely conferences and events that explore MA), such as at the MAPIC conference held in Vigo in October 2017 from English into Spanish; the ILSA Multiplier Event held in Vienna in February 2019 from English into German; an online gaming conference (GameDev.World) held in June 2019 in various language combinations; and the Intermedia conference held in Poland in September 2019 from English into Polish. GALMA is also receiving requests from media corporations such as Ai-media and Deluxe for interlingual respeakers with a variety of language combinations to respeak sporting events and gaming events. The Presbyterian Church in the US has also expressed interest in live on-site and remote interlingual live subtitles (English into Spanish and English into Korean) for their general assembly (P. Romero-Fresco, GALMA, personal communication, ongoing). Broadcasters, such as the BBC and VRT as well as political institutions have highlighted a need to find professional interlingual respeakers (Robert, Schrijver and Diels, 2019). The demand for interlingual respeaking and the

progression of recent research in respeaking helps to bridge the gap towards the next natural step of research: an experimental study concerning only interlingual respeaking.

### **2.5.9 Research in interlingual respeaking**

Research in interlingual respeaking has recently taken off with the ILSA project leading the way; also, recent publications on IO1 (Robert et al., 2019a; 2019b) and IO2 (Pöchhacker and Remael, 2019; Dawson and Romero-Fresco, forthcoming) have contributed to the interlingual respeaking landscape. As noted in the introductory section of this thesis, ILSA aims to identify the skills and profile of the interlingual respeaker and aims to develop, test, and validate the first training course in interlingual respeaking and provide a protocol for this practice for TV, social settings, and the classroom. Experimental studies have only briefly touched upon interlingual respeaking by including an interlingual respeaking exercise in an intralingual respeaking study (Szarkowska et al., 2016) or by testing interlingual respeaking in a small-scale pilot study (Dawson, 2019; Davitti, Sandrelli and Romero-Fresco, 2018). Literature that has solely focussed on interlingual respeaking has theoretically approached the topic to ground it within translation and interpreting studies (Pöchhacker and Remael, 2019). This highlights a gap in this recent addition to MA and AVT: a large experimental enquiry into interlingual respeaking is needed to gather empirical data on the respeaking performance of participants from the two backgrounds of this hybrid form of subtitling and interpreting. The forthcoming SMART project (starting in 2020), provisionally aims to further investigate the feasibility of interlingual respeaking, measure quality, and identify the competences that can support skill acquisition. SMART was initially intended as a preliminary study for what has now become a fully funded international project. The initial pilot study (Davitti, Sandrelli and Romero-Fresco, 2018) will be referred to in Chapter 4 where results are compared with the pilot experiment of this present research.

## **2.6 Training**

Once the empirical results of this research have been presented in Chapters 4, 5, and 6, Chapter 7 will discuss the theoretical concepts and frameworks of translator and interpreter training by reviewing relevant literature. Therefore, this section on training will only provide a brief overview of current



intralingual and interlingual respeaking training practices so as to set the scene early on and define any relevant training terminology that will be used throughout this thesis.

### **2.6.1 Translator training**

Kussmaul (1995) defined translation not only as an exchange of words and structures but also as the communicative process that takes into consideration the reader of the translation within a particular situation and within a specific culture. Institutional translator training in Europe, which began in the mid-20<sup>th</sup> century, appears to have marked an important shift in TS: up until then, translators were either language specialists or bilingual people who were self-taught in translation (Kelly, 2005). In 1995, Gile noted that a shift was occurring within translation and interpreting studies. In the 20<sup>th</sup> century, most research was philosophical and referred to translatability, fidelity, and the role of translation in literature and culture. However, research then took a turn – it became technical and focussed on specific aspects of translation and interpreting, such as linguistic, psycholinguistic, terminological, and professional issues. Towards the end of the 20<sup>th</sup> century, a growing awareness of translation across the world called for methods concerned with the actual process of translation, and so the field leant towards institutionalising translator training (Kussmaul, 1995). Kelly (2005) notes that the oldest institutions of translator and interpreter training, before World War II, were the Moscow Linguistic University founded in 1930, the Ruprecht-Karls-Universität Heidelberg (1933), the Université de Genève (1941), and the Universität Wien (1943). Since the end of World War II, institutionalisation has taken place in the form of special centres of translation training in numerous universities around the world (Lambert, 2013). Approximately 250 courses worldwide existed in the 1990s (Caminade and Pym, 1998), a figure which has undoubtedly grown with undergraduate and postgraduate courses across the world.

At the turn of the 21<sup>st</sup> century, the focus began to shift away from the translated text and onto the translator. TS moved from descriptive studies to user-centred approaches, which are closely related to functional translation theories and emphasise the role of the user, or reader, in the translation process (Suojanen, Koskinen and Tuominen, 2014). Díaz-Cintas (2008) highlights that translation training developed dramatically, as Spain experienced an increase in practice-oriented courses at undergraduate level and the UK saw an increase in master's degrees in translation. The relationship between education and training is more broadly explored in Section 7.2; however, it is important to note

the difference between education and training early on. Education can be largely theoretical but can also include translator training components, while training refers to the skill acquisition required to carry out a translation task (Pym, 2011). The teaching of skills in university education is not always possible due to a need to cover the theoretical foundations of a subject area and the belief that skills training may belong to vocational training (Kelly, 2005). Given the practical task-oriented nature of interlingual respeaking, it is believed that a skills-based approach to respeaker training is the most appropriate. For teachers and students, using translation to learn a foreign language shifted to translation becoming the actual learning objective (*ibid.*). Generally, nowadays Higher Education Institutions (HEIs) offer a myriad of courses in translation and interpreting studies. A general approach is often taken at undergraduate level where students learn about different modes of translation and interpreting while learning at least one foreign language; in contrast, postgraduate courses tend to focus on a specialisation of either translation or interpreting and within that specialise even further in AVT, technical and scientific translation, or literature translation, or consecutive interpreting, community interpreting, or conference interpreting.

### **2.6.2 Training in intralingual respeaking**

The first data obtained on respeaking training showed that although respeaking was the preferred method for live subtitling for companies due to its cost-effectiveness and shorter training timeframe compared with stenography, there was limited training and teaching in this particular area (Arumí Ribas and Romero-Fresco, 2008; Robert, Schrijver and Diels, 2019a) and differences between training in universities and industry. Romero-Fresco (2011) notes that academic training or research did not immediately follow the implementation of intralingual respeaking practice. Consequently, subtitling companies knew what they had to do and possessed the tools to carry out the task, but, due to the absence of codes of good practice, they all went about it differently. Respeaking training varies depending on the company and can take anywhere from three weeks to three months (*ibid.*). In the UK, Independent Media Support introduced respeaking in 2005, and it entailed the following from the point of view of training: creating and training the voice profile, practising respeaking with real-life material, respeaking tests and feedback for further training (*ibid.*). Red Bee Media introduced respeaking in 2001, and their respeakers trained by creating and training their voice profile and then respeaking 'easy' genres of TV such as sports before gradually moving on to more challenging genres such as the news

(*ibid.*). Red Bee Media introduced respeaking in Spain in 2008. The training appears to have been similar and took anywhere from three to six months. Before the NER model (Romero-Fresco and Martínez, 2015) was used in industry as a method of quality assessment, companies in the UK and Spain used their own methods of assessment as a means of giving feedback to respeakers (Romero-Fresco, 2011). Unsuccessful attempts have been made to gather updated information from companies that provide respeaking as an access service.

The recent results of IO1 of the ILSA project (Robert, Schrijver and Diels, 2019a, 2019b) offer updated findings on respeaking training in industry and university education across Europe. The results show that training still appears to focus on dictation, respeaking, and subtitling and that it is mainly practical. Some training includes short theoretical introductions on respeaking. The duration and structure vary, and it could take the form of training on-the-job or coaching from colleagues. Nowadays, formal in-house training is more common among intralingual live subtitlers, but university education and vocational courses appear to be offering training for interlingual live subtitlers. The IO1 results also show that most practitioners were trained while working as live subtitlers as opposed to receiving training beforehand. 75% of those who received in-house or vocational training and 100% of those who received training from an HEI did so after 2011; this shows that there was a lack of respeaking training in university education up until recently. Training on the job appears to be more common and suggests that one does not necessarily set out to be a live subtitler but rather falls into the profession. Results from IO1 of the ILSA project show that live subtitlers, whether they work in-house or as freelancers, tend to combine their job with another function such as pre-recorded subtitling (Robert, Schrijver and Diels, 2019a). It appears that live subtitling belongs to a wider portfolio that translators and interpreters can offer. It is necessary to raise awareness of the profession so that students can start to work towards it through university education or via vocational courses; this would also ensure that future training has high levels of uptake. In terms of training in university education, respeaking courses are available at the following institutions:

Artesis University College (in Dutch), Leeds University (in English), Universitat Autònoma de Barcelona (in Spanish), Universidade de Vigo (in Spanish), University of Bologna-Forli (in Italian), and the University of Roehampton (in English, Spanish, French, German, and Italian) (Romero-Fresco, 2012a, p. 98).

The IO1 results show that respeaking in HEIs across Europe is still scarce (Robert, Schrijver and Diels, 2019a). Course duration in the above-mentioned institutions appears to vary from one hour per week over eight weeks to two hours per week over twenty-eight weeks. The difference in course duration between industry and HE is most likely dictated by the HE course structure. In industry, there is a strong focus on practice with some theoretical introduction whereas the 2011 Independent Media Support and Red Bee Media training was purely practical; this suggests that theory is starting to be introduced at the industry level. The practical part of training appears to be the same for both industry and HE levels, as it begins with voice profile creation and respeaking practice. Like frequent feedback being given in industry, continuous assessment is predominant in HE courses and is sometimes combined with a final exam. For this project, it is important to understand the details of professional practice, the current training landscape, and preferences for training. Robert, Schrijver and Diels (2019a) provide results for these specific areas and detail practitioners' training preferences, which offer important insights into elements of training that would prove to be useful for interlingual respeaking. Such training preferences will be used towards the end of this project when training for interlingual respeaking is created; training must reflect the working conditions in the industry to ensure that trainees are well prepared for respeaking in a professional environment.

### **2.6.3 Training in interlingual respeaking**

Training in interlingual respeaking has started but remains scarce, as only a handful of HEIs across Europe, as mentioned above, include respeaking training as part of academic translator education. The rest of the training is delivered in industry or via tailor-made courses and has, up until recently, focussed on intralingual respeaking. In industry in the UK, instead of offering interlingual respeaking to produce interlingual live subtitles, companies use SI in addition to intralingual respeaking in which the respeaker uses the interpreters' output as original audio.

In academia, the first interlingual respeaking course was delivered as a professional development course by The University of Vigo and took place from January to May 2019. Seven trainees completed three modules on: (1) Simultaneous Interpreting, (2) Intralingual Respeaking and (3) Interlingual Respeaking with a language combination of English into Spanish. Trainees completed practical interpreting and respeaking exercises each week and, due to the online delivery format, were able to

work at their own pace and communicate with each other via an online course platform. This course formed part of Stage 3 of the AR methodology of the experimental part of this research (Section 3.3.1) and its results are presented in Chapter 6.

Other training in interlingual respeaking includes workshops that have preceded recent conferences in the field, such as Languages and the Media 2018 (Davitti, Sandrelli and Romero-Fresco) and Intermedia 2019 (Romero-Fresco and Dawson). Less extensive training in interlingual respeaking is being delivered within university education and is usually given at the end of a module in translation, subtitling, AVT, or interpreting rather than occupying a whole module. At the University of Roehampton, a three-hour session on interlingual respeaking has been delivered for the past two years in the Professional Translation module of the BA in Modern Languages. In Austria, both the University of Graz and the University of Vienna have one course devoted to respeaking in the master's degree programme in Translation and Interpreting. Students have 90 minutes of weekly taught sessions throughout the semester for 12–14 weeks. Most sessions focus on intralingual respeaking, but at the University of Vienna, an attempt is made to devote the last two or three weeks to interlingual respeaking from English into German (F. Pöchhacker, University of Vienna, personal communication, October 6, 2019). Interlingual respeaking has also been introduced for the 2019/2020 academic year at the University of Antwerp. Students have two hours of class per week and are expected to complete another two hours of work in their own time. Intralingual respeaking is taught in the first 15 weeks of the module, and then students receive seven weeks of interlingual respeaking training with extended class time of three hours in the last four weeks along with extra assignments (A. Van Hoey, University of Antwerp, personal communication, October 9, 2019). An understanding of course duration and the weighting of intralingual and interlingual respeaking is an important aspect of respeaker training and this information will be used to inform the training presented in Chapter 8.

## **2.7 Learning outcomes, competence, and skills for interlingual respeaking training**

Now that the landscape of respeaking training has been outlined, it is important to define training-specific terms, such as learning outcomes, competence, and skill as they will be frequently used throughout this thesis. The purpose of the following subsections is to be primarily definitional. The empirical results of the main experiment will inform the framework for a training model as well as some

theoretical work that exists within respeaker training (Arumí Ribas and Romero-Fresco, 2008; Pöchhacker and Remael, 2019). Such concepts will be drawn up as an outline of interlingual respeaking training and will indicate the type of exercises and material to be used that is designed to target specific difficulties and challenges found in interlingual respeaking.

### **2.7.1 Learning outcomes**

Due to the educational intentions of this research, it is necessary to explore concepts that relate to education and qualifications. The European Qualifications Framework (EQF) has proved to be a good starting point for this. The EQF helps to make qualifications easier to understand and classify qualifications by level based on learning outcomes, allowing learners to move more easily between education and training institutions and sectors. Once the empirical results and theory of respeaker training have been connected in Chapter 8, the next natural step is to define a set of learning outcomes to create interlingual respeaking training. The EQF has defined learning outcomes as ‘statements of what an individual should know, understand and/or be able to do at the end of a learning process’ (EQF), which the learner will have acquired through practising the task-specific skills required for interlingual respeaking and becoming competent in its key areas.

### **2.7.2 Competence**

The idea of competence is used in several disciplines, so it can prove difficult to reach an agreed definition (Grbić and Pöchhacker, 2015). Describing what knowledge and abilities translators need in order to translate correctly and what enables them to be able to perform the cognitive operations necessary to develop the translation process and the tasks required in the professional setting has been widely explored within TS (Hurtado Albir, 2017). In some respects, this is mirrored in this thesis, as this research aims to identify the task-specific skills required for interlingual respeaking and the best-suited professional profile. For now, competence will be defined and then respeaking competence will be widely explored within the context of translator and interpreter education and training in Chapters 7 and 8.

In education, fostering competences is the objective of each course or programme; therefore, it is also a key concern in international exchange in education and professional development (*ibid.*). This

highlights the need to define competences required for respeaking and identify the task-specific skills required for interlingual respeaking within each competence. At this stage, it is fitting to highlight the fine line between competence and competency. As defined in the Oxford English Dictionary, the former focusses on the *what* and refers to the ability to do something well while the latter focusses on the *how* and refers to a skill that you need in a particular job or for a particular task. The EQF (2008) defines competence as 'the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development'. The competences identified for interlingual respeaking will also act as a set of skills needed for high performance in a certain field (Sternberg, 2005). If this definition is broken down further, 'a set of skills' perhaps fits the need to frame competence as an umbrella term for the variety of skills it encompasses, which is a functional way to group skills, considering the vast array of skills that respeaking entails. 'High performance' loosely fits the objective of this research, as it seeks to train interpreters and subtitlers as part of the methodology, test their performance in interlingual respeaking to identify the task-specific skills, and find the best-suited professional profile for the task to then create training for interlingual respeakers to perform well in interlingual respeaking.

### **2.7.3 Skills**

Within each competence there is a set of skills that trainees would need to practice, build, and eventually acquire in order to perform well in interlingual respeaking. The EQF defines skills as being cognitive, such as involving the use of logical, intuitive, and creative thinking as well as practical, involving manual dexterity and the use of methods, materials, tools, and instruments. It is expected that the training course proposed in this thesis will give space for interlingual respeaking trainees to carry out practical respeaking exercises pertinent to specific translation and recognition errors that occur when producing interlingual live subtitles via SR software, which encompasses the cognitive and practical aspects of the task-specific skills.

## **2.8 Final thoughts**

By exploring the main concepts related to respeaking, key literature in this research has been highlighted and a universalist approach to interlingual respeaking has been adopted. The concepts

outlined in this chapter will be used throughout this thesis to contextualise interpreting and subtitling skills within interlingual respeaking and the experimental work that has been carried out as part of this project. Some existing literature that outlines practical training proposals and competence frameworks will also help to create training for interlingual respeaking that can respond to the demand for it as a media access service. Training has only been touched upon briefly in this chapter, but as it is at the core of this thesis, approaches to training are outlined in Chapter 7, and practical applications of training are discussed in Chapter 8. This research must identify which skills and competences are key to interlingual respeaking and in which fields they are located (whether they are subtitling, interpreting, or respeaking specific). It is essential that online education and training needs in the 21<sup>st</sup> century are considered throughout this process. Therefore, approaches to existing translator, interpreter, subtitler, and respeaker training are presented in Chapter 7; these approaches will also influence the training presented in Chapter 8.

Experimental research that tests the interlingual respeaking performance of individuals is clearly needed; since respeaking is a hybrid form of subtitling and interpreting, it seems fitting for subtitling and interpreting students to make up the two groups of participants that will be tested. Before a large-scale experiment can take place, it makes sense to conduct a small-scale study to test the logistics of the experiment, such as the software participants would need to use and the type of audiovisual material, and to get feedback from their experience; a small-scale study would also be an opportunity to test qualitative research methods such as questionnaires and to test how interlingual respoken texts could be analysed. With this in mind, Chapter 3 details the research framework and methodology that has been applied to the three experimental stages of this research in order to test the feasibility of interlingual respeaking, to identify the task-specific skills required for the task, and to determine the best-suited professional profile for the task.



# Chapter 3

## Research framework, methodologies, and methods

### 3.1 Introduction

Research in AVT is becoming so interdisciplinary that it is not enough for AVT researchers to only dip into other fields – such as experimental and cognitive psychology, information technology, or deaf studies. They must also converse with researchers from other disciplines and become proficient with some of their research methods and tools (Szarkowska and Wasylczyk, 2018). Research in humanities is now adopting strategies and methodologies that have been traditionally used in social, physical, technical, and life sciences (*ibid.*). Chaume (2018) discusses how the recent turns in AVT (descriptive, cultural, sociological, and cognitive turns) have opened up other potential research avenues. These changes are exemplified by scholars' attention turning to the translated text to apply functionalist theories and descriptive methodologies, and by scholars examining the role of the translator along with the active role of audiences who are also producing new types of translations (*ibid.*).

The use of technology has paved the way for new experimental research methods in which the focus is on the translator's mental process and the audience's response (*ibid.*). New technologies, in particular cognitive and language engineering technologies, and the way in which research is carried out, as eye trackers, EEG, heart rate measurers, or galvanic skin response devices are now being widely used (Szarkowska and Wasylczyk, 2018). In the context of this research, technologies such as SR software along with software that records translators' reactions or performance and online data collection methods have influenced the way research is carried out and have given researchers more flexibility. Soon, interlingual respeaking may require the use of the highly technological methods mentioned above. However, given the novelty of the subject area, research must first concentrate on proving the feasibility of the task and creating one of the first generations of professional interlingual respeakers.

To reflect the three stages of this research – (1) the pilot experiment; (2) the main experiment; and (3) the creation of an interlingual respeaking module – Chapters 4, 5, and 6 present the experimental set-up and empirical results of each experiment, including the participants, design, materials, and quality assessment methods used. The aim of this chapter is to present and to situate the research framework, methodologies, and methods used in this thesis, and to explain why they are the most suitable for this research while also outlining their limitations. After the key terms used in this chapter are defined, the first section introduces the objectives of the research and the RQs of this thesis. The second section focusses on the methodological orientation of AR and discusses its links to social constructivism. The flexibility of AR allows for other approaches to be intertwined within each stage of research, so a 'train, practice and test' approach to experimental research will be discussed; this approach guided how empirical data was collected online in order to access a wider geographical reach of participants from the UK and Spain. As the geographical reach implies the use of English and Spanish, attempts have been made throughout this thesis to compare the UK and Spain in terms of relevant aspects of interlingual respeaking such as training and certification. Towards the end of this chapter, quality assessment methods for intra- and interlingual respoken texts are outlined and, finally, quantitative and qualitative empirical research methods are explored, including the type of research, analysis, data, and tools used. As noted at the beginning of this thesis, all questionnaires and audiovisual material referred to in this chapter and throughout this thesis are available on a USB along with the individual participant data for each experiment.

### **3.1.1 Scope of the study**

This study is driven by experiments in two areas: the testing of the act of interlingual respeaking and the training of interlingual respeaking skills. It is defined by specific parameters, such as the language pair and range of participants. Initially, two language directions were intended to be used in the experiments: Spanish > English and English > Spanish. Of the interlingual respeaking courses that currently exist, students are only trained in one language direction. During the recruitment phase, it was thought that an even number of participants could be recruited for both language pairs; however, it proved challenging to recruit native English participants. For the pilot study, eight native Spanish and two native English participants took part, of which seven Spanish and one English participant provided enough data for analysis. For the main experiment, 48 participants were recruited: 44 with a language

direction of English > Spanish and four with a language direction of Spanish > English. The four native English participants did not provide enough data for analysis, so their data samples were withdrawn from the study. For the creation of an interlingual respeaking module, material was prepared to cater for English > Spanish, reflecting the interest of those with this language direction.

A wider range of participants was used in the pilot experiment than in the main experiment. In the pilot, postgraduate translation students, an academic who is also a professional translator, and a professional speech-to-text interpreter participated. As one focus of the empirical research was to determine the best-suited professional profile for interlingual respeaking, the recruitment of participants for the main experiment focussed on those with backgrounds in either interpreting or subtitling. The difference in the range of participants does not invalidate the pilot study, as the aim of the pilot was to test the feasibility of interlingual respeaking, the NTR model as a quality assessment tool (Section 3.4.4.4), and the logistics before designing a main experiment. The approach was mainly qualitative to obtain in depth feedback from participants on the interlingual respeaking experiments and on training. The main experiment aims to train participants in interlingual respeaking in order for them to be able to carry out respeaking exercises; these exercises provided data to help identify the task-specific skills and best-suited professional profile for interlingual respeaking.

### **3.2 Research framework**

Before discussing the research framework, it is important to differentiate between the research framework, methodologies, and methods. Saukko (2003, p. 8) highlights the difference between research methodology and research methods: 'As methods refer to practical 'tools' to make sense of empirical reality, methodology refers to the wider package of both tools and a philosophical and political commitment that come with a particular research approach'.

Saldanha and O'Brien (2013) also clearly differentiate between the research framework, methodology, and methods. They describe a research framework as 'the set of ideas and approaches that can be used to view and gather knowledge about a particular domain' (*ibid.*, p. 12), and according to them, a research methodology 'is a general approach to studying a phenomenon', whereas, a research method 'is a specific research technique' (*ibid.*, p. 13).

The main research framework of this study is AR, as it allows for research to be carried out in stages that inform one another. Section 3.3.1 situates AR within the field of TS and outlines reasons as to why AR was chosen as the research framework for this study. The advantages and limitations of AR are discussed in Section 3.3.1.2. The flexibility of AR also allows for other approaches to be integrated into the methodological framework. A 'train, practice and test' approach has been devised to bring subtitling and interpreting participants up to a similar level of respeaking, foster interaction between participants and the researcher, and to test performance. In terms of training, social constructivism is also key. It is within the 'train, practice and test' approach that a social-constructivist approach is adopted in order to advocate for a participant-centred approach to training and to encourage communication to strengthen the link between research and training. Reasons for choosing a social-constructivist approach and its advantages and limitations are discussed in Section 3.3.2. The methodology of this study is based on empirical designs that used mixed (quantitative and qualitative) research methods. Questionnaires, discussed in Section 3.4.2 and 3.4.5, were used to gather data on participants' biographical information, previous training, self-assessed competence, and views on intra- and interlingual respeaking. Quality assessment models, discussed in Section 3.4.4, such as the NER model (Romero-Fresco and Martínez, 2015) and the NTR model (Romero-Fresco and Pöschhacker, 2017), were used to analyse the quality of the participants' respeaking exercises and tests.

Figure 3.1 illustrates the unique research framework of this project. With the experimental design as a point of departure, three main qualitative empirical research methods are highlighted: the pre-experiment questionnaire, performance analysis (ScreenCast-o-matic observations and NER and NTR analysis), and the post-experiment questionnaire. The nature of AR means that these methods are used in each of the three stages of research: (1) the pilot experiment; (2) the main experiment; and (3) the interlingual respeaking module.

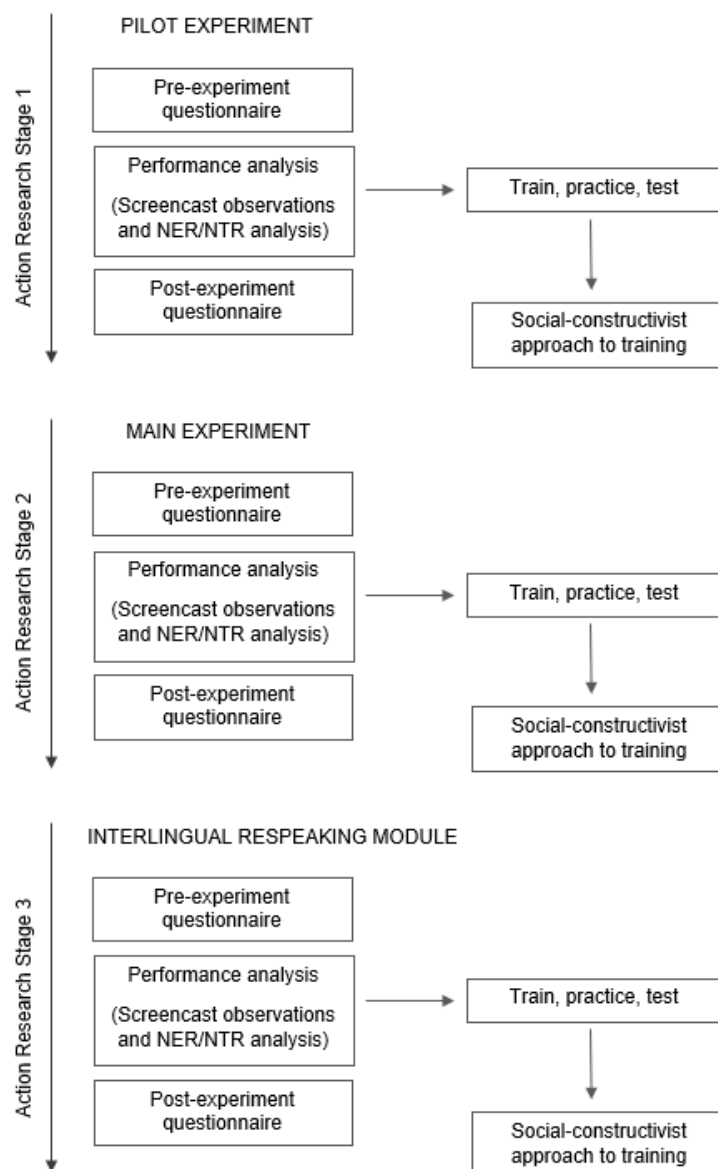


Figure 3.1: The research framework.

### 3.2.1 Objectives of the research and RQs

The results will inform a training model that will shape the future training of interlingual respeakers. The research framework detailed above has been constructed to respond to the specific objectives of this research and to answer the five RQs at the centre of this thesis:

Objective 1: To review previous research such as guidelines and techniques on subtitling in general, subtitling for the d/Deaf and hard-of-hearing (SDH), conference interpreting and intralingual respeaking, to be used as a basis for interlingual respeaking.

- RQ1: How have existing research and practice led to the emergence of interlingual respeaking within AVT and MA?

Objective 2: To determine the feasibility of interlingual respeaking and whether its output can be of good quality.

- RQ2: Is good quality respeaking across two languages feasible?
- RQ3: How can quality in interlingual respeaking output be measured?

Objective 3: To identify the task-specific skills required for interlingual respeaking and the best-suited professional profile for an interlingual respeaker.

- RQ4: What are the required task-specific skills for interlingual respeaking?
- RQ5: What is the best-suited professional profile for an interlingual respeaker?

Objective 4: To evaluate current training in subtitling and interpreting and create a training model for interlingual respeaking, which can be used in different contexts, such as within Higher Education and the industry, and that fits in with the landscape of training in the 21<sup>st</sup> century.

- RQ6: How can existing training models and approaches inform suitable training for interlingual respeakers?

First, the theoretical foundation of this project, which is described in Chapter 2, aims to answer RQ1. RQs 2 and 3 are the focus of Chapter 4, and, although they are answered to a certain extent, they are re-evaluated as more substantial data is introduced through the main experiment and the interlingual respeaking module. RQs 4 and 5 are addressed in Chapter 5 through a large-scale study that trained and tested participants from different backgrounds of subtitling and interpreting; they are also informed by the results of Chapter 6. Chapters 7 and 8 aim to answer RQ6, as approaches to translator training are explored with a focus on interpreting, subtitling, and respeaking training. Then, a research-informed

training model is drawn up in order to inform training for interlingual respeakers; this is addressed in Chapter 8.

### **3.3 Research methodology**

#### **3.3.1 Action Research**

Academics in fields such as life sciences and healthcare frequently use AR as a methodological framework upon which they can base different stages of research. AR seeks to bring together action and reflection with theory and practice while participating with others (Reason and Bradbury, 2001); AR has been assigned the following working definition:

[AR] is a participatory process concerned with developing practical knowing in the pursuit of worthwhile human purposes. It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities (Reason and Bradbury, 2006, p. 4).

AR has been used for researching TS, such as in translator and translation teacher education (Cravo, 1999), translator training (Kiraly, 2000), and within Audiovisual Translation Studies (Neves, 2005, 2007, 2016). AR may be an appropriate process when the focus of research involves working with people to understand the work they carry out and why they do it in a specific way along with the belief that researching their ability to carry out this work may help it improve (Cravo and Neves, 2007). This could be seen to mirror Bradbury's (2015) stance on AR, which usually begins with the question: 'How can we improve this situation?' (*ibid.*, p. 1). Intralingual respeaking must be adapted to improve access services so that a wide audience can access foreign live audiovisual content on demand. Before this situation improves, interlingual respeakers must be trained to provide interlingual access to audiovisual content.

The structure designed to assess the feasibility of interlingual respeaking and its potential development was threefold: a small-scale experiment, a large-scale experiment, and an interlingual respeaking module. These components evolved from each previous stage of AR, which are comprised of 'plan', 'act and observe', and 'reflect' stages. Concepts such as including various stages of research, highlighting the evolution of participants' knowledge of respeaking, and creating room for practice were also required. It is for these reasons that AR was chosen as 'an orientation' (Reason, 2003, p. 106) to

this enquiry. The roots of AR lie in education, so it is unsurprising to find a parallel in Translation and Interpreting Studies (Nicodemus and Swabey, 2016). Burns's (2010) definition of AR touches upon its vast uses within TS, such as its use in conducting research on the impact of modifications made to training programmes, the introduction of new modules, or studying the impact of changes made to a translation workflow process. AR could be a valuable framework when researching translation and interpreting training, especially within the realm of AVT (Cravo and Neves, 2007); however, it is still not widely used. According to Liu (2011), during the period of 2004–2009 in the journal *Interpreting*, only one out of 48 articles used AR as an approach, which was a study related to interpreter education. However, AR has promising possibilities for interpreting practice and the development of interpreter education (Pöchhacker, 2011). In AVT and MA, Neves (2007) used AR for a research project on subtitling Brazilian telenovelas for Portuguese d/Deaf audiences; in this project, the values of AR were heavily emanated, as those involved were empowered to continue their learning once the project ended. A decade later, a participatory AR project (Neves, 2016) aimed to make a small Portuguese community museum accessible to all and had positive results. Still, apart from these few examples, very little AR has been used in the field of TS.

A distinction between simple practice and AR is that the latter results in the achievement of practical and tangible results with an impact on people's lives (Neves, 2016). This is closely linked to the values of MA and its inclusive nature, which seeks to improve access to content for a wide audience. This has a direct link to the present research, as the main experiment (presented in Chapter 5) and the interlingual respeaking module taught for the University of Vigo (presented in Chapter 6) use the process of working with participants and trainees as a way of finding solutions to interlingual respeaking challenges together through practice, discussion, and research dissemination, which will all have an impact on training interlingual respeakers.

Although AR projects eventually close from the point of view of the AVT/MA researcher, the additional spirals that are formed from the questions generated through the process of AR continue to be researched (*ibid.*). As interlingual respeaking is in its infancy and is the most recent addition to the subfields of AVT and MA, it is expected to be researched for years to come. AR is perhaps the best-suited orientation for beginning research in this area because it allows for questions to form and other projects to develop within each stage of research. AR has recently been used in the context of intralingual respeaking as a structure that interwove focus groups to understand user expectations at



live events (Moore, 2020). This would enable suggestions for further research to spiral off into new realms of research within AVT once this project comes to an end; these new avenues could include testing the effectiveness of the training model and adapting the model to make it accessible for a wide audience. It is thought that the projects mentioned above have supported the idea that AR can be used to bring together scientific enquiry and participatory research that has a direct impact on those involved. AR appears to be just as productive for the researcher as it is for the participants and society overall given its shared values with MA.

### **3.3.1.1 The AR spiral**

Exploring the characteristics of AR led to a further exploration of theoretical models. Kemmis and McTaggart (2000, p. 595) propose an AR spiral that illustrates the following self-reflective cycles: 'planning a change, acting and observing the process and consequences of the change, reflecting on these processes and consequences, and then replanning, acting and observing, reflecting, and so on'.

Cohen and Manion (1985, p. 216) state that AR 'is appropriate [...] for when a new approach is to be grafted on to an existing system'. In this respect, the change that is being introduced is interlingual language transfer in respeaking in order to broaden its possibility as an access service. Interlingual respeaking is yet to be tested on a large scale, therefore, there is a responsibility to carry out the research well, as it sets a foundation for the future profession and for future research. Notably, Cravo and Neves (2007, p. 95) highlight the notion that AR 'is not merely about "doing good", it is also about doing things well'. The spiral format of AR shows each stage as progressive and allows for the obtainment of a greater understanding of interlingual respeaking at each stage so that the results can then inform the next stage. The primary change is to introduce language transfer in respeaking, and AR allows the methodology to be refined at each stage in order to best achieve this aim. Figure 3.2 illustrates Kemmis and McTaggart's (2000) AR spiral, which has been annotated so as to highlight each stage of this research and its evolution.

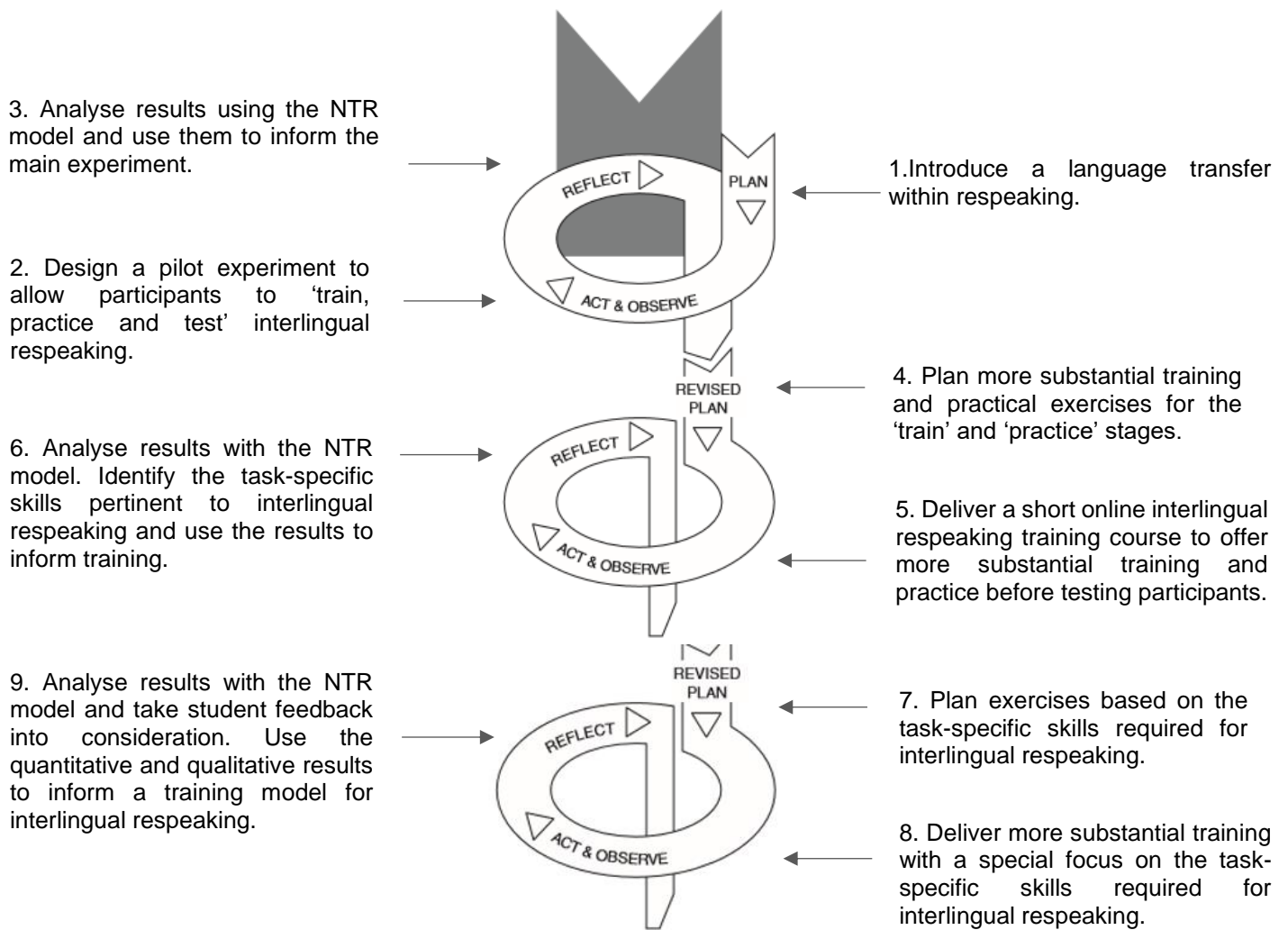


Figure 3.2: Annotated AR Spiral (Kemmis and McTaggart, 2000, p. 21).

### 3.3.1.2 Advantages and limitations of AR

The six characteristics of AR as described by Reason and Bradbury (2006), have been used to outline the advantages of AR within the context of this research:

- The first characteristic of AR is to 'involve, empower, and improve' aspects of each participant's social world. Being involved in an experiment in which training forms part of the methodology has allowed participants to learn new skills, develop existing skills, and apply them to interlingual respeaking. It could be argued that this process has enhanced the participants' social worlds by allowing them to build transferable skills that would be useful in other settings.

- The second characteristic calls for an engagement with people. Participants had the opportunity to engage with the course, including the material, exercises, course facilitator, and other participants, to share tips and strategies of interlingual respeaking and to learn collaboratively.
- The third characteristic is opening new 'communicative spaces' in which dialogue and development can flourish. As explained in this chapter, the online course for the main experiment was delivered via the online platform Google Classroom. Google Classroom was chosen as an appropriate platform to host training for the main experiment and the interlingual respeaking module because it is user-friendly and it allows for material to be uploaded, instructions to be posted, and has a separate communicative space in which participants could share their comments, observations, and experience of the interlingual respeaking course. Ongoing group forum discussions between trainees and trainers were intended to provide qualitative data on the challenges, skills, and backgrounds required for interlingual respeaking. By sharing ideas with each other and engaging with the course facilitator, participants were able to incorporate the findings of others into their own practice during the course, thereby fostering the social-constructivist approach to training.
- The fourth characteristic is to share learning with wider audiences. An awareness of this research has been shared with participants in the form of feedback during the training courses, and the most recent research in respeaking has been shared with participants.
- The fifth characteristic is value oriented and it addresses issues of significance. It is expected that this research project will have an impact on society as it will contribute to a training model for interlingual respeaking, which should then lead to the implementation of interlingual respeaking courses. Being value oriented, AR benefits communities by providing access for a wide audience, thereby promoting the integration of some audiences into society.
- The sixth characteristic cannot be predetermined but rather it changes and develops as those engaged deepen their understanding of the issues that are being addressed. Essentially, the

outcome of this research project cannot be predetermined as such. Results can be anticipated, but they are not concrete until each stage of the AR spiral has been finalised.

'As happens with many other research approaches, in [AR], weaknesses and strengths seem to be strongly interrelated' (Neves, 2016, p. 243). AR has been criticised for its lack of rigour (Chapman, Paterson and Medves, 2011), but this 'lack of rigour' can be counterbalanced with careful research design and implementation (Nicodemus and Swabey, 2016). Kemmis and McTaggart (2008) note four points that could be seen as limitations of AR, the first of which is directly related to this project and is described as 'exaggerated assumptions about how empowerment might be achieved by [AR]' (*ibid.*, p. 284). In other words, the mere use of AR does not guarantee participant or societal empowerment. This could be mitigated by the fact that this AR project takes place within the field of MA, which ultimately seeks to improve the lives of those with sensory impairments or language barriers, and therefore, achieves empowerment by training others to provide an access service that in turn empowers those who require the service.

### **3.3.2 A social-constructivist approach to training**

The flexibility of AR as an orientation allows other approaches to be considered and used alongside AR when necessary. Sandín (2003, p. 39) suggests that AR intends to 'foster social change, transform reality, and make others aware of their role within the process of change'. This quote can help link AR to social constructivism as an approach to training. In relation to translation, social constructivism was coined by Kiraly (2000) and could be defined as an approach to translator training in which 'knowledge is constructed by learners, rather than being simply transmitted to them by their teachers' (*ibid.*, p. 1). Social constructivism in a wider context has been explored since the early 20<sup>th</sup> century, although it has not always been called by this name. Berger and Luckmann (1967) explored the 'social construction of reality' and the sociology of knowledge, which analyses the process. Vygotsky's (1933) work on sociocultural theory and his conceptual framework are believed to have contributed to the development of constructivist theory and curricula (Jaramillo, 1996). Parallels between Vygotsky's theory and constructivism include socially negotiated meaning-making, problem-solving, and active learning participation among others (*ibid.*). Social constructivism advocates for students to interact with their peers and teachers in order to complete translation tasks and projects from the perspective of being a part of the professional community (Kiraly, 2000; Kelly, 2005). Therefore, like AR, social constructivism

fosters practical knowledge and brings together action and reflection through theory and practice via participation with others. By taking part in this research, participants are not only learning about respeaking but also about contributing to knowledge in this area.

The aim of the pilot experiment is to test the material, software, questionnaires, and logistics of a small-scale experiment with the intention of applying the learnings to a large-scale experiment to test interlingual respeaking performance. It is in the main experiment (Chapter 5) that participants can complete the train and practice stages at their own pace and take control of their learning, reflecting a social-constructivist approach to education. Giving participants power and enabling the researcher to take on more of a facilitator approach allows for a more collaborative working environment in which participants can interact in a communicative space that is guided by the researcher as opposed to being directed or transmitted by them. The main experiment and the interlingual respeaking course for the University of Vigo were both delivered online; this reflects the importance that must be given to creating a constructivist computer-based classroom. As proposed by Kiraly (2000), this would allow learners to explore the computer-based tools available today and would encourage learners to continue to explore new tools as they become available in the future. To ensure that a learner would feel comfortable doing this, Kiraly suggests 'designing and fostering a collaborative environment for guided exploration and authentic practice, helping students move towards autonomy from the very beginning' (*ibid.*, p. 125).

Given the novelty of interlingual respeaking as a practice, it is important to foster a collaborative and cooperative approach to research, training, and learning in order to obtain multiple perspectives of interlingual respeaking and create a fluid dialogue between the trainer and trainees. Giving participants the option to communicate in this way also acts as a data collection method and strengthens the relationship between research and training. Incorporating research into the training stages of this research and using the results of the training and tests to inform future research could also strengthen the link between research and training. It will become clearer in Chapters 5 and 6 as to whether the implementation of social constructivism proved to be an effective approach to interlingual respeaking training. The four key principles of social constructivism (Kiraly, 2000) applied to education (multiple perspectives, collaborative and cooperative learning, situating learning, and scaffolding) are further detailed in Chapter 7 with the intention of informing the interlingual respeaking training model.

While it has limitations (Krahenbuhl, 2016), a constructivist approach is suited to the purpose of this research. According to social-constructivist theory, students learn by using and sharing their previous knowledge and experiences to engage in learning. Advantages of this particular approach are that it is effective for students to learn in a hands-on environment and to develop theory together through practice. As the approach encourages students to draw upon previous knowledge, students tend to value each other's opinions. There are two main disadvantages of this approach being used for interlingual respeaking training. The first is the lack of structure, as there is a danger that some students may become lost with the freedom that they are given in training. Some students may require structure to avoid copying what other students are doing rather than taking the liberty of starting class discussions and debates. The second disadvantage is that traditional grading is removed in favour of the NTR model as a form of evaluating progress. A lack of rigid evaluation may not be suitable for some aspects of HE, which typically includes grade-centred objectives.

### **3.3.3 A 'train, practice and test' approach to training**

A 'train, practice and test' approach was devised for the experimental stages of this research to ensure that all participants receive training in respeaking before carrying out a respeaking test. Without any prior knowledge or training in respeaking, participants would struggle to perform well, and, as the test aims to measure participants' performance in interlingual respeaking, it is appropriate to help participants achieve the best results they can. The 'train, practice and test' approach endeavoured to train participants in interlingual respeaking through presentations, literature, reference videos of respeaking in action, online forum discussion, and allowed them to practise dictation and intra- and interlingual respeaking to prepare for a test. For the pilot experiment, training was delivered in English. For the main experiment and the interlingual respeaking module, training was mainly delivered in Spanish. Occasionally, participants, trainees and trainers communicated in English.

An advantage of this distinctive methodological approach is, first, that it could be inserted into the 'act and observe' stages of the AR spiral, allowing both approaches to intertwine and create an overarching methodological framework. As touched upon in Chapter 5, the delivery method of online training is of great benefit not only to this research but also to the participants. The four-week training course allows participants from different backgrounds to gain the same amount of knowledge and practice of

respeaking before being tested, thereby mitigating the small group numbers and ensuring that the only difference between participants is their professional profiles. The online delivery method has immediate benefits related to cost, time, location, and reach. For example, the training is free to run and free to take because it is for research purposes. Participants are able to work on the exercises at their own pace, and online delivery allows for a larger number of participants to take part from different geographical locations, such as Spain, the UK, and South America.

It is customary in most research projects and theses to present all methodology in the relevant methodology chapter. However, as this research project has three individual stages of experimental research, it seems fitting to present the 'train, practice and test' approach for each stage in the relevant chapters. The methodology and the results of the pilot experiment, the main experiment, and the interlingual respeaking module are presented at the beginning of Chapters 4, 5, and 6 respectively. Due to the extensive practical side of this research, it would have proved challenging to read up on the methodology for three experiments without having immediate access to the results and an understanding of how the results of the previous experiment reformed the methodology for the next. Dividing the 'train, practice and test' approach to each experiment in this way has instead created a narrative that is easy to navigate. Different audiovisual material was used for each experiment, so it seems fitting to also include such details in the relevant chapters. Audiovisual material for each experiment can be found in the following sections: Section 4.2.3 (pilot experiment), Section 5.3.2 (main experiment), and 6 Section 6.2.2 (interlingual respeaking module).

### **3.4 Research methods**

First, it is useful to outline the type of research and analysis being conducted. The specific nature of this research is empirical, as defined by Williams and Chesterman (2002, p. 58): 'Empirical research, seeks new data, new information derived from the observation of data and from experimental work; it seeks evidence which supports or disconfirms hypotheses, or generates new ones'.

The quantitative data obtained from the experiments seeks to answer RQs 2, 4 and 5 with the intention of creating the output for RQ6. In other words, the research seeks to solve a practical problem that has an application in life, which, in this context, is the lack of formal training for interlingual respeakers that has thereby led to the lack of interlingual respeaking as an access service. The experimental element

of this research aims to test participants' performance of interlingual respeaking to identify the task-specific skills required and the best-suited professional profile for an interlingual respeaker. Aside from this research being characterised as empirical, applied, and experimental, it is also participant- and product-oriented in nature. The approaches and methods are aligned to the participants since they require collaboration with their peers to complete respeaking exercises and questionnaires to measure performance, further highlighting the collaborative process between the researcher and those invited to take part in it (Saldanha and O'Brien, 2013). Questionnaire responses and results from their respeaking exercises will lead to the creation of a training model for interlingual respeaking, which is the main output of this research and highlights its product-oriented nature.

A mixed-methods approach has been used to collect primary quantitative and qualitative data, which has been collected in person and via online methods. Quantitative data has been captured by assessing the quality of the participants' respoken texts to compare the performance of individuals and groups. The data takes the form of accuracy rates, which, as described by Rasinger (2008, p. 25), would present well as interval scale data, as categories can be labelled and the differences between them are fixed, such as using a grading system to mark student work (Saldanha and O'Brien, 2013). Structured and semi-structured qualitative data have been collected through questionnaires and class discussions, providing a rich picture of interlingual respeaking and complementing the quantitative data by providing a deeper understanding of how participants felt throughout the experiments and how they processed the training.

The RQs presented in Section 3.2.1 determine whether quantitative or qualitative methods are best suited for data collection. RQ1 draws upon secondary qualitative data from studies on respeaking and is used to map the current landscape of respeaking, including its development as a hybrid form of subtitling and interpreting, current professional practice, research, and quality assessment. RQs 2, 4 and 5 can be answered through quantitative analysis of the data collected during the pilot and the main experiment. This, therefore, demonstrates that the use of a combination of both methods provides a more thorough understanding of the RQs than the sole use of one method could (Creswell and Plano Clark, 2007). RQ3 requires a subjective, observational analysis of how the NER and NTR models have been applied and the effectiveness of each model. The final RQ brings together quantitative analysis of the primary data collected through participants' respeaking exercises and qualitative analysis of primary data of participants' thoughts on their performance and training from the questionnaires with



the secondary data from the existing research on translator, interpreter, and respeaker training to create a training model for interlingual respeaking. A mixed-methods approach suited the transformation that the qualitative data of the respoken texts goes through to become quantitative data in the form of errors and accuracy rates. This approach also allowed for participants' practical performance to be correlated with their qualitative views on training and the tasks and profile required for interlingual respeaking. A mix of numerical and textual data collected before, during, and after the course also has helped to gain a better understanding of participants' perceptions of interlingual respeaking compared to the reality they experienced, which can also be compared with their actual results.

As presented in the research framework in Figure 3.3, three main methods were used to collect and analyse the data of participants' interlingual respeaking performance at each stage of the AR spiral: the pre-experiment questionnaire, performance analysis (through interlingual respeaking exercises and Screencast observations and NER/NTR analysis), and the post-experiment questionnaire. These methods are explored in the following subsections.

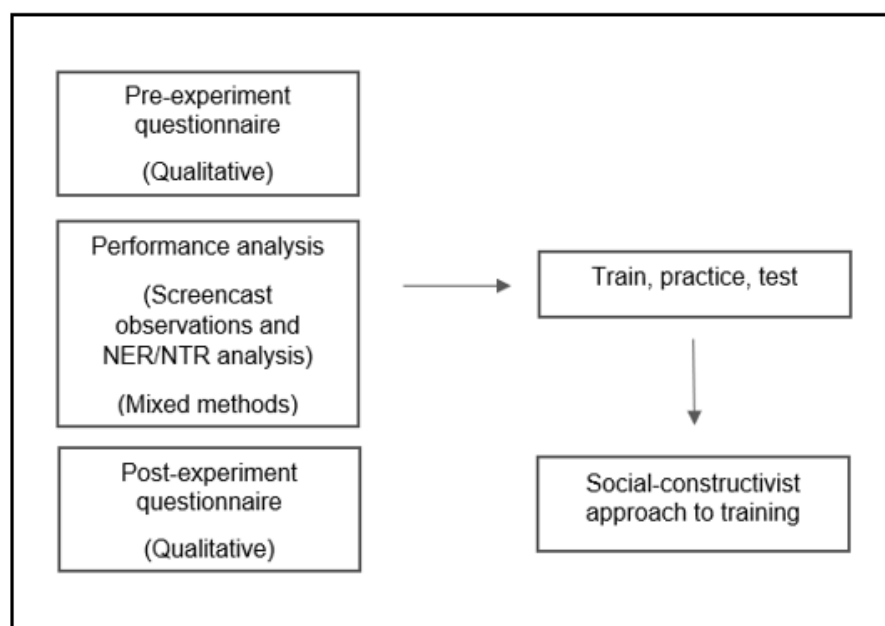


Figure 3.3: Empirical research methods.

### **3.4.1 Choosing participants**

Interlingual respeaking may appeal to those from a subtitling background, such as pre-recorded intra- or interlingual subtitlers or intralingual live subtitlers who also have an advanced level of a foreign language. Due to the vast amount of similarities between respeaking and SI, the profession may also appeal to simultaneous interpreters. People from such backgrounds are likely to either work as in-house subtitlers or be engaged in freelance subtitling or interpreting work. Much like professionals that are based in-house, freelancers are responsible for their own professional development and, in addition to freelance work, may also engage in attending conferences or taking courses in order to keep up with trends and demands in the industry. Such professionals may live in a foreign country or frequently travel for work; this may be particularly the case for freelance interpreters. Interlingual respeaking may appeal to students of AVT, MA, or SI who are keen to become language professionals. As respeaking is a hybrid form of subtitling and interpreting, it is thought that the skills and profile for an interlingual respeaker may be inherent to a subtitler or an interpreter. For these reasons it was essential to recruit participants that had experience in either one or both fields of subtitling and interpreting. The majority of participants in the pilot experiment were postgraduate students, all participants in the main experiment were postgraduate students, and trainees of the interlingual respeaking module were students and professionals.

Ten participants were recruited for the pilot experiment: eight postgraduate students in translation, one academic and professional translator, and one professional speech-to-text interpreter. Eight participants were native Spanish speakers and two were native English speakers. During the recruitment stage, there was a considerable amount of interest from native Spanish participants with an advanced level of English; however, it proved challenging to recruit native English speakers with an advanced level of Spanish. The backgrounds of participants from the pilot experiment could have been chosen more carefully (e.g. five subtitlers and five interpreters) in order to draw more meaningful conclusions from the small groups of participants, as opposed to the participants with mixed backgrounds of translation, subtitling, and interpreting who cannot be grouped. The small number of participants in the pilot does not hold statistical validity, so the experiment mainly tested the research methods used, and the results have informed the main experiment with the intention of collecting more substantial data.

For the main experiment, it was considered to be essential to recruit interpreters and subtitlers with a language direction of English into Spanish. However, due to the nature of mixed translation and interpreting degrees, it became challenging to find and recruit participants with clear-cut backgrounds in these fields of study. Participants with mixed backgrounds were also recruited. A total of 44 participants make up the following groups in Table 3.1.

| <b>Group</b> | <b>Profile</b>                          | <b>Number of participants</b> |
|--------------|---|-------------------------------|
| 1            | Clear-cut interpreters                  | 13                            |
| 2            | Interpreters with subtitling experience | 14                            |
| 3            | Clear-cut subtitlers                    | 10                            |
| 4            | Subtitlers with interpreting experience | 7                             |

Table 3.1: Participants in the main experiment.

The participants of the main experiment can be divided into four clear groups; however, the groups are uneven: 13 interpreters, 10 subtitlers, and 21 participants with mixed backgrounds. These groups have been further split up to reflect 14 participants with more interpreting experience and 7 with more subtitling experience. Current recommendations suggest having 25 participants in each group to ensure statistical validity (Orero et al., 2018). The small sample sizes of the groups may decrease their statistical power; however, as all participants received training to obtain a similar level of knowledge before being tested lower numbers could be afforded. Concrete assumptions can be made from the larger group of 44 participants and differences can be made between the smaller groups of participants.

### **3.4.2 Pre-experiment questionnaires**

A questionnaire is often referred to by its synonymous term, survey, and has been defined by Sun (2016, p. 269) as: 'Probably the most common empirical research method in the social sciences and the humanities. It is a method designed to gather data about a human population (commonly referred to as a sample) through a sequence of focussed questions'.

Surveys can be composed of two broader types of questions, open-ended and closed-ended, which are further divided into factual questions, behavioural questions, or attitudinal questions to collect different types of data (*ibid.*). Different types of questions can elicit structured, semi-structured, or unstructured responses (Saldanha and O'Brien, 2013).

Participants in the pilot and main experiments completed pre-experiment and post-experiment questionnaires. Paper questionnaires were used in the pilot experiment and self-administered internet

questionnaires (Sun, 2016) using Qualtrics, used for the main experiment, were made available to participants via a link in Google Classroom. Students in the University of Vigo course completed a feedback questionnaire upon completion of the interlingual respeaking module, which was made available to them via Google Forms. Qualitative data analysis was carried out with the support of NVivo, which is explained in detail in Section 3.4.5.1.

The pilot and main pre-experiment questionnaires (Appendices 1 and 4) were composed of the following sections: biographical information, language skills, training, competence, and subtitles. The final section of the pilot questionnaire was 'respeaking'; notably, questions about intra- and interlingual respeaking seemed to cause confusion between participants. For the main experiment, this section was divided into two clear sections of intra- and interlingual respeaking. For the pre-experiment questionnaires, factual questions on the biographical information of participants were largely open-ended to allow participants to include their age, degree titles, and occupation to help interpret the findings of the questionnaire.

The training section of the pre-experiment questionnaires was composed of closed-ended behavioural questions that sought to determine the type of training acquired and open-ended questions to elicit information on the resources that participants found to be the most or least useful in subtitling and interpreting training. The competence section was largely formed of closed-ended behavioural questions in which participants had to select their self-assessed competence level of subtitling, interpreting, or respeaking. The subtitling section, also formed of behavioural questions, intended to collect data on participants' familiarity with subtitles in order to better understand their knowledge of accessibility. The intra- and interlingual respeaking sections were largely composed of closed-ended attitudinal questions so that participants could rate the main challenges for intra- and interlingual respeaking. A Likert scale was used to measure on what level participants deemed certain aspects of intra- and interlingual respeaking to be challenging and to what extent they deemed the usefulness of various skills that may be required for intra- and interlingual respeaking. This allowed participants to express their current perceptions of respeaking and to share which skillset they thought was needed for a professional interlingual respeaker in a controlled form.

### **3.4.3 Performance analysis**

The 'train, practice and test' approach is an integral part of performance analysis. Training resources, such as readings, audiovisual material for reference and for practice, and facilitated discussions between the researcher and students are different for the pilot and the main experiment and interlingual respeaking module. The brevity of this section is due to this information being split between Chapters 4, 5, and 6. Participants used Screencast, a software that captures microphone audio and movements on-screen, to record their practical respeaking exercises. The recordings are a source of data as they show the live respeaking process and allow for recognition errors to be correctly identified since the audio can be heard as the text appears on-screen. The respoken texts are another source of data as they can be analysed with the NER and NTR models explained in Section 3.4.4.2 and 3.4.4.4, respectively.

### **3.4.4 Quality assessment**

A shift in focus from the quantity to the quality of MA products has resulted in a rise in quality assessment models for subtitling. The researcher considered designing a quality assessment rubric for this study. An investigation into existing models of methods for assessing quality in both subtitling and live subtitling showed that the NTR model (Romero-Fresco and Pöchhacker, 2017) was the most suitable for interlingual live subtitles as it accounts for the shift in language, human intervention, and SR software performance. Given the use of SR software in the production of intra- and interlingual live subtitles through respeaking, the need for the assessment of technological performance (recognition errors) and human intervention (edition or translation errors) is required. Quality assessment models, such as the FAR model (Pedersen, 2017) for pre-recorded interlingual subtitling, the NER model (Romero-Fresco and Martínez, 2015), for intralingual live subtitling, the NERT model (Soria, 2016) and the NTR model (Romero-Fresco and Pöchhacker, 2017) for interlingual live subtitling exist. It seems appropriate to focus on models that specifically cater for live subtitling; therefore, the following subsections detail potential quality assessment models for live subtitling and their predecessors to use as an analysis tool for this study.

Each of the 44 participants respoke two intralingual videos in Spanish and four interlingual videos (from English into Spanish) during the course. A total of 88 intralingual and 176 interlingual respoken texts were analysed with the most suitable quality assessment models for the text types. Quality assessment

within MA has evolved over the past decade as working models have developed from the Word Error Rate (WER) model (Dumouchel et al., 2011) to the NTR model (Romero-Fresco and Pöschhacker, 2017) to introduce a translation element into the model to account for the rise of interlingual respeaking. Early developments for the quality assessment of SR software were done in the fields of information theory, linguistics and language engineering, as the Levenshtein distance, also referred to as the edit distance, was used as a metric for measuring the differences between two sequences of words (Miller, Vandome and McBrewster, 2009). The Levenshtein distance is the number of insertions, deletions, and substitutions between words (Levenshtein, 1965) and has been used to measure dialect pronunciation differences (Heeringa, 2004), spelling errors, and spell checkers (Bard, 2007) and to detect plagiarism, among other things (Su, Ahn, Eom and Kang, 2008). The WER model derives from the Levenshtein distance (Section 3.4.4.1). Some translation environment tools, such as translation memory leveraging applications, have used the algorithm to measure the edit distance between segments of content (Miller, Vandome and McBrewster, 2009), and the focus appears to have shifted to differentiating between human and technological errors as the move to TS took place with a focus on quality.

#### **3.4.4.1 The WER model (Word Error Rate)**

The WER model was first developed to test the accuracy of automatic SR (Dumouchel et al., 2011) and was then used to assess quality in intralingual live subtitling for online programmes including live shows such as sports events and the news. Notably, a time constraint is imposed on live shows between the audio production and the subtitle display (Dumouchel et al., 2011). As noted in Chapter 2, live shows are usually subtitled by either a stenographer or, more commonly recently, by a respeaker. Since humans and technology are both involved in the production of live subtitles, quality measures need to consider different types of errors caused by both. The assessment of accuracy rates in SR, therefore, began with the WER model, which measures the word correctness and word accuracy. To calculate the accuracy rate with the WER model, first, the total number of words (N) is taken, second, any errors such as deletions, substitutions and insertions are minused, third, the sum is divided by the number of words and, finally, multiplied by 100. However, the model does not account for instances when a text has been correctly edited. In such cases, the WER model would produce far lower accuracy rates compared to models that take respeaking into account (Romero-Fresco and Martínez, 2015).

$$\text{Accuracy rate} = \frac{N - \text{Errors}}{N} \times 100 = \%$$

Figure 3.4: The WER model (Dumouchel et al., 2011).

### 3.4.4.2 The *NER model (Number of words, Edition errors, Recognition errors)*

Ten years after respeaking was first practised in the UK in 2001, the WER model was used as a basis to create the NER model (Romero-Fresco and Martínez, 2015), which has since been tried and tested to assess the accuracy of intralingual live subtitles. The NER model draws upon the basic requirements of the WER model and emphasises the need for human intervention. The acronym ‘NER’ reflects the formula used in the model to calculate the accuracy rate, which consists of: the number of words in the respoken text (N); the edition errors caused by strategies applied by the respeaker (E); and the recognition errors that are usually caused by mispronunciations, mishearing, or errors with the SR technology (R). The need for human intervention is highlighted through the two additional elements of the model: correct editions (CE), which account for editing that has not caused a loss of information, and assessment, in which the assessor can comment on issues such as the speed, delay, and flow of the subtitles.

$$\text{Accuracy} = \frac{N - E - R}{N} \times 100$$

CE:

Figure 3.5: The NER model (Romero-Fresco and Martínez, 2015).

The NER model accounts for minor, standard, and serious edition and recognition errors, and respoken texts are expected to reach an accuracy rate of 98%. The assessment counts as the overall analysis of the subtitles, as it allows for comments that are not included in the formula, such as latency and ease of reading. The impact of this model highlights it as a viable model to assess intralingual live subtitles (Romero-Fresco, 2016), as it has already been used to calculate the accuracy of subtitle samples and

is currently used by regulators, broadcasters, and subtitling companies in Australia, Spain, the UK, Germany, Switzerland, Italy, France, and Belgium (Romero-Fresco, 2020).

### 3.4.4.3 From intra- to interlingual live subtitling assessment

Assessing the quality of interlingual live subtitles is a recent development in the area of MA. Soria (2016) attempted to adapt the NER model in their MA thesis by proposing the NERT model, in which the T incorporates the assessment of translation errors and makes a distinction between edition and translation errors. However, the two types of errors coexisting in one model means that it is difficult to see how interlingual editing can be distinguished from a change in meaning, thereby introducing analytical uncertainty (Romero-Fresco and Pöchhacker, 2017). Due to this model requiring further revisions, it is not appropriate to analyse a large number of interlingually respoken texts for a large-scale study. Robert and Remael (2017) explore how the NER model can be applied to assess quality and distinguish between two types of impact that an error can have on viewers: the comprehension of viewers and the perception of the quality that has been delivered in the translation. As shown in Table 3.2, the adapted NER model introduced another level of severity of standard+ errors to be penalised at -0.75.

| NER model (Romero-Fresco & Martínez, 2015) | Adapted NER model (Robert & Remael, 2017) |
|--|---|
| Minor (-0.25)                              | Minor (-0.25)                             |
| Standard (-0.5)                            | Standard (-0.5)                           |
| -  | Standard+ (-0.75)                         |
| Serious (-1)                               | Serious (-1)                              |

Table 3.2: Comparison of the NER model and an adaptation.

As this model has been deemed to require further fine-tuning in terms of the classification of translation errors, it was not appropriate to use it to measure the quality of respoken texts in a large-scale study.



#### 3.4.4.4 The NTR model (Number of words, Translation errors, Recognition errors)

The NTR model (Romero-Fresco and Pöchhacker, 2017) (see Figure 3.6) was developed to ensure that quality assessment for respoken texts extends to texts that are produced interlingually. The NTR model uses a similar formula as the NER model. Edition errors have been omitted to incorporate the translation element, which recognises that the shift from intralingual to interlingual live subtitling is not a similar process. No other model has an incorporated translation element; therefore, the NTR model is the most appropriate model to use for assessing respoken texts in this research.

$$\text{Accuracy} = \frac{N - T - R}{N} \times 100$$

EE :

Figure 3.6: The NTR model (Romero-Fresco and Pöchhacker, 2017).

The NTR model guarantees criteria for assessing the accuracy of the translation element from the original utterances to the target text (TT) and, much like the 'NER' acronym, 'NTR' stands for: the number of words (N); translation errors (T); and recognition errors (R). As can be seen in Figure 3.7 translation errors can be assessed as either content errors or form errors. Definitions for each subtype of translation error are as follows:

- Content omission (cont-omiss): Omitted text of dependent or independent idea units.
- Content substitution (cont-subs): Substituted text that results in a mistranslation.
- Content addition (cont-add): Addition in the target text that does not appear in the original text.
- Form correctness (form-corr): Poor use of grammar or punctuation.
- Form style (form-style): Variations in the appropriateness, naturalness and register of the text.
- Effective Edition (EE): Variations in the target text that do not cause any loss of information and could improve the target text (i.e. condensation of filler words and unnecessary repetitions).

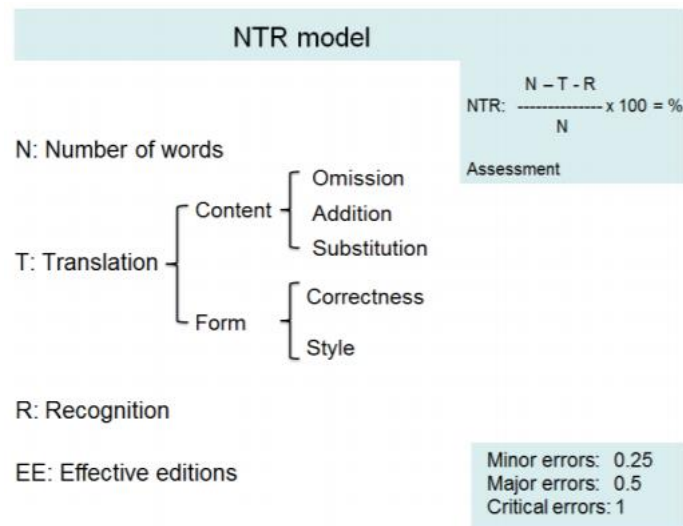


Figure 3.7: Overview of error types (Romero-Fresco and Pöchhacker, 2017).

Romero-Fresco and Pöchhacker (2017) explain that in comparison to the NER model, the error coding scheme accounts for minor, major, and critical translation and recognition errors penalised at 0.25, 0.5 and 1, respectively, as opposed to the minor, standard, and serious errors that are accounted for in the NER model. This adaptation highlights the relationship between major and minor errors and emphasises the severity of critical errors:

- Minor errors mean that the text can be followed but the meaning or the flow of the text may sometimes be interrupted, making it difficult to recognise original words.
- Major errors do not result in new meanings but do omit ideas from the text.
- Critical errors present factual mistakes or misleading information that create a new sense in the TT.

Interlingual respeaking is understood to require a similar skillset to that of SI due to its requirement to listen in one language and simultaneously transfer the message into another language. Although the NTR model does not explicitly account for interpreting errors, these errors are expected to be picked up from recognition errors such as intonation and punctuation.

Subjectivity in scoring has been noted as a concern. Translation has a subjective nature, as there is usually more than one correct way of translating a sentence, whether it is a different use of terminology or a different sentence structure. When assessing translation errors and distinguishing between them,

subjectivity can threaten accuracy and consistency. However, previous testing of ten evaluators has already proven to be successful, with a low average discrepancy of 0.3 on a scale from 1 to 10 (Romero-Fresco and Pöchhacker, 2017). Accuracy rates of respoken texts typically fall between 90–100%. An accuracy rate of 94% would appear to be a very high score; however, 94% could represent an unintelligible respoken text due to the quantity and severity of the translation and recognition errors. The recalculation of the accuracy rate on a 10-point scale (illustrated in the second column of Table 3.2) gives clarity to the actual quality of a respoken text, and the classification in the third column gives a further description for the performance of the participant.

| <b>Accuracy rate</b> | <b>Score out of 10</b> | <b>Classification</b> |
|----------------------|------------------------|-----------------------|
| < 96%                | (0/10)                 | Unclassified          |
| 96.4%                | (1/10)                 | Very poor             |
| 96.8%                | (2/10)                 | Poor                  |
| 97.2%                | (3/10)                 | Poor                  |
| 97.6%                | (4/10)                 | Satisfactory          |
| 98.0%                | (5/10)                 | Satisfactory          |
| 98.4%                | (6/10)                 | Good                  |
| 98.8%                | (7/10)                 | Good                  |
| 99.2%                | (8/10)                 | Very good             |
| 99.6%                | (9/10)                 | Excellent             |
| 100%                 | (10/10)                | Exceptional           |

Table 3.3: Recalculation of accuracy rate thresholds out of 10 and classifications [my classification].

Translation error analysis is a long-established practice within TS as proposals have focussed on either translation error categories (Delisle, 1993) or on correction categories and weighting criteria (Hurtado Albir, 1999; Adab, 2000) (de Higes Andino and Cerezo Merchán, 2018). Throughout this research the NER and NTR models have been used to analyse the quality of participants' and trainees' respoken texts to identify their strengths (through correct editions, effective editions and the assessment) and their weaknesses (through identifying translation and recognition errors). Examples of how the NTR model has been applied to assess the quality of respoken texts are presented in Section 4.2.5.

#### **3.4.4.5 Quantitative data analysis with SPSS**

Once each respoken text had been analysed by either the NER or the NTR model, the quantitative data of the edition, translation, and recognition errors of the main experiment had to be analysed for its statistical significance. Due to the complexity of the analysis, this stage of the research analysis was

outsourced to a professional statistician. SPSS software was used to analyse the statistical significance of the data. First, descriptive statistics of the analysed variables were calculated, and then differences in the results of the study were calculated for all videos, taking into account intergroup differences. All calculations were performed using the SPSS statistical package version 23.0. Details on the tests carried out are outlined in the methodology section of Chapter 5.

### **3.4.5 Post-experiment questionnaires**

The pilot and main post-experiment questionnaires (Appendices 2 and 5) were composed of the following sections: level of difficulty, expectations, performance, and skills. The questionnaires were designed to complement each other in order to obtain qualitative data on the task-specific skills required for interlingual respeaking. In the pre-experiment questionnaire, participants had the opportunity to express how they thought they might perform, whereas the post-experiment questionnaire allowed participants to reflect upon the test and to comment on how they perceived their own performance. Participants' past training and professional experience were expected to have an impact on the quality of the subtitles produced.

The level of difficulty section required participants to rate their performance and share the most difficult elements of the exercises by responding to questions that asked them to rank different aspects of the course and the test from the easiest to the most difficult. As the nature of the responses give information on the participants' opinions of the course, all questions in this section are attitudinal questions. A mixture of open- and closed-ended questions was used to elicit information of participants' expectations of the training delivered as part of this methodology. Open-ended questions allowed participants to freely express their interpretation of expectations and how they were or were not met. Closed-ended questions in this section guided participants to rank the usefulness of resources used during the course and to rate their exposure to types of course content. Sections on performance and skills were designed to complement one another in both questionnaires, allowing for comparisons to be made on participants' perceived performance and actual performance as well as perceptions on the skills and best-suited profile for an interlingual respeaker before and after the test. A mixture of open- and closed-ended attitudinal questions was used to obtain the data to make these comparisons.

The University of Vigo feedback questionnaire (Appendix 8) was composed of four sections: (1) the module in general; (2) suitability and usefulness of resources; (3) performance and progress; and (4) skills and competences. Section 1 includes a rating question to rate the overall difficulty of the course and open-ended questions for students to note their likes and dislikes of the course and their initial course expectations and whether or not they were met. Section 2 uses ranking questions to determine the usefulness of each course resource and students' exposure to different types of course content; open-ended questions seek to determine the type of content students would like to see in future courses and whether anything was missing from the course. Section 3 is composed of open-ended questions on students' opinions of their performance and their strengths and weaknesses as interlingual respeakers. Section 4 focusses on students' views of the main challenges of the task, the task-specific skills, and the best-suited professional profile for an interlingual respeaker.

#### ***3.4.5.1 Qualitative data analysis with NVivo***

The 88 questionnaires from the main experiment included various open-ended questions that referred to training, skills, and professional profiles. Some participants offered short answers and others offered much longer answers. The NVivo software allows for patterns to be found in qualitative data from questionnaires, interviews, and audio. Responses from the pre- and post-experiment questionnaires were imported into NVivo, and a node structure was created for each open-ended question. A node is a collection of references from the data of a specific theme, topic, or concept and can be either descriptive or analytical.

As themes of this project are already known, the following node structure was set up before importing the data to reflect the questions being analysed:

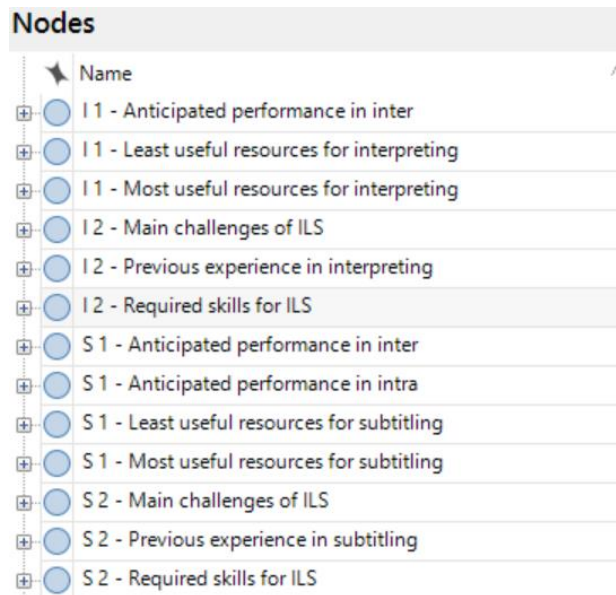


Figure 3.8: Example of a node structure to categorise questions.

Node hierarchies were then created to further categorise the data into smaller sub-themes based on the participants' responses:

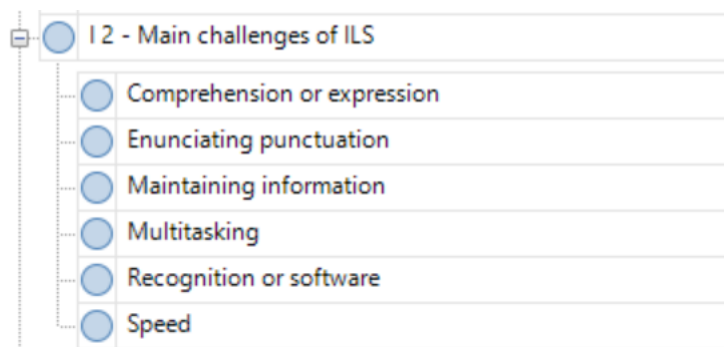


Figure 3.9: Example of a node hierarchy.

The node structures illustrated above allowed for data to be organised in a way and for patterns to be spotted in the questionnaire responses of all groups in order to draw meaningful qualitative conclusions on the skills required for interlingual respeaking, the best-suited professional profile for an interlingual respeaker, and participants' thoughts on previous interpreting and subtitling training.

### **3.5 Final thoughts**

The methodological framework illustrated in Figure 3.1 has been devised to ensure that the overarching orientation of AR allows for the research to be developed in stages, each time at a more advanced level of research and analysis. Each 'act and observe' stage follows a 'train, practice and test' approach to allow the results of each experiment to inform the design of the next experiment. The type of research falls into various categories and can be described as empirical, applied, or experimental research, with the training model and course for interlingual respeaking serving as a product-oriented output. A mixed-methods approach has been used to obtain the most suitable data at each stage of the research and to strengthen its validity. The most appropriate quality assessment models have been used to analyse respoken texts to transform the qualitative data of the respoken texts into quantitative data of the edition, translation, and recognition errors and accuracy rates. It may be that once these methods are applied, further advantages and limitations will arise; these will be discussed in each practical chapter that follows.

# Chapter 4

## Pilot experiment<sup>11</sup>

### An analysis of interlingual respeaking performance

#### 4.1 Introduction

The first experimental stage of the AR methodology takes the form of a pilot experiment, which is presented in this chapter. This pilot experiment was carried out in February 2017, and, as far as the researcher is aware, is the first on interlingual respeaking. Although it involves only a small number of participants, this experiment is an important step towards informing the practice of interlingual respeaking. The results will inform the main experiment of this project, which is the largest known experiment conducted on interlingual respeaking so far and has contributed to IO2 of the ILSA project. This pilot experiment was carried out to test the technical logistics of how the SR and screen recording software would work simultaneously while also playing a video; the pilot experiment also tests the suitability of the dictation practice and videos in order to predict issues that may arise when conducting a large-scale study. As explained in Section 2.5.9, comparisons are made between this pilot study and the SMART study throughout this chapter.

#### 4.2 Pilot experiment: methodology

##### 4.2.1 Design

The methodology of the pilot experiment took a 'train, practice and test' approach. Participants filled out a pre-experiment questionnaire, and a short session on interlingual respeaking was delivered for three hours; then, participants completed a respeaking test and filled out a post-experiment questionnaire. Finally, the participants further contributed by answering some questions and making observations about their experience of respeaking orally. Quantitative data was collected by analysing the respoken

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<sup>11</sup> Some sections of this chapter have been published in Dawson, H. (2019) 'Feasibility, quality and assessment of interlingual live subtitling: A pilot study', *Journal of Audiovisual Translation*, 2(2), pp. 36-56. [online]. Available at: <http://www.jatjournal.org/index.php/jat/article/view/72>



subtitles, and qualitative data was collected via the questionnaires. Individual performances were recorded with Screencast recording software and were analysed separately. For training, a short session on respeaking was delivered before the test, as most participants had not previously used Dragon. The session included respeaking theory within the broader subject area of AVT as well as an introduction to the differences between respeaking and stenography as methods for producing live subtitles, the challenges respeakers face, and what the task entails. The participants, who were mostly new to Dragon, were given basic training in the SR software on how to create their own user voice profile; participants also carried out a dictation practice to familiarise themselves with the software. Participants were able to practise dictation for 30 minutes – it should be noted that most participants chose to complete an intralingual dictation practice rather than interlingual. Participants then used the video clips – a narration, a speech, and a news story (outlined in Section 4.2.3) – to practise interlingual respeaking. Eight participants respoke the English videos into Spanish, and two participants respoke the Spanish videos into English. Participants could respeak the three video clips as many times as they wanted to within the hour given to practise interlingual respeaking.

#### **4.2.2 Participants**

This study took place in the language computer laboratory at the University of Roehampton. Participants received face-to-face training, and the researcher was present while leading the training and experiment. Ten participants took part in the study. However, due to technical issues, the data from Participant 5 is not available, and there is not enough data from Participant 10 to carry out a meaningful analysis. Of the remaining eight participants, seven were female, and one was male. Their average age was 32, the youngest being 23 and the oldest 48. There were six native Spanish speaking participants, one native English speaker (Participant 7) and one native German speaker (Participant 8) who respoke from English into Spanish. Two participants were professionals: one being a translation lecturer and professional translator and the other a speech-to-text interpreter. Six participants were postgraduate students in translation, two of which also worked in translation and teaching while studying.

|               | <b>Background</b>                                     |
|---------------|---|
| Participant 1 | Subtitling, interpreting, and intralingual respeaking |
| Participant 2 | Subtitling and respeaking                             |
| Participant 3 | Subtitling  |
| Participant 4 | Subtitling and interpreting                           |
| Participant 6 | Subtitling and intralingual respeaking                |
| Participant 7 | Subtitling and interpreting                           |
| Participant 8 | Interpreting and intralingual respeaking              |
| Participant 9 | Subtitling  |

Table 4.1: Details of participants' previous experience.

### 4.2.3 Material

Participants respoke three video clips interlingually: a narration, a speech, and a news story. Due to the two sets of language combinations (English into Spanish and Spanish into English), video clips of similar genres were made available in both Spanish and English. Only two participants respoke the news clip, so those results have not been included in the quantitative analysis. Participants did not have access to the written transcripts of the videos.

| <b>Language combination</b> | <b>Genre</b> | <b>Description</b>                           | <b>Duration</b> | <b>Words per minute (wpm)</b> |
|-----------------------------|--------------|--|-----------------|-------------------------------|
| 1. ES > EN                  | Narration    | Wildlife documentary                         | 00:02:24        | 73 wpm                        |
| 2. ES > EN                  | Speech       | Presidential speech                          | 00:02:24        | 131 wpm                       |
| 3. ES > EN                  | News         | RTVE – Robot museum                          | 00:01:58        | 191 wpm                       |
| 4. EN > ES                  | Narration    | <i>Desperate Housewives</i><br>opening scene | 00:02:33        | 102 wpm                       |
| 5. EN > ES                  | Speech       | Presidential speech                          | 00:02:04        | 101 wpm                       |
| 6. EN > ES                  | News         | BBC – 'Can a robot do<br>your job?'          | 00:02:09        | 173 wpm                       |

Table 4.2 Details of video clips used during the pilot experiment.

Table 4.2 shows the video clips that were chosen to represent the variety of content that would usually be respoken in a real-life scenario. The narration and speech videos had one speaker and the news videos had multiple speakers. The narration videos were chosen with the intention of allowing participants to carry out interlingual respeaking exercises with low speech rates and long pauses. The wildlife documentary clip covered animals who inhabit the Sahara, and a clip from the opening scene

of *Desperate Housewives* gave insight into a character's life before the show began. Although the genres are different, the narration clips were chosen because they were both delivered by a narrator and did not include specialist terminology. The two speech and news videos were chosen with the intention of replicating content in the form of a live event. The video in English was of former President Barack Obama delivering his farewell speech for the American news channel National Broadcasting Company (NBC). The speech in Spanish was of President Mariano Rajoy announcing former King Juan Carlos's abdication of the throne. The news clip in English covered the public's opinions on robots carrying out professional jobs, and the news clip in Spanish covered the opening of a robot museum in Spain. It was hoped that the slightly varying speech rates would allow for further analysis of participants' performance when respeaking at different speeds, which has been considered during the analysis.

Participants were given the option to watch each video before respeaking it and to attempt respeaking each video more than once. Only the first attempt was analysed for this pilot study. Participants were given one hour to work on the tasks and respeak each video into their native language through a microphone attached to the SR software Dragon. Since, at the time of this experiment, no subtitling software compatible with Dragon was available, participants were advised to place a reduced-size window of DragonPad underneath the video (as illustrated in Figure 4.1). DragonPad is similar to a Word document, and it allowed the participants to make a text box below the video so as to simulate the effect of live subtitles. The Screencast software captured each attempt by recording the mouse and keyboard movements on-screen and the audio from the microphone. The recordings are available in Appendix 11.

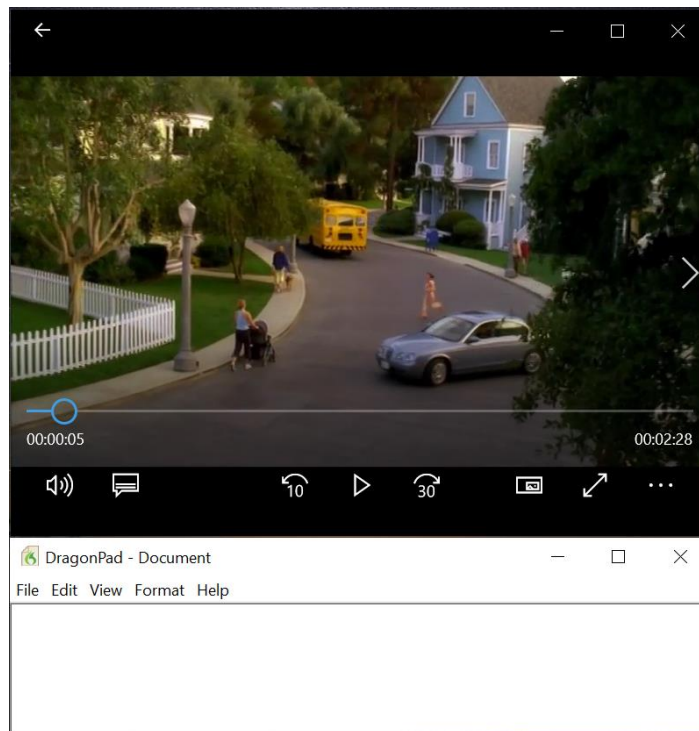


Figure 4.1: Example of participants' screen set-up.

#### 4.2.4 Questionnaires

Participants completed a pre-experiment questionnaire (Appendix 1) before any training was given. The questionnaire was composed of the following sections: biographical information, language skills, training, competence, subtitles, and respeaking. Closed questions served to determine the demographic of the sample and helped participants to rate their own competence in subtitling and interpreting. In the training, competence and subtitles sections, most questions were multiple choice so as to reflect the limited options for response. The respeaking section was composed of open-ended questions, allowing participants to express their current perceptions of respeaking and how they thought they might perform.

After the interlingual respeaking tests, participants completed a post-experiment questionnaire (Appendix 2) composed of the following sections: level of difficulty, expectations, performance, and skills. The level of difficulty and performance questions required participants to rate their performance and to share the most difficult elements of the exercises. The expectations and skills questions allowed participants to reflect in detail upon what happened during the exercises and to note how they perceived their own performance. Participants' perceptions on the skills and best-suited profile for an interlingual respeaker were sought before and after the test.

#### 4.2.5 Quality assessment

For the pilot experiment, a total of 16 texts were analysed, totalling approximately 3,500 words. The 16 respoken texts were assessed using the NTR model (Romero-Fresco and Pöchhacker, 2017), described in Section 3.4.4.4. An extract of how the model has been applied to the analysis of a respoken text can be seen in Table 4.3, and the results are available in Appendix 3. Examples of translation and recognition errors are highlighted in red, and effective editions are highlighted in yellow. Once the NTR model had been applied to all of the changes between the original dialogue and the respoken subtitles, the sums of the translation and recognition errors were totalled, and the NTR formula was applied to calculate the accuracy rate of the respoken text. An example of this can be seen in Table 4.4.

| Original text   | Respeaking-based subtitles   | Errors   |
|---|--|--|
| <p>My name is Mary Alice Young. When <b>you read</b> this morning's paper you may come across an article about <b>the unusual day</b> I had last week. Normally there is never anything news worthy about my life, <b>but</b> that all changed last <b>Thursday</b>. Of course, <b>everything</b> seemed quite normal at first, <b>I made</b> breakfast for my family, <b>I performed</b> my chores, <b>I completed</b> my projects, <b>I ran</b> my errands. In truth I spent the day, as <b>I spent</b> every other day, quietly polishing the routine of my life until it gleamed with perfection. That's why it was so astonishing when I decided to go to my hallway closet and retrieve a revolver that had never been used. My body was discovered by my neighbour Mrs Martha Hooper, who had been startled by a</p> | <p>Me llamo Mary Alice Young. Cuando <b>lees (leas)</b> (1) el periódico de esta mañana, quizá te encuentres un artículo sobre <b>10 en (el día)</b> (2) inusual que tuve la semana pasada. Normalmente, no hay nada nuevo en mi vida, <b>era (pero)</b> (3) todo cambió el <b>juez (jueves)</b> (4) pasado. <b>No (todo)</b> (5) era normal al principio, <b>(hice)</b> (6) el desayuno para mi familia, <b>hice</b> mis tareas domésticas, <b>completé</b> mis pequeños proyectos, y <b>e hice</b> mis recados. La verdad, me pasé todo el día como <b>medio pasó (me paso)</b> (7) el resto, puliendo la rutina de mi vida hasta que resplandecía de perfección. Por eso fue tan sorprendente que decidiese entrar en el vestidor y coger el revólver que nunca había sido usado. Mi cuerpo fue encontrado por mi vecina, Martha Hooper, a la que el sonido había sobresaltado.</p> | <p>1. MinR (0.25): incorrect tense but it does not impact comprehension.</p> <p>2. MajR (0.5): The target text becomes incoherent and as the error is strange the viewer would not be able to identify the source text.</p> <p>3. MinR (0.25): This slightly deters from the meaning of the text.</p> <p>4. MinR (0.25): The source text could still be recognised, given the idea has been mentioned previously.</p> <p>5. CritR (1): The target text introduces new misleading information that gives the text a new meaning.</p> <p>EE: No relevant information has been lost here. The</p> |

|  |  |   |
|--|--|---|
| <p>strange popping sound. Her curiosity aroused, Mrs Hooper tried to think of a reason for dropping in on me unannounced. After some initial hesitation, she decided to return the blender she had browed from me six months before.</p> <p>It's my neighbour I think she's been shot there is blood everywhere, yes, you've got to send an ambulance, you've got to send one right now. And for a moment, Mrs Hooper stood motionless in her kitchen grief stricken by this senseless tragedy, but only for a moment, if there was one thing Mrs Hooper was known for, it was her ability to look on the bright side.</p> | <p>Curiosa como <b>(es)</b> (8) la señora Hooper intentó encontrar una excusa para presentarse <b>sin invitar (sin invitación)</b> (9). Tras dudar un poco, decidió devolverme la batidora que me había pedido prestada hacía seis meses. Es mi vecina. Creo que le han disparado. Hay sangre por todas partes. <b>Si (Si)</b> (10). Tienen que mandar una ambulancia. Ahora mismo. Y, por un momento, la señora Hooper se quedó quieta en su cocina, <b>empastada (embargada)</b> (11) por la tragedia. Pero sólo por un momento. Si por algo era famosa la señora Hooper, era por su habilidad <b>de (para)</b> (12) mirar el lado bueno de las cosas.</p> | <p>respeaker has adopted a strategy to appropriately change the style of the text.</p> <p>6. MinR (0.25): The respeaker dictates 'hice' but the software does not recognise it. Although a verb is missing it does not impact comprehension.</p> <p>7. MajR (0.25): The source text cannot be recognised and information is lost.</p> <p>8. MinT (cont-omiss) (0.25): The respeaker did not dictate 'es'. It does not affect comprehension.</p> <p>9. MinT (form-corr) (0.25): The source text can still be understood; however, the original solution is unnatural in the source language.</p> <p>10. MinR (0.25): The source text can still be recognised and no information is lost.</p> <p>11. MinT (cont-subs) (0.25): Due to the context the source text can be understood but the original solution is unnatural.</p> <p>12. MinT (form-corr) (0.25): The source text can still be recognised but the original preposition is unnatural.</p> |
|--|--|---|

Table 4.3: Extract of the NTR analysis of the narration text by Participant 2.

An accuracy rate was calculated for each respoken text of the pilot study. Below, a breakdown of the errors is provided for each participant. The minor, major, and critical translation errors are displayed as (MinT – MajT – CritT). The minor, major, and critical recognition errors are displayed as (MinR – MajR – CritR). As noted in Section 3.4.4.4, errors are also penalised according to their severity: recognisable (*minor*, -0.25), causing confusion or loss of information (*major*, -0.5), or introducing misleading information (*critical*, -1).

| <b>Accuracy rate</b>   |   |
|--|---|
| MinT: (4 x 0.25 = 1)<br>(cont-omiss) x 1<br>(cont-sub) x 1<br>(form-corr) x 2<br>MajT: 0<br>CritT: 0<br>Total: 1   | MinR: (5 x 0.25 = 1.25)<br>MajR: (2 x 0.5 = 1)<br>CritR: (1 x 1 = 1)<br>Total: 3.25 |
| <b>NTR accuracy rate</b>   |   |
| N = 243 (209 + 34)   | $\frac{243 - 1 - 3.25}{243} \times 100 = 98.25\% (5/10)$                            |
| EE: 3  |   |
| <b>Assessment</b>  |   |
| The quality of the subtitles is acceptable. The translation is good (there are only four translation errors, one regarding content and two regarding style); however, there are perhaps too many recognition errors (10), of which two cause the viewers to lose information and another one introduces misleading information. Still, most of the errors are minor and therefore do not have a significant impact on comprehension. |   |

Table 4.4: Extract of the NTR assessment of the narration text by Participant 2.

### 4.3 Quantitative results

Table 4.5 shows the minor, major, and critical translation and recognition errors made in ‘Video 1: narration’. Overall, participants made more minor errors than major errors and more major errors than critical errors. Average scores of 6.2 translation errors and 9.3 recognition errors were made per participant. The overall average accuracy rate is 97.35% (3/10). The most common errors were cont-omiss (omissions), with an average of 9.5 per text, followed by cont-subs (mistranslations) (2), form-corr (1.9), form-style (0.4), and cont-add errors (0.1). The results indicate that participants struggled to

transfer all of the information from the ST to the TT but that they dealt with mistranslations well and managed to maintain the correct register and grammar.

|               | <b>Translation errors</b> | <b>Recognition errors</b> | <b>Accuracy rate</b> |
|---------------|---------------------------|---------------------------|----------------------|
| Participant 1 | (1-0-0)                   | (8-5-0)                   | 97.98% (4/10)        |
| Participant 2 | (4-0-0)                   | (5-2-1)                   | 98.25% (5/10)        |
| Participant 3 | (4-0-0)                   | (8-6-0)                   | 96.93% (2/10)        |
| Participant 4 | (3-0-0)                   | (10-3-0)                  | 97.87% (7/10)        |
| Participant 6 | (4-1-1)                   | (4-4-0)                   | 97.38% (3/10)        |
| Participant 7 | (2-4-0)                   | (3-5-0)                   | 96.42% (1/10)        |
| Participant 8 | (9-3-1)                   | (0-1-0)                   | 97.45% (3/10)        |
| Participant 9 | (8-2-2)                   | (3-1-0)                   | 96.50% (1/10)        |
| Average       | (4.4-1.25-0.5)            | (5.8-3.4-0.1)             | 97.35% (3/10)        |

Table 4.5: Translation and recognition errors per participant for Video 1.

In 'Video 2: speech', the participants again made more minor errors than major or critical errors. Participants had an average score of 6.5 translation errors and 4.5 recognition errors. The overall average accuracy rate is 97.38% (3/10). This clip was deemed to be the easiest clip to respeak. The most frequently made errors were cont-omiss, with an average of 3.6 per text, followed by cont-subs (1.1), form-style (0.8), form-corr (0.6), and cont-add errors (0.1). Similar to Video 1, these results show that participants struggled to maintain all of the information but managed mistranslations, grammar, and register well.

|               | <b>Translation errors</b> | <b>Recognition errors</b> | <b>Accuracy rate</b> |
|---------------|---------------------------|---------------------------|----------------------|
| Participant 1 | (1-1-0)                   | (7-5-0)                   | 97.86% (4/10)        |
| Participant 2 | (4-0-0)                   | (3-1-0)                   | 98.75% (6/10)        |
| Participant 3 | (4-2-2)                   | (4-1-0)                   | 97.17% (2/10)        |
| Participant 4 | (5-0-2)                   | (1-3-0)                   | 97.86% (4/10)        |
| Participant 6 | (7-2-1)                   | (0-1-0)                   | 97.58% (3/10)        |
| Participant 7 | (3-1-0)                   | (1-0-1)                   | 96.09% (0/10)        |
| Participant 8 | (5-6-0)                   | (0-1-0)                   | 96.99% (2/10)        |
| Participant 9 | (4-1-1)                   | (2-2-2)                   | 96.73% (1/10)        |
| Average       | (4.1-1.6-0.8)             | (2.3-1.8-0.4)             | 97.38% (3/10)        |

Table 4.6: Translation and recognition errors per participant for Video 2.



Participant 2, who performed exceptionally well compared to the others, had previous training in subtitling and respeaking. Participants 1 and 4 also performed very well in comparison to the others. Participant 1 had a background in subtitling, interpreting, and respeaking and Participant 4 had a background in subtitling and interpreting. Participants who scored between 96%–97.99% are not considered to have performed well, as the threshold for live subtitles of good quality is 98%.

|               | <b>Translation errors</b> | <b>Recognition errors</b> | <b>Accuracy rate</b> |
|---------------|---------------------------|---------------------------|----------------------|
| Participant 1 | (2-0-0)                   | (15-10-0)                 | 97.92% (4/10)        |
| Participant 2 | (4-0-0)                   | (8-3-1)                   | 98.50% (5/10)        |
| Participant 3 | (8-2-2)                   | (12-7-0)                  | 97.05% (2/10)        |
| Participant 4 | (8-0-2)                   | (11-6-0)                  | 97.86% (4/10)        |
| Participant 6 | (11-3-2)                  | (4-5-0)                   | 97.48% (3/10)        |
| Participant 7 | (5-5-0)                   | (4-5-1)                   | 96.26% (0/10)        |
| Participant 8 | (14-9-1)                  | (0-2-0)                   | 97.22% (3/10)        |
| Participant 9 | (12-3-3)                  | (5-3-2)                   | 96.61% (1/10)        |

Table 4.7: Overall individual performance with translation and recognition errors.

The average accuracy rate for the SMART pilot study was 92.78% (0/10), compared to the average accuracy rate for this pilot study being 97.37% (2/10). It would be unfair to compare these two studies, as the videos for the pilot study were approximately two minutes long while those for the SMART study were approximately seven minutes long. However, the SMART participants were trained for a total of eight hours, whereas the participants in this study were trained for two hours. This information highlights the impact that the duration of the video and the participants' resilience may have had on the accuracy rates. In this study, the participants would not have experienced much fatigue; also, they had breaks in between respeaking the videos, which could be a contributing factor to the higher accuracy rates.

#### **4.3.1 Translation errors**

The most common translation errors were cont-omiss with an average of 6.6 errors per text, followed by cont-subs with an average of 1.6 errors, form-corr (1.3), form-style (0.6), and cont-add (0.1). These results suggest that omissions should be a focal point in interlingual respeaking training. A high number of omissions may indicate that participants were either struggling to keep up with the speed of the text

or that they did not know how to translate some parts of the text and therefore resorted to making omissions. A strategy to keep up with the text is to edit or condense it without causing loss of information. However, in the case of live subtitling, and if the editing is not performed correctly, this may cause a loss of information for the viewer and, in turn, lower the accuracy rate of the text.

The results of the SMART study also show that participants found omissions and substitutions difficult to manage when respeaking, as these were the two most common translation errors, followed by form-corr, form-style, and cont-add. Various examples of errors from the pilot experiment are available in Appendix 3. This highlights that managing speed, multitasking, and dealing with dense information should be developed in a training programme. The results from the SMART study also point to interlingual respeaking as feasible and ambitious but not unattainable (Davitti, Sandrelli and Romero-Fresco, 2018).

#### **4.3.2 Translation error severity**

An average of 5.8 minor omissions and 0.75 major omissions were made per text, suggesting that participants were omitting pieces of information but they managed to keep the main idea of sentences. No critical omission errors were made. As per the NTR model, the loss of a dependent idea unit is the omission of part of a sentence containing information about the 'where', 'what', 'when', 'who', or 'why' piece of information and is usually scored as a minor translation error (Romero-Fresco and Pöchhacker, 2017). For example, in some instances a participant missed the time or the place; therefore, the 'when' or the 'where' piece of information was missing from the sentence. An omission of an independent idea unit is the omission of a whole sentence; this is usually scored as a major translation error, as it causes a substantial loss of information. Most of the time, enough information has been displayed and the viewer can follow what is happening; however, the subtitle viewer can still miss information (caused by omitted text) that a hearing audience would have access to. Detailed examples of translation errors can be found in Appendix 3.

#### **4.3.3 Recognition errors**

In the pilot study, participants made on average 6.3 recognition errors in each text, with 8.3 errors in the narration video and 4.3 in the speech video. For the SMART study, the average number of

recognition errors was 5.4 errors per text; more omissions, substitutions, and form-corr errors were made than recognition errors. Participants in the SMART study could have made fewer errors because they received more dictation and intralingual respeaking practice. Such practice would have allowed participants to train their voice profiles before beginning the interlingual respeaking exercises.

Participant 1 made the most recognition errors, with an average of 12.5 errors per text, and the least amount of translation errors, suggesting that they focussed on translation but in turn compromised recognition. In contrast, Participant 8 made on average 1 recognition error and 12 translation errors per text, suggesting that they focussed on dictation and compromised translation. There is no doubt that interlingual respeaking is a complex task. Trainers and students should find a happy medium between translation and recognition errors – they should explore many strategies and techniques to overcome both types of errors and to produce interlingual live subtitles that meet the quality standard of 98% accuracy.

#### **4.3.4 Recognition-error severity**

Participants in this study made on average 4.2 minor errors, 1.4 major errors, and 0.6 critical errors per text, suggesting that they were able to manage the severity of errors. These results suggest that more dictation practice is needed to train the user voice profile, dictate at a steady pace and volume, and make regular pauses to release words on-screen. Participant voices and on-screen actions can be observed in the Screencast clips. Some clips show that poor pace and dictation caused recognition errors. For future studies, more dictation practice is required to allow those who are good live translators not to underperform due to poor dictation or using an untrained voice profile. Participants did not pause enough to release the respoken words on-screen; therefore, they did not have the opportunity to monitor their respoken output and attempt to correct their recognition errors live. Again, this point adds to the importance of building upon and developing new software skills in a training programme. Detailed examples of recognition errors can be found in Appendix 3 on the USB.

#### **4.3.5 Overall analysis of translation and recognition errors**

Those who achieved 97% or above have an average of 8.5 minor errors, 4 major errors, and 0.7 critical errors (penalisation of -4.7). Those who achieved below 97% have an average of 13 minor errors, 8

major errors, and 3 critical errors (penalisation of -10.25). This suggests that the best respeakers from this experiment were able to keep their critical errors to a minimum and managed to have half the number of major errors. For instance, in the case of omissions, this means that participants managed to omit only part of a sentence instead of the full sentence on twice as many occasions. Translation errors can be controlled by the respeaker, whereas recognition errors tend to be uncontrollable when they are not caused by pronunciation or dictation issues, as they can also be caused by software or hardware malfunction. Therefore, to a certain extent, the severity of recognition errors can also be put down to luck.

The comparison between translation errors and recognition errors shows another interesting pattern. The four best respeakers collectively made more recognition errors (63) than translation errors (36), whereas the respeakers who did not reach 97% collectively made more translation errors (64) than recognition errors (39). The best respeakers of this experiment have very good live translation skills, as they have fewer and less severe translation errors. Most of the errors that these participants have are recognition errors, which means that their scores could have been considerably higher had they received thorough software training. For the four poorest performing respeakers, the average number of translation errors (64) that they made suggests that live translation was their main weakness; this could perhaps be remedied through extensive language and interpreting training.

#### **4.4 Qualitative analysis**

After completing the exercises, participants were asked to rate the level of difficulty of the task on a scale of 1–5 (1 being easy and 5 being difficult). Participants were aware of how they were performing. Those who rated themselves as 'satisfactory' scored higher than those who rated themselves as 'poor', with the exception of Participant 3. For example, some reported that they felt the software was giving them instant feedback in the form of recognition errors as they respoke. Some participants found this difficult to manage while also trying to perform well. Table 4.8 shows that the average score for the level of difficulty is 4, supporting the notion that interlingual respeaking is perceived as a complex task. It must be noted that the participants were not aware of what score constituted as poor or good, etc., due to their lack of knowledge of the NTR model.

In the post-experiment questionnaire, two participants stated that they found the respeaking tasks to be linguistically difficult, seven found the speed difficult, and one found the content comprehension difficult. Other comments included: dealing with long sentences, fear of missing information, their feelings as a respeaker as some felt the software was giving them bad feedback and monitoring their own output.

|               | <b>Level of difficulty</b> | <b>Perception of overall performance</b> | <b>Actual overall performance</b> |
|---------------|----------------------------|--|-----------------------------------|
| Participant 1 | 5                          | Satisfactory                             | 97.92% (4/10)                     |
| Participant 2 | 4                          | Satisfactory                             | 98.50% (5/10)                     |
| Participant 3 | 3                          | Satisfactory                             | 97.05% (2/10)                     |
| Participant 4 | 4                          | Satisfactory                             | 97.86% (4/10)                     |
| Participant 6 | 3                          | Satisfactory                             | 97.48% (3/10)                     |
| Participant 7 | 4                          | Poor                                     | 96.26% (0/10)                     |
| Participant 8 | 4                          | Poor                                     | 97.22% (3/10)                     |
| Participant 9 | 5                          | Poor                                     | 96.61% (1/10)                     |

Table 4.8: Participants' self-rated performance compared with their actual performance.

In the post-experiment questionnaire, participants stated that an interlingual respeaker would likely come across the following challenges: the speed of the ST, using the software, avoiding recognition errors, the distraction of the subtitles appearing on-screen, the necessity of linguistic knowledge and multitasking as well as having to remember to enunciate punctuation and having to pay attention to the interpretation. Participants noted linguistic knowledge and multitasking as the two main challenges for an interlingual respeaker, thus suggesting that an advanced level of the working languages is essential to produce interlingual live subtitles. Multitasking was highly regarded by participants as a key skill. This perhaps indicates a requirement of experience in SI so that respeakers can listen in one language while speaking in another, not forgetting the added element of working with software, such as Dragon to correct errors.

Participants identified various skills that interlingual respeakers would require to improve their performance. Overall, these skills were noted in both questionnaires, indicating that participants correctly predicted the skills deemed necessary to perform well. The following required skills were noted: a strong level of comprehension in the SL, a strong level of expression in the TL, communication, speed, multitasking, listening, software knowledge, memory, segmentation, and reformulation. Aside

from these skills, it appears that several specific characteristics may also be useful for an interlingual respeaker; these characteristics include the ability to work under pressure, to keep pace, and to focus. After completing the exercises, six out of eight participants identified that an interpreter would be the best-suited profile for an interlingual respeaker. Two added simultaneous interpreting as the specific mode of interpreting, one noted that it should be an interpreter with training in respeaking, and another noted that it should be an interpreter that can work with the software. Two suggested a translator would be ideal, and nobody noted a subtitler as the best-suited professional profile. Some participants noted more than one best-suited profile. The results of this experiment are interesting; however, further research is needed to draw more meaningful conclusions. Experience in translation or subtitling along with experience in respeaking are clear advantages, but interpreting skills are expected to be the main feature of interlingual respeaking.

#### **4.5 Informing the main experiment**

As touched upon throughout this chapter, the results of the pilot experiment shed light on some important aspects to take into consideration when designing a large-scale experiment:

- All participants noted that they thought they could have performed better if they had received more than one hour of training.
- It appears that subtitling, interpreting, and intralingual respeaking training all hold importance in order to succeed in interlingual respeaking.
- The best performers seemed to be strong live translators, but their accuracy was compromised with poor recognition. This calls for more extensive dictation practice to allow strong live translators to not to underperform due to a lack of software knowledge or dictation practice.
- The poorest performers appeared to struggle with live translation, suggesting that they did not already possess this skill within their skill set. To give those with little live translation experience the chance to perform well, extensive language and interpreting training may be required.
- The severity of errors was one of the main differences between the performance of the good and poor performers. To manage the error severity, trainees should receive information and

training on the causes of minor, major, and critical errors and on how to correct major and critical errors live.

Considering these findings, a main experiment has been conducted and, where possible, addresses the points above. To collect concrete data on the task-specific skills required and to determine the best-suited professional profile for an interlingual respeaker, it is important to give participants longer dictation practice to train their user voice profile; this is necessary because it stops good performers from underperforming due to poor dictation. Intralingual respeaking practice is also necessary to develop the multitasking aspect of respeaking, to practise with the software, and to train the voice profile. Once participants have had the chance to work on the aforementioned skills, they could move on to interlingual respeaking practice. The hybrid nature of interlingual respeaking calls for participants to understand the useful skills that can be obtained from subtitling, such as segmentation to ensure that pauses are made to release logical chunks of text, and reformulation; from interpreting, such as listening and speaking at the same time and live translation.

To conduct the main experiment, a four-week course, of around two hours per week, was designed to train a large number of participants online so that they could produce a series of respoken texts; these texts were then analysed to gather important data on the translation and recognition errors and the accuracy rates of each respoken text. A pre-course questionnaire will collect data on the demographic of the sample, participants' previous training, and their expectations of respeaking. The pre-course questionnaire will allow for a comparison of the participants' expected performance with their actual performance and will gather details on what they think the task-specific skills and best-suited profile is for an interlingual respeaker. The course was structured as follows:

- Pre-course questionnaire
- Week 1: Dictation practice
- Week 2: Intralingual respeaking with subtitling readings
- Week 3: Interlingual respeaking with interpreting readings
- Week 4: Interlingual respeaking test
- Post-course questionnaire

A larger number of participants should include the following backgrounds from either student or professional perspectives: a clear-cut subtitling background, a clear-cut interpreting background, and perhaps a mixed background of subtitling and interpreting training. Having 25 participants in each group to ensure statistical validity (Orero et al., 2018); however, in this case, participants would require training in respeaking to complete a short course and an interlingual respeaking test. As participants would obtain a similar level of knowledge in respeaking before being tested, a lower number of participants could be afforded. With longer training and larger groups of participants, more concrete assumptions could be made from a large-scale experiment.

As previously explained, given the hybrid form of the task, the main experiment should be centred around the skills necessary for subtitling, interpreting, and intralingual respeaking. A practical proposal for intralingual respeaking was put forward by Arumí Ribas and Romero-Fresco (2008); it notes that identifying skills is a fundamental first step to designing a respeaking course. In this instance, a similar taxonomy of skills may be what is needed to first highlight the skills required for interlingual respeaking and to later inform training. Pöchhacker and Remael (2019) describe interlingual respeaking as a three-step process that includes pre-process, peri-process, and post-process tasks. Dividing skills according to the processes that make up the task would offer more clarity as to why each skill is necessary.

Interlingual respeaking is about providing a service to heighten access. It is, therefore, important that training is also made accessible to trainees. Trainees may be current undergraduate or postgraduate students aiming to learn a new skill, and others may already be well-established translators, subtitlers, or interpreting professionals. The demographic of participants that took part in this pilot study is likely to be representative of the future trainees of interlingual respeaking (current postgraduate students and language professionals). An online training programme may cater for the need for accessibility and encourage students to work at their own pace as opposed to face-to-face training. The mere fact of training taking place online does not mean that students will feel empowered to engage with others and take control of their own learning. However, online training may require students to be more responsible for their learning. This may contribute to the creation of a programme that university students and already-established professionals are more inclined to participate in. From a social-constructivist approach, Kiraly (2000) proposes that translator education should be a dynamic, interactive process: one that is based on learner empowerment and that encourages interpersonal collaboration and in which teachers serve as guides, consultants, and assistants. Training based on this approach, as



explained by Kiraly, would encourage a sense of responsibility towards students' own learning and the future profession.

#### **4.5.1 The NTR model as a quality-assessment method**

The NTR model's primary function is to assess the quality of interlingual live subtitles. However, this model could also be used within a training programme to raise awareness of how live subtitles are assessed. The NTR model could allow students to assess each of their respoken texts, identify errors, and categorise error severity. Instead of just simulating a spot-the-error exercise, the use of quality assessment models should provide food for thought as far as training is concerned (Romero-Fresco & Martínez, 2015) and could help to identify learners' strengths and weaknesses. This may provide a further understanding of how and why translation and recognition errors are made. It could also give students a space to reflect on their performance with different types of audiovisual text and pave the way for students to develop techniques to manage the severity of errors or to avoid them altogether. There may also be room for peer review within training to reduce the subjectivity of students analysing their own texts. Peer review may be an effective way of receiving feedback. Similar to the NER model, the NTR model allows for an overall qualitative and quantitative assessment, which could prove insightful for critical peer review exercises between trainers and students.

Most of the results presented in Section 4.3 were low and did not meet the required 98% threshold (meeting this threshold means that a respoken text is suitable for broadcast). When the initial SMART results (Davitti, Sandrelli and Romero-Fresco, 2018) were presented at the 2018 Languages and the Media conference, some scholars suggested that the 98% threshold, which has been maintained from the NER to the NTR model, should be re-evaluated to account for the language transfer process that takes place in interlingual respeaking. However, from the results presented in Section 4.3, the language transfer does seem feasible. Further testing and quality assessment will shed light on whether participants can consistently reach 98%. When the accuracy rates fell below approximately 97.50%, the respoken texts started to become unintelligible; this is because they contained more major errors, which are nonsensical or cause a complete loss of information.

Tables 4.9, 4.10, and 4.11 show comparisons of translation errors and demonstrate the differences in errors that participants with high and low accuracy rates made. The following examples have been

taken from the respoken texts of Video 1 by Participant 2, who achieved an accuracy rate of 98.25%, Participant 8 (97.45%), and Participant 9 (96.50%); these three examples represent good, satisfactory, and poor results, respectively. Thorough details and examples of translation and recognition errors are available in Appendix 3, which outlines the interlingual respeaking performance of each individual participant of in pilot experiment.

Participant 2 achieved good results in both interlingual respeaking exercises, with 98.25% in Video 1 and 98.75% in Video 2. The translation of Video 1 is good, with four minor translation errors. One minor error is caused by a small omission, which does not cause a loss of information, and the remaining three are due to the text appearing unnatural in the TL. These three examples suggest that when a respeaker rushes the translation or has to perform as a live translator, the structure of the TT could be closer to the SL than the TL. Participants were allowed to train Dragon with names before respeaking the videos. In this case, the training worked as the proper noun ‘Hooper’ has been recognised correctly.

| Source Text  | Target Text (error)  | Target Text (correction)  |
|--|--|---|
| Her curiosity aroused, Mrs Hooper tried to think of a reason...  | Curiosa como la señora Hooper intentó encontrar una excusa...                                      | Curiosa como <b>es</b> la señora Hooper intentó encontrar una excusa...                                     |
| And for a moment, Mrs Hooper stood motionless in her kitchen grief stricken by this senseless tragedy. | Y, por un momento, la señora Hooper se quedó quieta en su cocina <b>empastada</b> por la tragedia. | Y, por un momento, la señora Hooper se quedó quieta en su cocina <b>embargada</b> por la tragedia.          |
| ... if there was one thing Mrs Hooper was known for, it was her ability to look on the bright side.    | Si por algo era famosa la señora Hooper, era por su habilidad de mirar el lado bueno de las cosas. | Si por algo era famosa la señora Hooper, era por su habilidad <b>para</b> mirar el lado bueno de las cosas. |

Table 4.9: Participant 2, unnatural translation.

Participant 8 achieved 97.45% in Video 1 and 96.99% in Video 2 and made translation errors that were more severe than those of Participant 2. Participant 8 kept up with the text, but the majority of their translation errors were mistranslations, poor choices of terminology, or grammatical errors. Notably, the participant was not working in or out of their native language. In the first example below, the word ‘normalmente’ was omitted; this would cause the viewer to lose the sense of the ‘daily life’ being described in the text. The participant also added the word ‘último’, which is unnecessary as the text already conveys this in ‘jueves pasado’. In the second example, the respeaker omitted ‘hay sangre por

todas partes'; since this could also be a separate sentence, it means that an independent idea unit was omitted, causing a major translation error. The critical translation error can also be seen here, as 'la mataron' introduces misleading information – at this point the viewers do not know the character has died. A more appropriate translation solution would have been 'le han disparado' to convey the meaning that they thought the character had been shot.

| Source Text  | Target Text (error)   | Target Text (correction)  |
|--|---|---|
| Normally there is never anything newsworthy about my life, but that all changed last Thursday. | No pasa nada especial en general, pero todo cambió el último jueves pasado. | <b>Normalmente</b> no pasa nada especial en general, pero todo cambió el ( <b>último</b> ) jueves pasado. |
| It's my neighbour I think she's been shot there is blood everywhere...                         | Es mi vecina, creo que la mataron.  | Es mi vecina, <b>le han disparado, (hay sangre por todas partes).</b>                                     |

Table 4.10: Participant 8, omissions.

Participant 9 achieved an accuracy rate of 96.50% in Video 1 and 96.73% in Video 2 and made the most severe translation errors when compared to Participants 2 and 8. In the examples above, the participant made two critical translation errors very close to one another. Both introduce misleading information that makes sense in the TT. The new information introduced does not give extreme false information as in other examples, but rather it could cause confusion should 'la semana pasada' or 'el jueves pasado' be mentioned again.

| Source Text                             | Target Text (error)                        | Target Text (correction)                                      |
|---|--|---|
| ... the unusual day I had last week...  | ... la mañana tan extraña que tuve ayer... | ... la mañana tan extraña que tuve <b>la semana pasada...</b> |
| ... but that all changed last Thursday. | ... pero eso fue diferente ayer.           | ... pero eso fue diferente <b>el jueves pasado.</b>           |

Table 4.11: Participant 9, critical translation errors due to cont-subs.

As seen above, it could be the severity of the errors that contributes to the poor accuracy rate of a text rather than the quantity of errors overall, as the more serious the error, the more it is penalised. A text that reaches an accuracy rate of 95% could be almost unintelligible, so those not familiar with the model could misinterpret these accuracy rates. The acceptable accuracy rate for both intra- and interlingual live subtitles is 98%. To mitigate against any confusion, the NTR model offers a recalculation of the

accuracy rate on a 10-point scale. This would be another benefit of using the NTR model in a training programme, as it would highlight the actual quality of the respoken texts from an early stage so as to allow students to quickly grasp the concept of accuracy rates. Subjectivity in scoring has been noted as a minor concern of the NTR model. When assessing translation errors and distinguishing between them, subjectivity could potentially threaten accuracy and consistency. The average discrepancy from the analysis of this pilot study was 0.38%. The author of this thesis served as the first marker of the texts, and a co-creator of the model served as the second. Most discrepancies were due to the content of translation errors, which could be due to the first marker translating out of their mother tongue. If, in an NTR analysis, a minor error has been scored as a major error, it will have little impact on the final accuracy rate. For this pilot study, such discrepancies minimally increased the accuracy rates by an average of 0.12%, which changed the overall score by one point out of 10 only 12% of the time.

A total of 18 texts were produced and analysed in this pilot study. The model was applied to a small volume of short texts of different types and proved to provide a simple and thorough method of assessing translation and recognition errors. The average number of words for each respoken exercise in this study was 261 words. Texts that achieved 97.50% or above took on average 21 minutes to analyse with the NTR model, and texts that achieved 97.49% or less took on average 33 minutes to analyse due to the extra errors that had to be identified, categorised, and scored. The simplicity and thoroughness of the NTR model allows for it to be flexible in its application to texts produced by different means, i.e. by respeaking and automatic SR, as well as supporting training in interlingual respeaking to analyse the accuracy of interlingual dictation (sight translation) to support the early training of interlingual respeakers.

#### **4.6 Final thoughts**

Due to the reduced sample size, these findings are still rather inconclusive. Nonetheless, it seems reasonable to use them as a starting point for the design of the large-scale experiment. It appears that challenges could be overcome by developing task-specific skills in training. For subtitling, the knowledge of SDH and edition are required. Developing short-term memory, speed, and multitasking all highlight the requirement for elements of training to mirror SI. Specific skills for respeaking would be software related and should include the 'unlearning' of skills, such as speaking in a pleasant voice due

to the importance of dictation and enunciation. Live translation skills are essential for interlingual respeaking as is the ability to dictate accurately to the SR software.

Results from this pilot study have shown that an awareness of omissions and recognition errors should be incorporated into a training programme. Omissions have proved to have an impact on the overall accuracy rates, and they cause losses of information for the viewer. The causes of recognition errors highlight dictation as an essential part of respeaking training, as many errors were due to participants over-dictating by pronouncing individual syllables of words thereby causing misspellings of short words. Managing the error severity is an essential aspect of interlingual respeaking. It appears as though participants with good live translation skills can control the severity of translation errors by keeping standard and especially critical errors to a minimum, even at the expense of increasing minor errors. The severity of recognition errors cannot normally be controlled. This emphasises the need for extensive dictation practice and developed software skills to minimise such errors. Participants who are not strong live translators may find it difficult to reach the minimum accuracy threshold of 98%, even if their dictation is good.

More research is required to determine the best-suited professional profile for an interlingual respeaker. The qualitative data suggests that an interpreter would be best suited. However, the quantitative data shows that the highest performing participants did not have previous interpreting training, which may give some hope for subtitling skills to be useful in training. The results of this pilot experiment are promising, and the observations made in Section 4.5 have proved useful for informing the design of longer training on a larger scale, which will be presented in the following chapter.

# Chapter 5

## Main experiment

An analysis of the interlingual respeaking performance of participants with interpreting and subtitling backgrounds

### 5.1 Introduction

The pilot experiment, presented in Chapter 4, formed the first stage of the AR spiral of this project. Its results informed the data collection methods, materials, and logistics of the second stage, which is the main experiment that is presented in this chapter. A total of 44 participants took part in the main experiment. All participants were postgraduate students studying in the areas of interpreting and subtitling. They received brief training in dictation, intralingual, and interlingual respeaking and carried out various respeaking exercises.

This chapter presents an analysis of the interpreting and subtitling students' performance of interlingual respeaking throughout the short online interlingual respeaking course. Data for the present main experiment were gathered from the test results as well as from the participants' exercises that were completed for training purposes. This chapter begins by contextualising the importance of interpreting and subtitling skills in interlingual respeaking and details the methods that were considered in Chapter 3, which were applied to the experiment before presenting the results. A quantitative analysis of the performance compares interpreters with subtitlers and breaks down edition and recognition errors for the intralingual respeaking exercises (NER model) and translation and recognition errors for the interlingual respeaking exercises (NTR model). A statistical analysis was also carried out since data were available from a large sample size of 44 participants. A qualitative analysis composed of participant questionnaire responses explores other aspects of their performance, such as competence, challenges, skills, course resources, and content exposure. A section devoted to training explores the task-specific skills that interpreters and subtitlers already have due to their previous experience as well as the skills that they must develop to perform well as interlingual respeakers. This chapter concludes

with how these results can inform the third stage of this AR project and future training for interlingual respeaking. The pre- and post-experiment questionnaires and an individual analysis of participant performance are available in Appendices 4, 5, and 6, respectively.

## **5.2 Interpreting and subtitling skills in respeaking**

Chapter 2 introduced subtitling and interpreting and touched upon their relevance to respeaking. There is no doubt that a wide range of skills is needed to work as an interlingual respeaker; however, to create a training model and course, the task-specific skills and the best-suited professional profile for an interlingual respeaker must be identified. There is a consensus that respeaking combines the process of interpreting with the product and content of subtitles (Romero-Fresco, 2020); therefore, the best-suited profile is likely to be that of an interpreter or a subtitler. Sections 5.2.1 and 5.2.2 will briefly outline the interpreting and subtitling skills believed necessary for interlingual respeaking. Section 8.2 categorises the task-specific skills as per the pre-, peri-, and post-process stages of interlingual respeaking and details the importance of each skill.

### **5.2.1 Interpreting skills**

Many skills required for SI are transferable to respeaking; however, the differences between the two tasks may expose the skills that interpreters need to develop further. The process of listening and speaking at the same time is the most obvious similarity and calls for skills such as multitasking and verbal communication. There is perhaps less of a need to speak in a 'pleasant' tone while respeaking since speaking in a neutral voice facilitates dictation, and the focus is on the textual output being produced. Interpreters may be required to 'unlearn' speaking in a pleasant tone in order to facilitate the SR software's understanding (Dawson, 2019). Skills such as SL comprehension, live translation ability, and TL expression are all required for managing the language transfer process that SI and respeaking require in the deliverance of live translations. Knowledge of current affairs may also be beneficial to facilitate comprehension of the SL and to deliver an accurate live translation (Pöchhacker and Remael, 2019). Aside from live translation skills, the live nature of the task also calls for quick thinking and short-term memory skills that can deal with the speed of live translation. Although short-term memory skills may be an obvious requirement for SI (Pöchhacker, 2015; Pedersen, 2017) and interlingual respeaking,

interpreters may also need to develop their long-term memory skills in order to enhance their knowledge of current affairs (Pöchhacker and Remael, 2019); this knowledge may serve interlingual respeakers well when they are respeaking repetitive genres, such as the news. Unlike respeakers, interpreters do not require extensive software skills, as simultaneous interpreters typically work in booths with a microphone and use a computer for preparation via glossaries and databases (Jones, 2002). Interlingual respeaking requires software skills to train Dragon with words, create custom commands and make live-error corrections.

### **5.2.2 Subtitling skills**

Pre-recorded interlingual subtitling, where the subtitles are prepared in advance of the audiovisual text airing, is the closest to interlingual respeaking, as they both aim to produce a similar product for a similar audience. The live nature of interlingual respeaking versus the pre-recorded nature of interlingual subtitling means that the skills are used in different ways and are dictated by time pressure where respeaking is concerned. Aside from any textual information on-screen, a respeaker will only ever hear the ST whereas a subtitler will hear it as often as they please and, depending on the subtitling task, may also have access to the English template file or the script, which facilitates the comprehension process. Therefore, a higher level of SL comprehension may be required for an interlingual respeaker than for a subtitler. A pre-recorded subtitler must be able to provide fast and accurate translations in order to keep up with the demand for work (Díaz-Cintas, 2015); however, live translation skills required for interlingual respeaking differ. In this context, the difference between translation and live translation calls for different forms of TL expression. Subtitling requires direct written expression as opposed to the verbal expression that is required for interlingual respeaking. Dictation skills needed for respeaking may pose a problem for participants with a clear-cut or predominantly subtitling background, as they may not be as accustomed to vocalising a translation in real time as the interpreters are (Dawson, 2018). Subtitlers may prove to have better technical skills than interpreters, as they must use subtitling software to spot subtitles and convey extralinguistic information such as using colours to identify different speakers and sound labels. They are also used to dealing with various media, file formats, and software. Subtitlers are familiar with using reformulation to edit in their own language and to applying text reduction strategies to overcome difficulties such as multiple turn-takings, overlapping dialogue, and the use of proper nouns (Romero-Fresco, 2011). Subtitlers usually have the benefit of being able to



contemplate how to reformulate the text and can experiment with condensing text to adhere to subtitling limitations, such as number of characters per line, timing, or shot changes. It is difficult to measure the number of characters per line while respeaking and it is challenging to cue subtitles to adhere to timing and not go over shot changes as there is a delay, usually of around 4-6 seconds. To keep up with a fast-paced ST respeakers need to reformulate on the spot and only have a few seconds to do so, whereas the technicalities of adjusting timings and reading speed take time to do well.

### **5.3 Main experiment: methodology**

#### **5.3.1 Design**

Before presenting the analysis, it is important to outline the experimental set-up of the short online interlingual respeaking course. As explained in Chapter 3, to provide longer and more thorough training, an integral part of the methodology of the large-scale experiment took a 'train, practice and test' approach. This ensured that participants from different backgrounds reached a similar respeaking standard before they were tested. The course was four weeks long and included three weekly sessions on dictation, intralingual respeaking (Spanish > Spanish), and interlingual respeaking (English > Spanish), followed by an interlingual respeaking test (English > Spanish). Each week, participants spent approximately two hours per week on the exercises. The course was delivered via the online platform Google Classroom, which allowed for the material to be uploaded each week and organised in one place. The forum function allowed for instruction messages to be posted and for discussion to take place between the course facilitator and the participants; the discussions centred around strategies and tips for respeaking and any technical issues that arose.

In the first week, participants answered a pre-experiment questionnaire about their profile, background, language competency, personal performance expectations, and views on the ideal skills and background for an interlingual respeaker. In this first week, participants watched several reference videos illustrating respeaking in action and dictated excerpts of a fiction story and a publication on AVT in order to train their voice profiles and to become familiarised with the SR software Dragon. Participants received individual and group feedback on their dictation.

The second week introduced intralingual respeaking and guidelines on how to successfully complete the task, which included tips on live-error correction and introduced multitasking step-by-step by

covering pace, pauses, intonation, punctuation, using visual clues, and dealing with omissions and condensation. The literature that was presented focussed on subtitling skills such as condensation (Díaz-Cintas, 2003, 205–208), reformulation (Díaz-Cintas and Remael, 2007, 150-161), punctuation (Romero-Fresco, 2011, 101–106), and rhythm in respeaking (Romero-Fresco 2011, 107-111). Participants were asked to complete two intralingual respeaking exercises, described in Section 5.3.2.

The third week introduced interlingual respeaking with guidelines on delay, décalage, monitoring the textual output, anticipation, dealing with omissions, and condensation with language transfer. There was also an introduction to the importance of interpreting skills, supported by literature on effort models in interpreting (Gile, 2009, 157–174) and split-attention (Romero-Fresco, 2011, 95–101). Participants completed two interlingual respeaking exercises.

Finally, in the fourth week, participants took two interlingual respeaking tests and answered a post-experiment questionnaire that collected information on their perceived performance, the course resources they found useful, and the skills and best-suited professional background for interlingual respeaking. Allowing participants to carry out some training in respeaking before completing a test ensured that the test would be a true reflection of the participants' ability. Kiraly (2000), an advocate of tests that reflect ability, knowledge, and skill, notes that it would not be appropriate to suggest that one test is a true measure of a learner's competence. It is for this reason that two videos were used as test material as opposed to only one video. Furthermore, results from all six videos will be analysed and reported on, rather than results from only two test videos; this will help to gain a broader sense of participants' ability of interlingual respeaking throughout the four-week course, as well as the skills required and the best-suited professional profile for the task. Figure 5.1 outlines the course with the material delivered and the tasks completed each week.

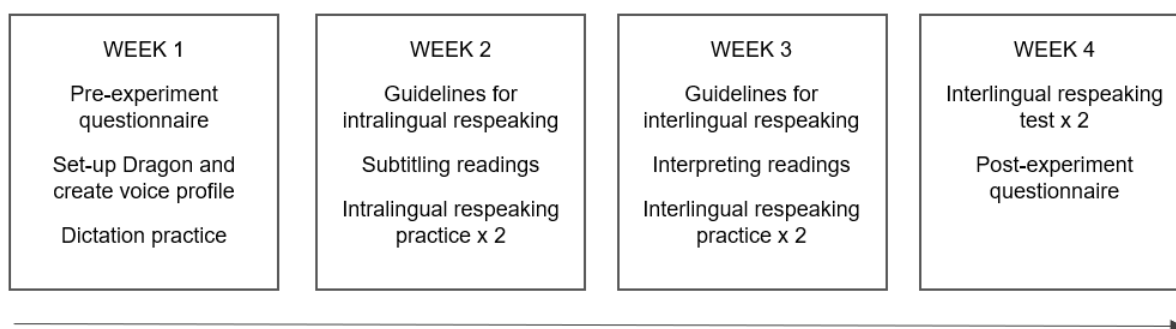


Figure 5.1: Outline of the short online interlingual respeaking course.

### 5.3.2 Material

Table 5.1 illustrates the genre, duration, and speech rate of the videos that were respoken by the participants. In Weeks 2 and 3 (Videos 1, 2, 3, and 4), participants had the option to watch each video before respoking it and were able to train Dragon with potentially difficult terms. In Week 4 (Videos 5 and 6), participants were instructed to respoke the two test videos without watching them beforehand. They used Dragon and Screencast, which recorded their performance and proved very useful when assessing recognition errors. The Screencast recordings are available in Appendix 11.

| Video | Intra/ interlingual   | Genre                | Duration | Speech rate |
|-------|-----------------------|----------------------|----------|-------------|
| 1     | Intralingual practice | Wildlife documentary | 00:05:48 | 76 wpm      |
| 2     | Intralingual practice | Online class         | 00:05:16 | 110 wpm     |
| 3     | Interlingual practice | Speech on beer       | 00:05:00 | 145 wpm     |
| 4     | Interlingual practice | Interview            | 00:05:00 | 125 wpm     |
| 5     | Interlingual test     | Speech on feminism   | 00:05:21 | 107 wpm     |
| 6     | Interlingual test     | Speech on gardening  | 00:05:00 | 159 wpm     |

Table 5.1: Details of video clips used during the experiment.

Each video chosen for the pilot experiment was just over two minutes long. However, to be able to apply the NTR model more effectively and obtain a better sense of the respoking performance, it was necessary in the main experiment to increase the duration of the video clips to around five minutes each. The SL of both Video 1 and Video 2 is Spanish so that participants could respoke the clips intralingually in the second week of the course. Video 1 is a sea-life documentary that was originally broadcast on TVE; it has a low speech rate and long pauses to allow participants to catch up with the text if needed. Video 2 is an online exam preparation class from the DELE YouTube channel on how to write a formal letter; it has a higher speech rate than Video 1 but contains a substantial number of repetitions and filler words. The SL of Videos 3, 4, 5, and 6 is English so that participants could interlingually respoke the videos from English into Spanish. Video 3 was retrieved from the EU interpreting speech repository and could be described as a talking head giving a speech about beer with no specialised terminology. Video 4 is from the official *Médicos sin Fronteras* YouTube channel and is an interview with only one speaker, as the questions appear written on screen; similarly, it could

be described as a talking head video, but it also includes other on-screen visuals and some specialised medical terminology. Video 5 is a speech delivered by Emma Watson on feminism. It does not contain any technical vocabulary and has a low speech rate. Video 6 was retrieved from the EU interpreting speech repository. It is a talking head delivering a speech about the mental health benefits of gardening and has a higher speech rate but contains a high volume of repetitions. All videos have only one speaker so as to reduce the complexity of the task and allow participants to solely focus on language transfer with one voice in the ST.

### **5.3.3 Participants**

The interpreter group is made up of 27 participants (interpreting students), of which 13 have a clear-cut interpreting background (meaning they only had interpreting experience), and 14 have a background of interpreting with some subtitling experience. The subtitler group is made up of 17 participants (subtitling students), of which 10 participants have a clear-cut subtitling background, and seven participants are subtitlers with some interpreting experience. Detailed information on each participant, including their languages spoken, background, and individual performance are available in Appendix 6.

#### **5.3.3.1 The interpreters**

Of the interpreter group, five participants were male, and 22 were female; their average age was 24 years, the youngest being 21 years old and the oldest being 40 years old. All interpreters were educated at a degree level; of the clear-cut interpreters, 11 held a BA degree in Translation and Interpreting and were working towards obtaining a master's degree in Multimedia Translation at the University of Vigo. The first course ran in February 2018 and, as they were in the first semester of their master's degree, the participants had only studied interpreting at postgraduate level at the time of taking the respeaking course; this means that they had a clear-cut interpreting background. Of the remaining two interpreters, one student held a BA degree in Pharmacy and a master's degree in Interpreting and another held a BA degree in Consecutive and Simultaneous Interpreting and a master's degree in Conference Interpreting. The average length of interpreting training for the clear-cut interpreters was one year and five months; this training was acquired from HE modules or courses. The clear-cut interpreters will be referred to as good or poor performers to highlight an interesting difference between participants: half

of the clear-cut interpreters' average accuracy rates were over 98%, and the poor performers achieved accuracy rates below 98%. All 14 interpreters with some subtitling experience had a BA in Translation and Interpreting. Eight were working towards their master's degree in Multimedia Translation at the University of Vigo, three were working towards a master's degree in Audiovisual Translation or Translation and Interpreting at other HE institutions, and the remaining three were not pursuing a master's degree. The average length of interpreting training for the interpreters with some subtitling experience is one year and three months, and all participants received training from HE courses or modules. The average length of subtitling experience for this group was four months; this training was acquired from a HE course or module for 12 participants while two participants received training from a course in the industry.

### **5.3.3.2 The subtitlers**

Of the subtitler group overall, 12 are female and five are male; their average age was 26, with the youngest being 22 years old and the oldest being 40 years old. All subtitlers were educated at a degree level; of the clear-cut subtitlers, six were completing a master's degree in Multimedia Translation at the University of Vigo, and four had already achieved or were working towards a master's degree in Audiovisual Translation at other HEIs. The average length of subtitling training received in HE for this group was 3.4 months. For the subtitlers with some interpreting experience, all seven participants had completed a BA degree in Translation and Interpreting. Two participants were completing a master's degree in Multimedia Translation, and five participants were completing a master's degree in Audiovisual Translation. The average length of subtitling training for this subgroup was one year and three months; for most participants, this training was acquired from a HE course or module, but one participant had received further training from a course in the industry. The average length of interpreting training was seven months; all of this training was acquired from a HE course or module.

It should be noted that the gender imbalance of the participants in the interpreter and subtitler groups maybe representative of the gender proportion in the translation industry. Although exact percentages could not be obtained, the increase in professionalisation of translation in the second half of the 20<sup>th</sup> century resulted in more women entering the profession and, nowadays, female translators substantially outnumber their male counterparts (Korning Zethsen and Askehave, 2013).

#### 5.3.4 Quality assessment

At a first glance, a focus on errors may appear to be a negative approach; however, counting errors does not mean that this research only observes participants' and trainees' weaknesses, as low numbers of errors also indicate where participants' strengths are. Quality assessment can provide an idea of the quality in terms of accuracy and of what needs to be improved and how (Romero-Fresco & Martínez, 2015). For instance, in interlingual respeaking, quality is measured through an assessment of translation and recognition errors and effective editions by application of the NTR model. The numbers of errors can be used to measure strengths and weaknesses, as fewer errors may identify strength in a particular area such as not omitting text (by having fewer cont-omiss errors), or good grammar (by having fewer form-corr errors). More errors may identify weakness in a particular area.

For the main experiment, a total of 264 texts were analysed, amounting to approximately 135,000 words, 7,500 subtitles, which is an average figure of the number of times participants paused and released text on screen, and 140 hours of respeaking practice. The 88 intralingual texts (two for each of the 44 participants) were assessed with the NER model (Romero-Fresco and Martínez, 2015), and the 176 interlingual texts (four for each of the 44 participants) were assessed with the NTR model (Romero-Fresco and Pöschhacker, 2017). A critical assessment, a justification for their use, and an explanation of these models are included in Section 3.4.4.

The researcher of this project carried out the first marking for all respoken texts. A team of second markers, made up of AVT scholars from the University of Vigo, carried out the second marking on a sample of the 88 intralingual respoken texts from Videos 1 and 2 and the 88 interlingual respoken texts from Videos 3 and 4. The amendments from the sample were applied to all texts by the first marker. All 88 interlingual tests from Videos 5 and 6 were first and second marked. The inter-rater disagreements across the first and second markings for intra- and interlingual respoken texts were 0.16% and 0.19%, respectively. These figures were calculated by averaging the differences between the first and second markings of the 264 respoken texts produced by the 44 participants in this experiment. The inter-rater disagreements obtained in the Ofcom study (Romero-Fresco, 2016) and the LiRICS project (Romero-Fresco et al., 2019) were 0.09% and 0.24%, respectively, thus making an average of 0.16%. Both studies were, however, about intralingual live subtitling. In this experiment, the translational element was expected to increase the inter-rater disagreement, given the subjectivity involved in assessing the

quality of language transfer. Still, the overall inter-rater disagreement obtained in this experiment (0.19%), which is the equivalent of 0.5/10, may be regarded as very satisfactory.

#### **5.4 Quantitative results**

The average accuracy rates for the intra- and interlingual exercises were 98.24% (5.5/10) and 97.36% (3.5/10), respectively. The following section will take a closer look at the intra- and interlingual performance of each group of participants: the interpreters and the subtitlers. For each section, subsections are presented of edition and recognition errors (for intralingual respeaking) or translation and recognition errors (for interlingual respeaking), and a critical analysis is given regarding what such errors mean about the performance of the interpreters and subtitlers and what the results indicate for interlingual respeaking training.

For the intralingual results, an analysis of the intergroup differences was carried out in mixed ANOVA models with repeated measurements in a 4 (group) x 2 (video) scheme. For the interlingual results, the analysis was conducted in a 4 (group) x 4 (video) scheme. All calculations were performed using the SPSS statistical package version 23.0. The statistical analysis is presented in Appendix 7.

##### **5.4.1 Intralingual results**

Videos 1 and 2 were used for participants to intralingually respeak from Spanish into Spanish. Figure 5.2 shows the interpreters' intralingual accuracy rates. Participants I1 to I13 are the 13 clear-cut interpreters and participants I/S1 to I/S14 are the interpreters with some subtitling experience. The black line highlights the 98% threshold for acceptable intralingual live subtitles. The graph shows that 14 interpreters reached 98% in both videos. All good-performing interpreters from the clear-cut group (I1–I6) reached 98% along with a further eight interpreters across both groups. Another eight interpreters reached 98% in one video, which was mainly Video 2.

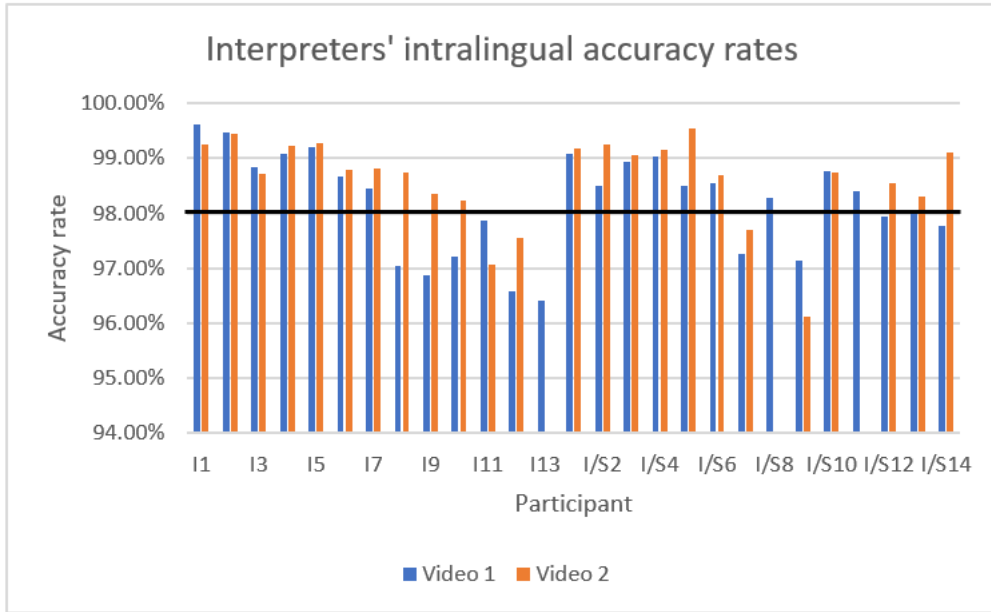


Figure 5.2: Interpreters' intralingual accuracy rates.

Figure 5.3 shows the subtitlers' intralingual performance. Participants S1 to S10 are those with a clear-cut subtitler background, and participants S/I1 to S/I7 are subtitlers with some interpreting experience. Five clear-cut subtitlers and four subtitlers with interpreting experience reached the 98% mark in both videos, and another three participants managed to reach 98% in Video 2. Six participants did not reach 98% in either video; of these participants, four belong to the clear-cut subtitler group and two to the subtitler with interpreting group.

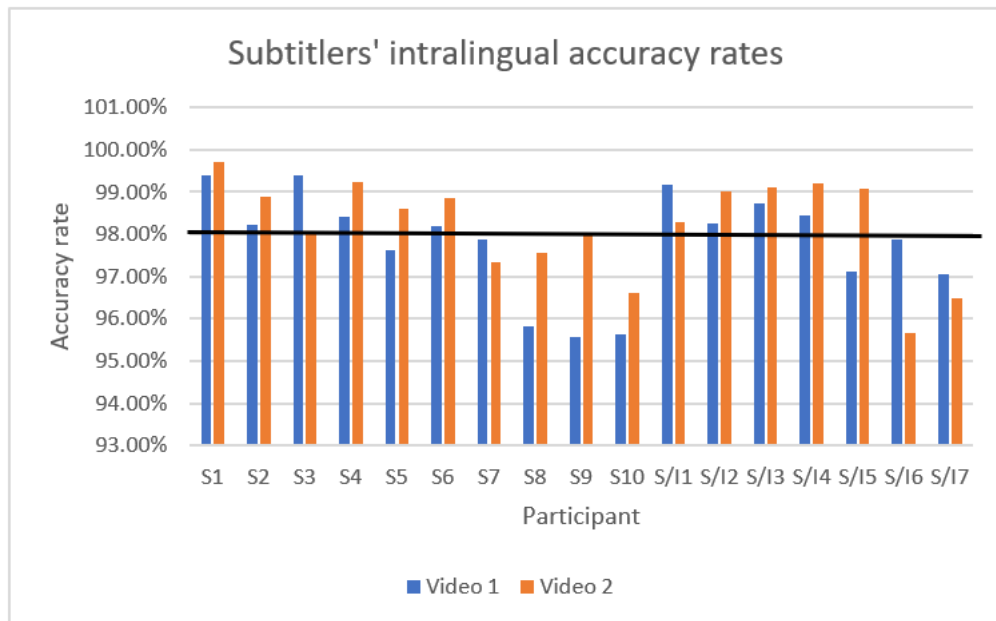


Figure 5.3: Subtitlers' intralingual accuracy rates.



Overall, participants obtained a significantly lower accuracy rate in Video 1 ( $M = 98.08$ ,  $SD = 1.04$ ) (98.05%, 5/10) than in Video 2 ( $M = 98.45$ ,  $SD = 0.97$ ) (98.45%, 6/10). There were no significant differences in the accuracy rates between subgroups [ $F(3, 37) = 0.78$ ,  $p = 0.514$ ,  $\eta^2 = 0.00$ ]. Despite the lack of statistical differences between groups, the results show that, in terms of the accuracy rate, the interpreters (98.37%) achieved an average accuracy rate +0.32% higher than the subtitlers (98.05%). These results are good considering that they come from the first two respeaking exercises of the course. Appendix 7, Table 1 shows descriptive statistics for each group's performance.

#### 5.4.1.1 Edition errors

The total average for edition errors shows the interpreters performed better than the subtitlers in intralingual respeaking, as they made 0.9 fewer minor and 1.2 fewer standard errors but the same number of serious errors. Although the results show the interpreters performed slightly better, the differences are small and do not necessarily mean that the interpreters will always perform better.

|                        | Minor<br>V1 | Minor<br>V2 | Standard<br>V1 | Standard<br>V2 | Serious<br>V1 | Serious<br>V2 | Total<br>average |
|------------------------|-------------|-------------|----------------|----------------|---------------|---------------|------------------|
| Clear-cut interpreters | 6.6         | 7.6         | 0.9            | 1.5            | 1.5           | 0.2           | 9.2              |
| Interpreters w/sub     | 5.5         | 2.8         | 0.9            | 1.8            | 0.6           | 0             | 5.8              |
| Interpreters overall   | 6           | 5.2         | 0.9            | 1.7            | 1             | 0.1           | 7.5              |
| Clear-cut subtitlers   | 6.3         | 3.8         | 1.5            | 1.8            | 1.4           | 0.2           | 7.5              |
| Subtitlers w/int       | 9.9         | 4.3         | 1.4            | 2.7            | 0.3           | 0.1           | 9.4              |
| Subtitlers overall     | 8.1         | 4           | 1.5            | 2.3            | 0.9           | 0.2           | 8.5              |
| Average                | 7           | 4.6         | 1.2            | 2              | 1             | 0.1           | 15.9             |

Table 5.2: Edition errors for Videos 1 and 2.

On average, participants reached the 98% threshold in both Videos 1 and 2. The poor performance of edition errors in Video 1 can be explained by various factors: Video 1 was the first respeaking exercise of the experiment, so participants may have needed to get used to respeaking before they were able to perform better. Also, the terminology used in Video 1 was more complex than that of Video 2, and Video 1 had a slower speech rate, which has been shown to cause frustration when respeaking, which could be due to participants having to remember the beginning of a sentence while they wait to hear the end

(Szarkowska et al., 2016). Furthermore, Video 2 had more spontaneous speech and repetitions, which enabled participants to omit information, such as filler words and repetitions, without being penalised because they do not cause loss of information, consequently leading to fewer edition errors.

The group with the highest number of edition errors is the subtitlers with interpreting experience, with a total average of 9.4, followed by the clear-cut subtitlers with a total average of 7.5 and the clear-cut interpreters with a total average of 9.2. Finally, the interpreters with subtitling with the least amount of edition errors with a 5.8 total average. The difference between the best and worst performing subgroups is large and could be put down to various factors that cannot be pinpointed at this stage as the interlingual results have not yet been presented. Factors could include the best performers experiencing fewer technical issues, having better recognition skills, or having a higher ability to multitask. As the researcher was not physically present to monitor the experiment, another factor could be that some participants watched the videos more than others.

#### **5.4.1.2 Edition error severity**

The most common edition errors made in the intralingual exercises were minor errors, with an average of 5.8 minor edition errors made per participant per video; these errors were each penalised at  $-0.25$ . On average, 1.6 standard (penalised at  $-0.5$ ) and 0.6 serious errors (penalised at  $-1$ ) were made. Participants made significantly more minor edition errors in Video 1 ( $M = 6.61$ ,  $SD = 6.04$ ) than in Video 2 ( $M = 4.68$ ,  $SD = 3.73$ ), fewer standard edition errors in Video 1 ( $M = 1.10$ ,  $SD = 1.45$ ) than in Video 2 ( $M = 1.85$ ,  $SD = 2.25$ ), and more serious edition errors in Video 1 ( $M = 1.00$ ,  $SD = 1.32$ ) than in Video 2 ( $M = 0.12$ ,  $SD = 0.33$ ). No differences between the subgroups were observed for minor [ $F(3, 37) = 1.96$ ,  $p = 0.137$ ,  $\eta^2 = 0.14$ ], standard [ $F(3, 37) = 0.48$ ,  $p = 0.696$ ,  $\eta^2 = 0.04$ ], or serious [ $F(3, 37) = 1.95$ ,  $p = 0.139$ ,  $\eta^2 = 0.14$  errors]. Appendix 7, Tables 2, 3, and 4 present the descriptive statistical results for minor, standard, and serious errors, respectively.

#### **5.4.1.3 Recognition errors**

The results in Table 5.3 point to the potential importance of interpreting experience for dictation. The clear-cut interpreting group made the least amount of recognition errors (10.9), and participants with some interpreting experience made significantly fewer errors than the clear-cut subtitling group (16.7).

The difference between subgroups of participants has shown to be statistically insignificant [ $F[3, 37] = 1.32, p = 0.284, \eta^2 = 0.10$ ].

|                        | Minor<br>V1 | Minor<br>V2 | Standard<br>V1 | Standard<br>V2 | Serious<br>V1 | Serious<br>V2 | Total<br>average |
|------------------------|-------------|-------------|----------------|----------------|---------------|---------------|------------------|
| Clear-cut interpreters | 7.6         | 8           | 2.6            | 2.6            | 0.7           | 0.3           | 10.9             |
| Interpreters w/sub     | 11.4        | 2.8         | 2.6            | 1.8            | 0.8           | 0             | 9.7              |
| Interpreters overall   | 9.5         | 5.4         | 2.6            | 2.2            | 0.8           | 0.2           | 10.3             |
| Clear-cut subtitlers   | 13.9        | 7.4         | 3.9            | 7.6            | 0.5           | 0.1           | 16.7             |
| Subtitlers w/int       | 9.9         | 4.3         | 1.4            | 2.7            | 0.3           | 0.1           | 9.4              |
| Subtitlers overall     | 11.9        | 5.9         | 2.7            | 5.2            | 0.4           | 0.1           | 13               |
| Average                | 10.7        | 5.6         | 2.6            | 3.7            | 0.6           | 0.1           | 23.3             |

Table 5.3: Recognition errors for Videos 1 and 2.

Video 1 has a slower speech rate, which normally allows for slow and clear dictation; however, since it was the first respeaking exercise, participants may not have been confident with their dictation after only one week of practice. Vocalising a live translation is not the same in respeaking as it is in interpreting. The receiver of the spoken translation in interpreting is a human audience, and the immediate receiver of the spoken translation in respeaking is the SR software. Nonetheless, it appears that the interpreter group managed to use their skills in this area and to apply them to their dictation. Those with more subtitling experience may require more extensive dictation practice to vocalise a live translation.

#### **5.4.1.4 Recognition error severity**

The most common recognition errors made in the intralingual exercises are minor errors (8.2), followed by standard errors (3.2), and then by serious errors (0.4). The difference in recognition errors between Videos 1 and 2 [ $F[1, 37] = 8.49, p = 0.006, \eta^2 = 0.16$ ] shows that participants made more minor recognition errors in Video 1 ( $M = 10.73, SD = 6.06$ ) than in Video 2 ( $M = 7.88, SD = 4.37$ ) as well as more standard errors in Video 1 ( $M = 2.83, SD = 3.14$ ) than in Video 2 ( $M = 4.27, SD = 5.98$ ) and more serious errors in Video 1 ( $M = 0.76, SD = 0.80$ ) than in Video 2 ( $M = 0.24, SD = 0.49$ ).

For minor recognition errors, there were no statistically significant effects between participant groups [ $F(3, 37) = 1.17, p = 0.333, \eta^2 = 0.09$ ]. However, there was a statistically significant interaction effect at

the  $p < 0.10$  trend level [ $F(3, 37) = 2.57, p = 0.069, \eta^2 = 0.15$ ]. This was caused by the relatively high number of minor recognition errors for the two subgroups in the first video: the interpreters with subtitling and the clear-cut subtitlers, who made significantly more minor errors than the clear-cut interpreters and subtitlers with interpreting in Videos 1 and 2. Appendix 7, Tables 5, 6, and 7 present descriptive statistical results for minor, standard, and serious errors, respectively.

#### **5.4.1.5 Correct editions**

Correct editions (CEs) are variations between the ST and TT that do not cause loss of information. An example of a CE would be the omission of a filler word or repetition, or the use of a synonym. CEs can also be improvements made upon the ST, for example, if incorrect information is given in the ST and the respeaker corrects it. Examples of CEs are highlighted in yellow in Table 4.3. For Video 1 ( $M = 2.54, SD = 2.38$ ) participants made fewer correct editions [ $F(1, 37) = 401.47, p < 0.001, \eta^2 = 0.91$ ] than in Video 2 ( $M = 34.15, SD = 10.24$ ). This could be due to two factors: the difference in speed and the difference in content. The higher speed of Video 2 introduces the need to condense more text in order to keep up with the source text. The difference in content could also be significant, as Video 1 was delivered in a structured way and was carefully pre-prepared, while Video 2 was delivered spontaneously and contained filler words and repetitions. However, no statistically significant differences between the subgroups were found [ $F(3, 37) = 1.17, p = 0.333, \eta^2 = 0.09$ ].

The raw data in Tables 5.4 and 5.5 show that those with substantial interpreting experience made the least number of correct editions, with an average of 1.8 in Video 1 and 33.6 in Video 2, suggesting that they were able to keep up with the text and, therefore, omit less text. The subtitlers made on average 4.4 more correct editions in Video 1 and 8 more correct editions in Video 2 than the interpreters did. The subtitlers' higher number of correct editions suggests that they were not able to respeak as much text as the interpreters, which could be put down to their lack of experience in live translation, multitasking, short-term memory, and quick thinking, which are all essential skills for interlingual respeaking. Appendix 7, Table 8 presents the descriptive statistics for the correct editions.

|                        | Correct editions |
|------------------------|------------------|
| Clear-cut interpreters | 1.8              |
| Interpreters w/sub     | 1.8              |
| Clear-cut subtitles    | 4.1              |
| Subtitles w/int        | 3.9              |
| Average                | 2.9              |

Table 5.4: Correct editions for Video 1.

|                        | Correct editions |
|------------------------|------------------|
| Clear-cut interpreters | 33.6             |
| Interpreters w/sub     | 31.6             |
| Clear-cut subtitles    | 35.3             |
| Subtitles w/int        | 37.9             |
| Average                | 34.6             |

Table 5.5: Correct editions for Video 2.

Although correct editions are not penalised in the same way as edition and recognition errors, they could still be featured in training and introduced when edition errors are discussed. Allowing trainees to carry out quality assessment for intralingual respeaking would highlight the difference between edition and correct edition errors and may even give trainees ideas on how to effectively reformulate and condense text.

#### **5.4.1.6 Analysis of overall intralingual performance**

The interpreting groups achieved the highest accuracy rate for intralingual respeaking (Spanish into Spanish), with an average of 98.28% (5.5/10) for the clear-cut interpreters compared to 97.98% (4.5/10) for the clear-cut subtitles, and 98.46% (6/10) for the interpreters with subtitling training compared to 98.11% (5/10) for the subtitles with interpreting training. In the clear-cut interpreting group, the good performers achieved 99.14% (8/10), and the poor performers achieved 97.55% (4/10). As described in the introduction of this thesis, intralingual respeaking was adopted by AVT, instead of by the interpreting community, and was performed mostly by subtitles; however, these results show that interpreters are ideally placed to become good intralingual respeakers. These results could also be considered as representative of training where some students perform well and others do not. Interpreters' interlingual multitasking skills must be applied here intralingually, and these skills must include oral punctuation,

SDH features (such as using colours to identify different speakers and labels to describe sounds), and additional visual multitasking, such as monitoring the visual output on-screen and correcting errors. It appears that having only subtitling experience may not be enough to perform well with such little training. Most professional intralingual respeakers are not interpreters, and these results show that good-performing interpreters are immediately well positioned to work as intralingual respeakers. In contrast, subtitlers may require further and longer training. As interpreters are already accustomed to listening in one language and speaking in another, it brings into question whether trained simultaneous interpreters could carry out dictation practice and start practicing interlingual respeaking without practicing intralingual respeaking.

|                           | Video 1 | Video 2 | Average |
|---------------------------|---------|---------|---------|
| Clear-cut interpreters    | 98.10%  | 98.63%  | 98.28%  |
| Interpreters w/subtitling | 98.30%  | 98.62%  | 98.46%  |
| Clear-cut subtitlers      | 97.62%  | 98.29%  | 97.98%  |
| Subtitlers w/interpreting | 98.10%  | 98.12%  | 98.11%  |

Table 5.6: Intralingual accuracy rates of each group.

Interestingly, the subtitlers' highest accuracy rate overall is the interpreters' lowest accuracy rate of 98.20%. It appears that the interpreters were able to deal with the pressures of intralingual respeaking and perhaps had a larger and more developed tool kit to deal with the complexities of the task, whereas the subtitlers may require more training in skills such as multitasking, vocalising live translations, and quick thinking, among others.

#### 5.4.2 Interlingual results

Videos 3, 4, 5, and 6 were used for participants to interlingually respeak from English into Spanish. Figure 5.4 shows the interpreters' performance of each video. Three clear-cut interpreters reached the 98% threshold in all four exercises. No participants from the interpreters with subtitling group managed to reach 98% in all four exercises. A total of 11 interpreters reached 98% in Video 3, which is impressive considering that it was their first interlingual respeaking exercise. Only seven interpreters performed well in Video 4, and many interpreters' performance deteriorated with this video. A total of 12 out of 27 interpreters reached 98% in Video 5 and Video 6 (the interlingual respeaking test).

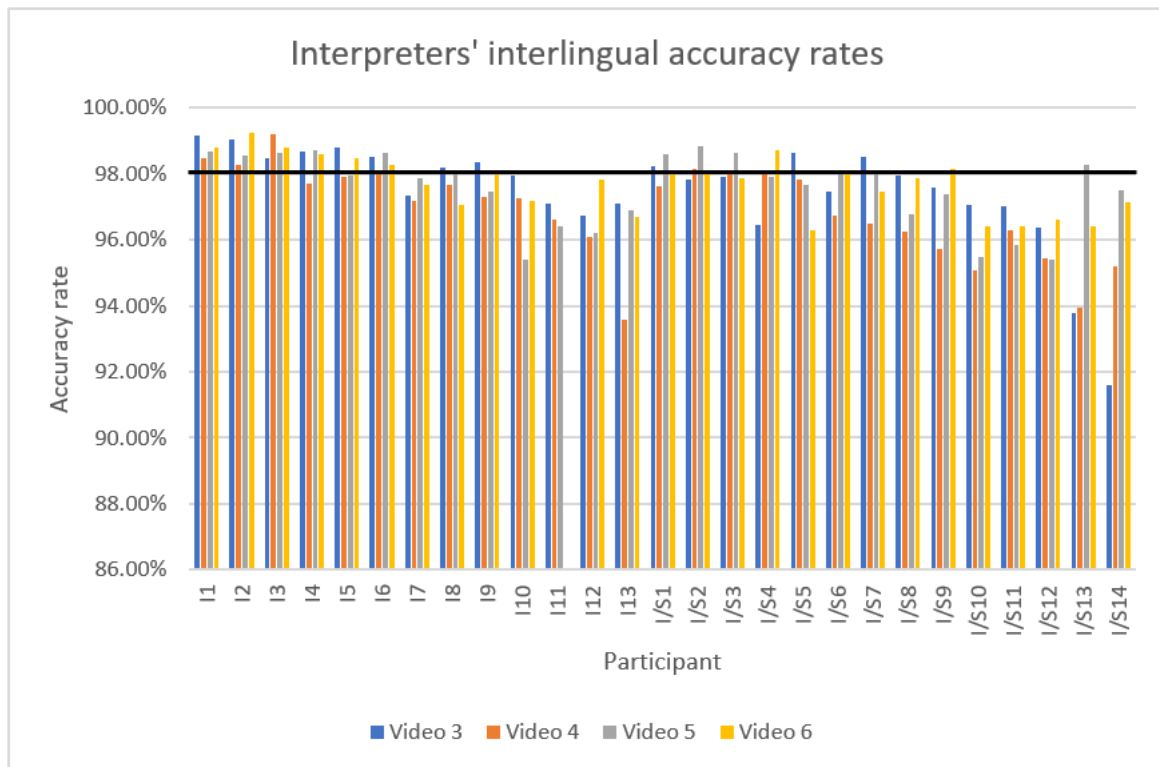


Figure 5.4: Interpreters' interlingual accuracy rates.

Figure 5.5 shows that only one clear-cut subtitler reached 98% in all four videos and that two clear-cut subtitlers reached 98% in three of the videos. Participants S4 to S10 did not perform very well at all and seemed to struggle in all videos. Of the subtitlers with interpreting experience, participants seem to have performed better in Videos 3 and 6, but there is a visible dip in the performance of Videos 4 and 5. Only four out of 44 participants managed to consistently reach the 98% threshold for acceptable live subtitles. Again, this could be representative of students tending to obtain different results in training, however, four participants is a relatively low number and could highlight the sheer complexity of the task.

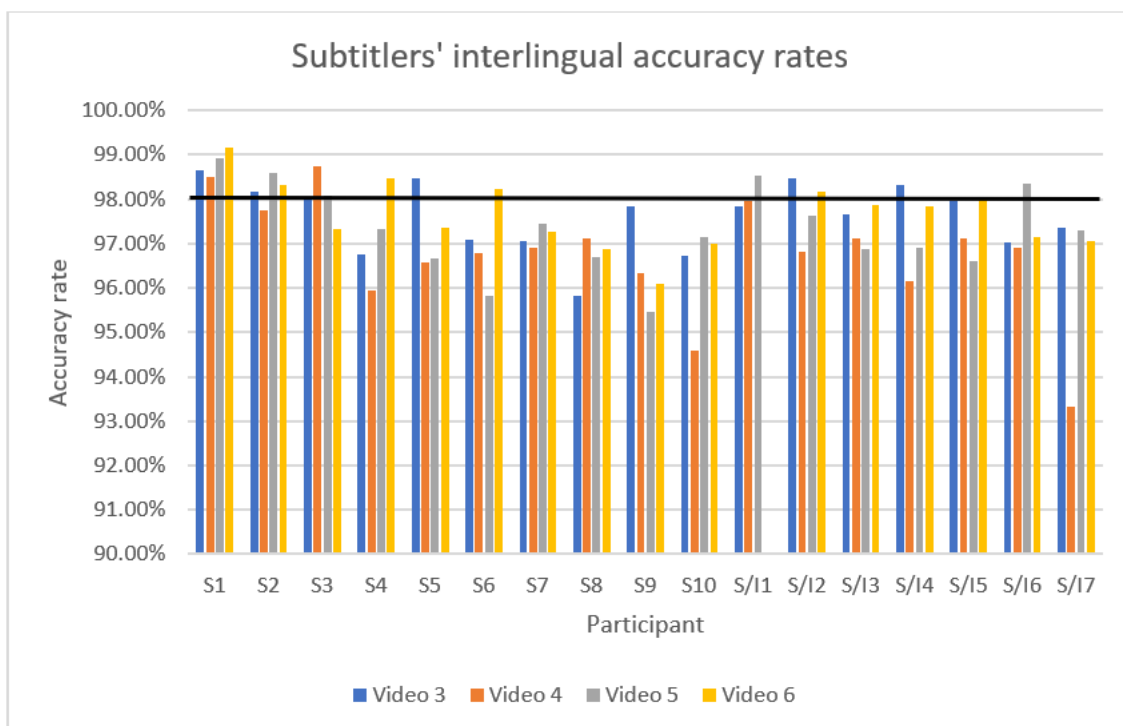


Figure 5.5: Subtitlers' interlingual accuracy rates.

There seems to be a clear difference in performance by the interpreters and the subtitlers. However, the differences between the accuracy rates and the subgroups were not of statistical significance [ $F[3, 38] = 1.86, p = 0.152, \eta^2 = 0.14$ ]. In contrast, there does appear to be statistical differences between the performance in every video [ $F(2.91, 110.57) = 8.61, p < 0.001, \eta^2 = 0.17$ ]. Participants obtained a lower accuracy rate in Video 4 ( $M = 96.81, SD = 1.37$ ) than in Video 3 ( $M = 97.53, SD = 1.37; p = 0.002$ ), Video 5 ( $M = 96.97, SD = 1.05, p = 0.013$ ), and Video 6 ( $M = 97.67, SD = 0.81, p < 0.001$ ). Participants may have performed lower overall in Video 4 because the video contained specialised terminology and had dense content. These factors resulted in participants making more omissions and mistranslations, thus achieving lower accuracy rates. Appendix 7, Table 9 shows descriptive statistics for each respoken video and for each group's results.



#### 5.4.2.1 Translation errors<sup>12</sup>

Omitted text can either be identified as a cont-omiss error or an effective edition. Cont-omiss errors cause loss of information, whereas effective editions do not. Cont-omiss were the most common errors made, accounting for 53% of the overall translation errors, followed by cont-subs, that is, mistranslations, which accounted for 36% of the overall errors. The least common translation errors were those related to form and style, which shows that participants' strengths lie in producing a grammatically sound respoken text and maintaining an appropriate register. Participants made on average 13.4 translation errors in Video 3, 22.8 in Video 4, 19 in Video 5, and 16.3 in Video 6. In terms of individual translation errors, the clear-cut interpreters made the least amount of cont-omiss, cont-subs, and form-style errors. The subtitlers made the least amount of cont-add errors, which suggests that they either did not have as much time as the other groups and could not add content or that they respoke less text in general.

|                           | Cont-omiss | Cont-subs | Cont-add | Form-corr | Form-style | Total |
|---------------------------|------------|-----------|----------|-----------|------------|-------|
| Clear-cut interpreters    | 8.7        | 5.3       | 0.8      | 1.6       | 0.3        | 16.7  |
| Interpreters w/subtitling | 10.3       | 7         | 0.8      | 1.8       | 0.2        | 20.1  |
| Interpreters overall      | 9.5        | 6.2       | 0.8      | 1.7       | 0.3        | 18.5  |
| Clear-cut subtitlers      | 9.8        | 5.8       | 0.5      | 1.7       | 0.2        | 18    |
| Subtitlers w/interpreting | 9.5        | 5.1       | 0.2      | 1.8       | 0.1        | 16.7  |
| Subtitlers overall        | 9.7        | 5.5       | 0.4      | 1.8       | 0.3        | 17.7  |

Table 5.7: Average translation errors for interpreters and subtitlers.

The fact that these results are the same for both the interpreters and the subtitlers could indicate that the type of audiovisual text and the background of the respeaker may not be the cause of certain translation errors. Cont-omiss and cont-subs errors appear to be the most likely errors to make when respoking. It appears that the pressure of live translation impacts on omission and substitution errors, as text is omitted, and the translation produced is not always the most accurate.

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<sup>12</sup> Due to zero or close to zero variance, models for form-style CritT, form-corr CritT, cont-add CritT, cont-omiss CritT, and cont-subs CritT errors were not calculated.

|                           | Cont-omiss | Cont-subs | Cont-add | Form-corr | Form-style |
|---------------------------|------------|-----------|----------|-----------|------------|
| Clear-cut interpreters    | 7          | 5.3       | 0.7      | 0.6       | 0.2        |
| Interpreters w/subtitling | 8.4        | 5.6       | 0.5      | 0.8       | 0.1        |
| Clear-cut subtitlers      | 6.7        | 4.6       | 0.3      | 1.3       | 0          |
| Subtitlers w/interpreting | 6.3        | 3.6       | 0.2      | 1.4       | 0          |

Table 5.8: Translation errors for Video 3.

|                           | Cont-omiss | Cont-subs | Cont-add | Form-corr | Form-style |
|---------------------------|------------|-----------|----------|-----------|------------|
| Clear-cut interpreters    | 11.7       | 7.5       | 0.7      | 1         | 0          |
| Interpreters w/subtitling | 15         | 9.2       | 1.2      | 1         | 0          |
| Clear-cut subtitlers      | 15.1       | 5.7       | 0.5      | 0.1       | 0          |
| Subtitlers w/interpreting | 15         | 6.9       | 0.1      | 0.6       | 0          |

Table 5.9: Translation errors for Video 4.

|                           | Cont-omiss | Cont-subs | Cont-add | Form-corr | Form-style |
|---------------------------|------------|-----------|----------|-----------|------------|
| Clear-cut interpreters    | 7.2        | 5.1       | 1.2      | 3.6       | 0.6        |
| Interpreters w/subtitling | 6.3        | 7.6       | 0.8      | 4         | 0.6        |
| Clear-cut subtitlers      | 7.7        | 8.5       | 0.8      | 3.2       | 0.6        |
| Subtitlers w/interpreting | 8.2        | 5.6       | 0        | 4.1       | 0.3        |

Table 5.10: Translation errors for Video 5.

|                           | Cont-omiss | Cont-subs | Cont-add | Form-corr | Form-style |
|---------------------------|------------|-----------|----------|-----------|------------|
| Clear-cut interpreters    | 8.8        | 3.4       | 0.7      | 1.2       | 0.2        |
| Interpreters w/subtitling | 11.3       | 5.4       | 0.7      | 1.3       | 0.2        |
| Clear-cut subtitlers      | 9.6        | 4.5       | 0.3      | 2.1       | 0.2        |
| Subtitlers w/interpreting | 8.5        | 4.3       | 0.5      | 1.2       | 0.1        |

Table 5.11: Translation errors for Video 6.

Now that the overall translation errors for each group and video have been presented, the following subsections will present a statistical analysis of the quantity and severity of each subtype of translation error.

#### **5.4.2.1.1 Content omission (cont-omiss) errors**

More minor cont-omiss errors were made than major errors, which indicates that participants were able to maintain the main idea of a sentence, as they omitted dependent idea units (the who, what, where, when, why, and how pieces of information) as opposed to independent idea units (full sentences). The number of cont-omiss errors made between videos is significant [ $F [3, 114] = 17.65, p < 0.001, \eta^2 = 0.30$ ], as in Video 4 ( $M = 10.24, SD = 3.76$ ) participants made more minor cont-omiss errors than in Video 3 ( $M = 5.12, SD = 2.85; p < 0.001$ ), Video 5 ( $M = 5.67, SD = 4.70, p < 0.001$ ), and Video 6 ( $M = 8.24, SD = 4.10, p = 0.018$ ). Significantly more cont-omiss errors were made in Video 6 ( $p = 0.002$ ) than in Video 3 or Video 5 ( $p = 0.040$ ). The lowest number of cont-omiss errors were made in Video 3. This is surprising, as it was the first video that the participants respoke interlingually; however, it was also the video with the simplest content. There is no correlation between the speech rate and number of errors made, thereby suggesting that other factors may have contributed to the translation errors, such as the content and structure. There is a significance between major cont-omiss errors [ $F [2.63, 99.78] = 11.49, p < 0.001, \eta^2 = 0.22$ ], as more were made in Video 4 ( $M = 3.88, SD = 3.76$ ) than in Video 3 ( $M = 2.14, SD = 2.86, p = 0.001$ ), Video 5 ( $M = 1.40, SD = 1.96, p = 0.002$ ), and Video 6 ( $M = 1.55, SD = 1.81, p < 0.001$ ); it could have been the challenging content and terminology of Video 4 that led participants to omit more full sentences. There were no significant differences in the minor [ $F [3, 38] = 0.12, p = 0.948, \eta^2 = 0.01$ ] or major cont-omiss errors [ $F [3, 38] = 0.73, p = 0.539, \eta^2 = 0.05$ ] between the subgroups.

Although the omission of dependent idea units are penalised as errors, the fact that participants made more minor errors than major shows that their strengths lie in transferring the main ideas from one language into another.

#### **5.4.2.1.2 Content substitution (cont-subs) errors**

It was expected that the interpreters would incur fewer cont-subs errors, as they were thought to be more accustomed to producing accurate live translations than the subtitlers due to previous experience in this area. There was only one difference between the subgroups [ $F [3, 38] = 3.31, p = 0.030, \eta^2 = 0.21$ ], as the clear-cut interpreters ( $M = 0.98, SD = 1.33$ ) made fewer ( $p = 0.038$ ) major cont-subs errors than the interpreters with subtitling ( $M = 2.46, SD = 2.25$ ). There was a significant difference in minor

cont-subs errors [ $F [2.63, 99.80] = 6.26, p = 0.001, \eta^2 = 0.12$ ]; in Video 4 ( $M = 4.05, SD = 2.07$ ), participants made more cont-subs errors than in Video 3 ( $M = 2.60, SD = 2.44, p = 0.006$ ) and in Video 6 ( $M = 2.00, SD = 1.34, p < 0.001$ ). Also, participants made more major cont-subs errors in Video 4 ( $M = 2.64, SD = 2.34$ ) than in Video 3 ( $M = 1.60, SD = 1.70, p = 0.068$ ), Video 5 ( $M = 1.33, SD = 2.19, p = 0.020$ ), and Video 6 ( $M = 1.33, SD = 1.56, p = 0.001$ ).

These results show that participants were able to accurately respeak videos with less dense content. The results are good, considering participants only received one week of interlingual respeaking practice before taking the test. As mistranslations appear to be more common in videos with dense content, this could motivate future trainees to, where possible, research the topic at hand and create bilingual word lists to become familiar with the topic and enhance their performance.

#### **5.4.2.1.3 Content addition (cont-add) errors**

The interpreters showed signs of being able to produce respoken texts faster than the subtitlers and with fewer major cont-omiss errors. The interpreters incurred more cont-add errors and may have had more time to add content, whereas the subtitlers could not always keep up with the content that needed to be respoken and they made fewer additions. However, no significant results were obtained for the minor [ $F [3, 114] = 0.15, p = 0.930, \eta^2 = 0.00$ ] or major [ $F [3, 114] = 0.43, p = 0.732, \eta^2 = 0.01$ ] cont-add errors.

#### **5.4.2.1.4 Form correctness (form-corr) errors**

There is a difference in minor form-correctness (form-corr) errors: in Video 5 ( $M = 3.67, SD = 2.08$ ), participants made more errors than in Video 3 ( $M = 0.98, SD = 1.07, p < 0.001$ ), Video 4 ( $M = 0.71, SD = 1.42, p < 0.001$ ), and Video 6 ( $M = 1.43, SD = 1.56, p < 0.001$ ). The presence of minor form-corr errors suggests that both groups made errors that could be recognised as mistakes as opposed to errors that confuse an audience or introduce a false meaning. Although not statistically significant, the subtitlers made on average 0.2 more form-corr errors than the interpreters, suggesting that they may require more practice to use correct grammar, punctuation, and sentence structure while respeaking.

As noted in Section 5.4.2.1, low numbers of form-corr errors show that participants were generally able to produce respoken texts with grammatical accuracy. These result show that certain aspects of live translation could be easier to manage than others (such as mistranslations) and, if used in training, could show trainees they may not need to focus on grammar because it is a product of having a good command of the target language.

#### 5.4.2.1.5 Form style (form-style) errors

Form-style errors do not appear to cause difficulty for respeakers, nor do they contribute to any substantial changes in the accuracy rate. Minor form-style errors turned out to be statistically significant [ $F(1.80, 68.39) = 4.87, p = 0.013, \eta^2 = 0.1$ ] but only for Video 4 ( $M = 0.00, SD = 0.00$ ), which had a significantly lower number of minor form-style errors ( $p = 0.017$ ) than Video 5 ( $M = 0.48, SD = 0.80$ ). There were no differences of form-style errors between the subgroups [ $F(3, 38) = 0.85, p = 0.474, \eta^2 = 0.06$ ].

Similar, to what has been noted for form-corr errors, such uncommon occurrences of form-style errors show that participants' strengths also lie in maintaining the style of the text and an appropriate register.

#### 5.4.2.2 Translation error severity

No significant differences were found between the subgroups for minor [ $F(3, 38) = 0.23, p = 0.878, \eta^2 = 0.02$ ] or critical errors [ $F(3, 38) = 1.28, p = 0.296, \eta^2 = 0.09$ ]. However, clear-cut interpreters ( $M = 2.60, SD = 2.92$ ) made fewer major translation errors than the interpreters with subtitling ( $M = 5.32, SD = 4.41$ ). No other differences between the subgroups were found. Appendix 7, Tables 10, 11, and 12 present descriptive statistics for minor, major, and critical translation errors, respectively.

|          | Cont-<br>omiss | Cont-<br>subs | Cont-<br>add | Form-<br>corr | Form-<br>style | Total |
|----------|----------------|---------------|--------------|---------------|----------------|-------|
| Minor    | 7.3            | 2.9           | 0.7          | 1.6           | 0.3            | 12.8  |
| Major    | 2.2            | 1.8           | 0.06         | 0.03          | 0.007          | 4.1   |
| Critical | 0.01           | 1.5           | 0.08         | 0.001         | 0              | 1.6   |

Table 5.12: Translation error severity of participants with more interpreting experience.

|          | Cont-<br>omiss | Cont-<br>subs | Cont-<br>add | Form-<br>corr | Form-<br>style | Total |
|----------|----------------|---------------|--------------|---------------|----------------|-------|
| Minor    | 7.3            | 2.9           | 0.3          | 1.8           | 0.2            | 12.5  |
| Major    | 2.4            | 1.6           | 0.06         | 0             | 0              | 4     |
| Critical | 0.01           | 1             | 0            | 0             | 0              | 1     |

Table 5.13: Translation error severity of participants with more subtitling experience.

The interpreting group was expected to perform better than the subtitling group since they had already developed skills relevant for respeaking, such as live translation. As a whole, the interpreters only performed better than the subtitlers with a difference of 0.2 major cont-omiss errors and 0.2 minor form-corr errors. In the subgroups of clear-cut interpreters and clear-cut subtitlers, there were differences in the accuracy rates between the clear-cut good- and poor-performing interpreters. There were stark differences in cont-omiss and cont-subs errors, as the good performers made on average 2.5 fewer minor cont-omiss, 1.8 fewer major cont-omiss, 0.2 fewer minor cont-subs, 0.9 fewer major cont-subs, and 0.9 fewer critical cont-subs than the poor performers. This indicates that the poor performers lowered the overall accuracy rate for the interpreting group, thus the similar results for the interpreting and subtitling groups.

#### **5.4.2.3 Recognition errors**

The clear-cut interpreters and the group with more interpreting than subtitling experience made the lowest number of recognition errors with 13.9 and 15.1 errors, respectively. Previous interpreting training in speaking in a clear voice and delivering live translations may have contributed to the group's good results. Participants with more subtitling experience made more recognition errors.

|                           | Minor | Major | Critical | Total |
|---------------------------|-------|-------|----------|-------|
| Clear-cut interpreters    | 9.2   | 4.3   | 0.4      | 13.9  |
| Interpreters w/subtitling | 10.3  | 4.5   | 0.3      | 15.1  |
| Clear-cut subtitlers      | 12.4  | 5.4   | 0.2      | 18    |
| Subtitlers w/interpreting | 12.3  | 5.5   | 0.3      | 18.1  |

Table 5.14: Average recognition errors for interpreters and subtitlers.

Both interpreters' and subtitlers' recognition performance correlate with the speech rates. Videos 3 and 6 were the two fastest videos (with speech rates of 145 wpm and 159 wpm), so they incurred a higher average number of recognition errors, with 43 for the subtitlers and 33.8 for the interpreters. In contrast, Videos 4 and 5 (with speech rates of 125 wpm and 107 wpm) incurred 29.2 recognition errors for the subtitlers and 24.4 for the interpreters. Higher speech rates require a respeaker to dictate faster in order to keep up with the text, and this could result in unclear dictation. A respeaker would also have to work and think faster to produce a live translation, leading to the respeaker hesitating and thereby resulting in more recognition errors.

Tables 5.15, 5.16, 5.17 and 5.18 present the average number of recognition errors made in each video. The interpreter group appears to have better dictation in every video, which indicates they can vocalise live translations, think quickly, and speak in a clear voice, all of which may allowed them to perform better. Subtitlers may require more extensive training than interpreters within interlingual respeaking training to become more accustomed to dictation and enunciating punctuation so that dictation becomes a strength. Both interpreters and subtitlers would require training on live-error correction so that they could manage recognition errors as they appear on-screen.

|                           | Minor | Major | Critical |
|---------------------------|-------|-------|----------|
| Clear-cut interpreters    | 10.2  | 4.2   | 0.4      |
| Interpreters w/subtitling | 11.6  | 6.5   | 0.6      |
| Clear-cut subtitlers      | 14.9  | 7.3   | 0.6      |
| Subtitlers w/interpreting | 15.6  | 5.3   | 0.6      |
| Average:                  | 13    | 5.8   | 0.6      |

Table 5.15: Recognition errors for Video 3.

|                           | Minor | Major | Critical |
|---------------------------|-------|-------|----------|
| Clear-cut interpreters    | 6     | 2.7   | 0.2      |
| Interpreters w/subtitling | 5.6   | 2.9   | 0.07     |
| Clear-cut subtitlers      | 7     | 4.5   | 0.1      |
| Subtitlers w/interpreting | 5.4   | 4.9   | 0        |
| Average:                  | 6     | 3.8   | 0.09     |

Table 5.16: Recognition errors for Video 4.

|                           | Minor | Major | Critical |
|---------------------------|-------|-------|----------|
| Clear-cut interpreters    | 9.8   | 5.5   | 0.7      |
| Interpreters w/subtitling | 10.6  | 4     | 0.5      |
| Clear-cut subtitlers      | 12    | 4.5   | 0.2      |
| Subtitlers w/interpreting | 15.1  | 4.1   | 0.4      |
| Average:                  | 11.9  | 4.5   | 0.5      |

Table 5.17: Recognition errors for Video 5.

|                           | Minor | Major | Critical |
|---------------------------|-------|-------|----------|
| Clear-cut interpreters    | 10.9  | 4.8   | 0.3      |
| Interpreters w/subtitling | 13.2  | 4.7   | 0.1      |
| Clear-cut subtitlers      | 15.8  | 5.1   | 0.3      |
| Subtitlers w/interpreting | 13.2  | 7.5   | 0        |
| Average:                  | 13.3  | 5.5   | 0.2      |

Table 5.18: Recognition errors for Video 6.

Now that the quantity and the severity of recognition errors have been explored, Section 5.4.2.4 presents a statistical analysis of the severity of the recognition errors.

#### **5.4.2.4 Recognition error severity**

The most common recognition error for every group was minor and the least common error was critical, suggesting that minor errors are easier to make than major or critical errors, or that some participants' strengths lie in dictation. No subgroup differences were observed for minor [ $F[3, 38] = 1.16, p = 0.338, \eta^2 = 0.08$ ], major [ $F[3, 38] = 0.41, p = 0.745, \eta^2 = 0.03$ ] or critical [ $F[3, 38] = 0.93, p = 0.435, \eta^2 = 0.07$ ] errors. However, there were differences between the videos [ $F[2.95, 112.07] = 26.07, p < 0.001, \eta^2 = 0.39$ ], as significantly less recognition errors were made in Video 4 ( $M = 9.76, SD = 5.97$ ) than in Video 3 ( $M = 18.88, SD = 9.40, p < 0.001$ ), Video 5 ( $M = 16.26, SD = 7.09, p < 0.001$ ), and Video 6 ( $M = 18.55, SD = 10.38, p < 0.001$ ). Participants obtained poor translation results in Video 4 due to its dense content and specialised terminology. Good recognition results may suggest that they either respoke less text and made fewer recognition errors or that they chose to concentrate on recognition since the translation was not going well. Appendix 7, Tables 13, 14, and 15 present descriptive statistics for minor, major, and critical recognition errors, respectively.



### 5.4.2.5 Distribution of translation and recognition errors

Tables 5.19 and 5.20 show the distribution of translation and recognition errors for interpreters and subtitlers for each video.

|         | Translation errors | Recognition errors |
|---------|--------------------|--------------------|
| Video 3 | 47%                | 53%                |
| Video 4 | 72%                | 28%                |
| Video 5 | 55%                | 45%                |
| Video 6 | 50%                | 50%                |
| Overall | 56%                | 44%                |

Table 5.19: Distribution of translation and recognition errors for the interpreters.

|         | Translation errors | Recognition errors |
|---------|--------------------|--------------------|
| Video 3 | 36%                | 64%                |
| Video 4 | 66%                | 34%                |
| Video 5 | 52%                | 48%                |
| Video 6 | 43%                | 57%                |
| Overall | 49%                | 51%                |

Table 5.20: Distribution of translation and recognition errors for the subtitlers.

The overall distribution of the main experiment is 52% translation errors and 48% recognition errors, with the interpreters making more translation errors and the subtitlers making more recognition errors in each video. These results show that translation and recognition errors are equally challenging. The contrasting results may suggest that interpreters master dictation quicker than subtitlers do, which could be put down to their expected ability to produce faster and more accurate live translations due to previous SI experience. Extensive dictation and software practice are needed to train the voice profile, to reduce recognition errors, and to ensure that strong live translators do not underperform.

### 5.4.2.6 Effective editions

Effective editions are deviations from the ST that do not cause a loss of information but could enhance the communicative effectiveness of the respoken text (Romero-Fresco and Pöschhacker, 2017). There is a significant difference in the number of effective editions made [ $F[3, 114] = 16.01, p < 0.001, \eta^2 = 0.29$ ]. Participants made fewer effective editions in Video 3 ( $M = 4.50, SD = 3.09$ ) than in Video 4 ( $M = 6.60, SD = 3.69, p = 0.070$ ), Video 5 ( $M = 2.26, SD = 1.84, p = 0.001$ ), and Video 6 ( $M = 4.33, SD = 2.38, p = 0.021$ ). No differences were observed between subgroups [ $F[3, 38] = 0.96, p = 0.423, \eta^2 = 0.07$ ]. It was expected that the more effective editions were made, the fewer cont-omiss errors there

would be. Edited text that did not cause a loss of information was scored as an effective edition. Any loss of information would be penalised as an omission.

|                           | Cont-omiss | Effective edition |
|---------------------------|------------|-------------------|
| Clear-cut interpreters    | 8.7        | 15.4              |
| Interpreters w/subtitling | 10.3       | 17.9              |
| Clear-cut subtitlers      | 9.8        | 22.2              |
| Subtitlers w/interpreting | 9.5        | 16.2              |
| Average:                  | 9.6        | 17.9              |

Table 5.21: Effective editions vs. cont-omissions by group.

Video 4 had the most difficult content and caused the highest number of effective editions and cont-omiss errors, with 7.3 and 13.9, respectively. Video 6 had the highest speech rate and incurred a high number of cont-omiss errors. The clear-cut interpreters made the lowest amount of cont-omiss errors and effective editions, showing that they were able to keep up with the original without omitting or condensing information. The groups with a higher number of cont-omiss and the most effective editions were not able to keep up and therefore did not respeak as much text. Appendix 7, Table 16 presents descriptive statistics for effective editions.

#### **5.4.2.7 Analysis of overall interlingual performance**

The clear-cut interpreting group achieved the highest average accuracy rate for interlingual respeaking, with 97.78% (4.5/5), followed by the subtitlers with interpreting (97.36%, 3.5/10) and the clear-cut subtitlers (97.30%, 3.5/10); the interpreters with subtitling obtained the lowest overall accuracy rate for interlingual respeaking, with 97.05% (2.5/10). The differences in the results of the subgroups were not statistically significant. It should be noted that the good-performing group of interpreters obtained an average of 98.57% (6.5/10) and the poor-performing group achieved 97.07% (2.5/10). The interpreters achieved a lower accuracy rate than the subtitlers in Video 3 and higher accuracy rates in Videos 4, 5 and 6, with differences of - 0.13% + 0.15%, + 0.24%, and + 0.05% respectively.

|                           | Video 3 | Video 4 | Video 5 | Video 6 | Average |
|---------------------------|---------|---------|---------|---------|---------|
| Clear-cut interpreters    | 98.11%  | 97.32%  | 97.65%  | 98.05%  | 97.78%  |
| Interpreters w/subtitling | 96.88%  | 96.49%  | 97.46%  | 97.39%  | 97.05%  |
| Clear-cut subtitlers      | 97.46%  | 96.92%  | 97.22%  | 97.61%  | 97.30%  |
| Subtitlers w/interpreting | 97.80%  | 96.49%  | 97.45%  | 97.69%  | 97.36%  |

Table 5.22: Interlingual accuracy rates of interpreters and subtitlers.

The subgroup of poor-performing interpreters and the lowest accuracy rate obtained by the interpreters with some subtitling experience, may suggest that the success of interlingual respeaking depends on how individuals perform and their ability to develop and build upon the task-specific skills required for interlingual respeaking, rather than depending exclusively on individuals' professional backgrounds. The poor-performing interpreters would have worked on the skills necessary for SI during their interpreting training. However, for one reason or another, they were not able to transfer their knowledge to the interlingual respeaking exercises, or perhaps they were poor-performing interpreters to start with. This could be due to an individual having a lower language competency or perhaps not having the natural abilities for live translation. Reasons for low performance were not investigated here; however, they could be avenues for further research. All subgroups (except for the interpreters with subtitling) achieved higher accuracy rates in videos with higher speech rates (Videos 3 and 6), than in videos with lower speech rates. This is an unexpected result, however, the content of Videos 3 and 6 were simpler than Videos 4 and 5 due to repeated ideas and less complex sentence structures. These results may also suggest that the added pressure of a high speech rate encouraged participants to include more content. Lower accuracy rates were achieved with lower speech rates and more challenging content (Videos 4 and 5), suggesting that content may play a more significant part in interlingual respeaking performance than speech rate.

### 5.5 Overall performance of the interpreters

Table 5.23 details the interpreters' overall accuracy rates. The interpreters' average for the interlingual respeaking test was 97.62%. To put the accuracy rates into context, of the 27 participants in this group, only four participants reached the 98% threshold in all six respeaking exercises; all four of these participants were clear-cut interpreters and belonged to the good-performing subgroup. Participants tended to perform well in Video 3, poorly in Video 4 and then performance gradually increased with

Videos 5 and 6. The other two good-performing interpreters reached 98% in five exercises; the exception was Video 4, which was deemed to be the most complex video due to its specialised topic. Three more participants, who belonged to the interpreters with subtitling group, reached 98% in five exercises.

|              | Video 1 | Video 2 | Video 3 | Video 4 | Video 5 | Video 6 | Average |
|--------------|---------|---------|---------|---------|---------|---------|---------|
| Interpreters | 98.20%  | 98.62%  | 97.47%  | 96.89%  | 97.55%  | 97.69%  | 97.74%  |

Table 5.23: Interpreters' overall performance.

Cont-omiss and cont-subs errors were the most common errors for interpreters, with 9.5 cont-omiss, 6.2 cont-subs, 0.8 cont-add, 1.7 form-corr, and 0.3 form-style per participant. These results indicate that keeping up with the text and producing an accurate live translation were the most difficult textual aspects of interlingual respeaking for interpreters; therefore, these aspects could become a focal point for everyone in training, with tailor-made exercises to raise awareness of and reduce such errors. The main difference in translation errors was cont-omiss, as poor performers had an average of 10.7 and good performers had an average of 6.4 omissions per text. This suggests that poor performers either omitted more text because they could not keep up with the video or that they had lower levels of ST comprehension and therefore omitted more due to not being able to convey the meaning.

Good-performing interpreters managed to produce respoken texts with consistent accuracy rates in both intra- and interlingual respeaking. There is some evidence of a collective improvement in performance throughout the course, as accuracy rates steadily rose from Video 4 to Video 6. Poor-performing interpreters made on average 6.5 more translation errors and six more recognition errors per text than the good-performing interpreters did. Although the poor-performing interpreters made more errors, the distribution between the translation and recognition errors for the interlingual tests was the same for both groups, at 55% translation errors and 45% recognition errors.

## 5.6 Overall performance of the subtitlers

The subtitlers' average for the interlingual respeaking test was 97.59%. Out of the 17 participants in the subtitler group, nine reached 98% in both interlingual respeaking exercises and only one was able to

reach 98% in all four interlingual respeaking exercises; a further two participants reached 98% in three out of four exercises.

|            | Video 1 | Video 2 | Video 3 | Video 4 | Video 5 | Video 6 | Average |
|------------|---------|---------|---------|---------|---------|---------|---------|
| Subtitlers | 97.82%  | 98.22%  | 97.60%  | 96.74%  | 97.31%  | 97.64%  | 97.56%  |

Table 5.24: Subtitlers' overall performance.

The subtitler group made on average 17.5 translation errors per video per participant, and those with some interpreting experience made on average 1.5 fewer translation errors. Subtitlers made more cont-omiss and cont-subs errors than any other subtype of translation error, with averages of 9.7 cont-omiss, 5.5 cont-subs, 0.4 cont-add, 1.8 form-corr, and 0.2 form-style errors. In comparison with the interpreters, the subtitlers made fewer cont-subs and cont-add errors, suggesting that they were able to produce more accurate translations overall and did not add as much content as the interpreters did. The subtitlers made more cont-omiss and form-corr errors, indicating that they were not able to keep up with as much of the text and that their translations were lacking in grammatical accuracy compared with the interpreters. The subtitlers made on average 18.2 recognition errors per video per participant, which is higher than the interpreters average of 14.5 errors. Subtitlers may require more extensive training than interpreters within interlingual respeaking training to become more accustomed to dictation and enunciating punctuation. It may be that those with subtitling backgrounds will be required to complete extra respeaking tasks to train such skills.

The clear-cut subtitlers had three participants that performed well throughout the course with average accuracy rates of 99.05%, 98.32%, and 98.28%, respectively. They dictated clearly, with good volume at a steady pace, and experienced minimal technical issues, thus mirroring the performance of the subgroup of good-performing interpreters. Compared with other participants in this subgroup, the three good-performing subtitlers had a lower number of translation errors than the other seven clear-cut subtitlers, more specifically, they made fewer cont-omiss, with an average of 4.3 for good performers and 12 for poorer performers; also, cont-subs were lower, with an average of 3.1 for the good performers and 6.9 for the poorer performers. Their production of full and accurate live translations suggests that the three good performers have excellent comprehension of the SL and expression of the TL.

Those with a clear-cut subtitling profile reached an average of 97.29% (3/10) across all interlingual respeaking exercises, suggesting that subtitlers can produce respoken texts that provide some level of

access. As the first three subtitlers demonstrated, subtitlers may be able to perform well in interlingual respeaking but, as any class on any topic, when taken as a group, there is no guarantee that they will be able to perform well.

The subtitlers with some interpreting experience achieved an average accuracy rate of 97.35%, which is slightly higher than the clear-cut subtitlers (97.29%) and lower than the interpreter group (97.74%). Videos 3 and 6 also had the highest accuracy rates overall for the subtitling mixed group, which suggests that translation errors had more of an impact on accuracy rates than recognition errors did. Three students were using the built-in microphone on their laptops instead of a headset, and another two students had poor dictation because they either dictated too fast or hesitated too often.

## **5.7 Qualitative results**

This section presents the questionnaire responses from the pre-experiment and post-experiment questionnaires, which aimed to gather data on resources for training, the main challenges, useful skills, and most important background for interlingual respeaking. As explained in Chapter 3, the questionnaires were analysed with the support of NVivo to identify themes. It must be noted that not all participants answered every question.

### **5.7.1 Self-assessed competence of the interpreters and subtitlers**

Before taking the course, the participants self-assessed their competence of interpreting and subtitling from four options: inexistent, novice, intermediate, or expert. Of the interpreting group, 14 participants self-assessed as intermediate and 11 as novice. Of the subtitlers, 5 rated their competence of subtitling as novice, 8 as intermediate and 4 as expert. Interestingly, no participants from the interpreter group self-assessed their competence as expert. There was no correlation between the length of interpreting or subtitling training received and the self-assessed level of competence of the task. Nor was there any correlation between the self-assessed level of competence and the actual performance.

### 5.7.2 Resources for training

The training delivered for the experiment met the participants' expectations. Many of them (28) mentioned that they wanted to understand how respeaking works as well as the skills and tasks required for the job, and others (14) wanted to find out how the software worked. Seven participants mentioned that the course was too short, some specifically noting:

*'It was too short to master the required respeaking or subtitling skills';*

*'More time and practice would be appreciated';*

*'We need more hours, more practice, and more guidance';*

*'This is a subject that should last an entire semester or an entire academic year'.*

Both groups found the most useful resources to be instructions and videos for practical exercises (illustrative videos and case studies of respeaking). These two resources may have come out on top because without them the students would not have been able to complete the respeaking exercises. If these two resources were taken out of the picture, readings about respeaking might be highly ranked by participants; however, readings for subtitling and interpreting were not popular, which could be due to participants already being familiar with these subjects or not wanting to read the texts. This suggests that tailor-made material for respeaking should be used in training instead of using material directly from subtitling or interpreting. Overall, participants ranked engaging with others via the online forum as their least useful resource. This emphasises that social constructivism is not always effective in empowering learners. By incorporating a social-constructivist approach into the main experiment, it was thought that participants would be able to complete the train and practice stages at their own pace and take control of their learning. Participants did complete the dictation, intra- and interlingual respeaking exercises, but did not engage with any discussion points that the researcher attempted to initiate via the platform. The reasons for this are unknown, but they could be put down to anything from not having enough time to contribute to discussions, not feeling as though they had enough knowledge about respeaking to participate or preferring to learn individually rather than as a group.

Participants said that there was enough exposure to readings. There appears to have also been enough dictation practice, although some participants would have liked more. Exposure to intra- and interlingual respeaking practice appears to have been just right overall. Most thought that there were enough readings, which reflects the results of the initial questionnaire in which participants noted that reading

was the least useful resource for training. One factor that could affect the amount of exposure to content is the length and intensity of the course. A long non-intensive course may only expose trainees to one respeaking exercise per week, whereas a shorter more intensive course may expose them to two or three practical exercises as well as readings and peer interaction.

### **5.7.3 Main challenges and task-specific skills for interlingual respeaking**

Regarding the level of difficulty of the test, 21 of the 44 participants rated it as very difficult or difficult and 5 participants rated it as easy; on average, those who rated it as easy did not perform better than those who rated it as very difficult or difficult. Speed was ranked as the most difficult aspect to deal with by all groups, even though speech rate does not seem to have played a significant role in the quantitative results. Higher accuracy rates were obtained in videos with higher speech rates (Videos 3 and 6), but these videos also had the easiest content. Lower accuracy rates were achieved in Videos 4 and 5, but the content of these videos was more dense. These results suggest that speed may not influence respeaking performance as much as content, structured or spontaneous delivery, and genre do. However, although the quantitative results do not highlight speed as a challenging aspect of interlingual respeaking, participants do identify it as one, suggesting that speed may be a contributing factor to the pressure of the task. For the main experiment, all groups deemed Videos 1 and 2 as the easiest videos to respeak, most likely because they were both intralingual exercises and the added difficulty of language transfer was not present. The most difficult interlingual video to respeak (the one that caused the lowest accuracy rate) was the interview in Video 4, which could be put down to the specialised vocabulary and dense content that posed more challenges than the other videos did.

Stark differences between good and poor performers include good performers having clear dictation, producing fast and accurate live translations, and having the ability to speak and listen at the same time without being distracted. Poor performers had poorer dictation due to their hesitation when trying to produce a live translation and not being able to keep up with the original text. After completing the interlingual respeaking test, participants were asked what they thought the task-specific skills a professional interlingual respeaker should have are. All groups deemed multitasking, live translation, and dictation skills to be the most important. Language and comprehension skills were also rated highly. Other skills noted by the interpreting group were comprehension of the ST, proficient knowledge of



language and culture, and abilities such as concentrating, managing stress or pressure, and thinking quickly; this suggests that a particular personality could be best suited for an interlingual respeaker. The subtitling group noted that subtitling skills are important to understand the purpose of subtitles and the target audience as well as condensation, knowledge of current affairs, and the ability to remain calm and focussed while respeaking. Some participants also noted patience, a high level of concentration, and anticipation as important characteristics for an interlingual respeaker.

Interestingly, the task-specific skills required for interlingual respeaking mirror the differences previously mentioned between good and poor performers. Participants acknowledged that multitasking is required to simultaneously combine interpreting with watching images on-screen, monitoring their own output, and making decisions about content while listening and speaking. This highlights that the multitasking aspect of SI alone is a challenge, and yet interlingual respeaking is similar to asking one to simultaneously interpret and complete other tasks at the same time, thus introducing multiple layers of multitasking. Many interpreters and subtitlers mentioned recognition and software issues, some reporting that clear dictation is key, while others specified the importance of dictating with a clear and steady pace, making pauses, trying not to mumble or hesitate, and remembering to enunciate punctuation. The element of live translation also comes from interpreting, as interpreters must enunciate them; the difference here is that, in respeaking, a translation must be dictated rather than spoken in a pleasant tone, so those with previous interpreting experience must become accustomed to the software being their audience and those with previous subtitling experience must learn to dictate live translations. Comprehension was highlighted as a challenge by some interpreters and subtitlers, due to the difficulty inherent in understanding the whole message in a foreign language while respeaking it in a different sentence in another language. Some participants noted the importance of having a proficient knowledge of language and culture, which could be overlooked by some but is in fact an important skill to ensure that the respeaker transfers the correct meaning to the target audience in the most appropriate way. Some subtitlers recognised subtitling skills as being important; these skills include understanding the purpose of the subtitles, the target audience, and the objectives.

Figure 5.6 illustrates the task-specific skills that came to light during the experiment, all of which should be taught through task-specific exercises within a training programme for interlingual respeaking. Many skills overlap between two or three of the fields, which highlights the necessity for skills from all three fields to be included in training.

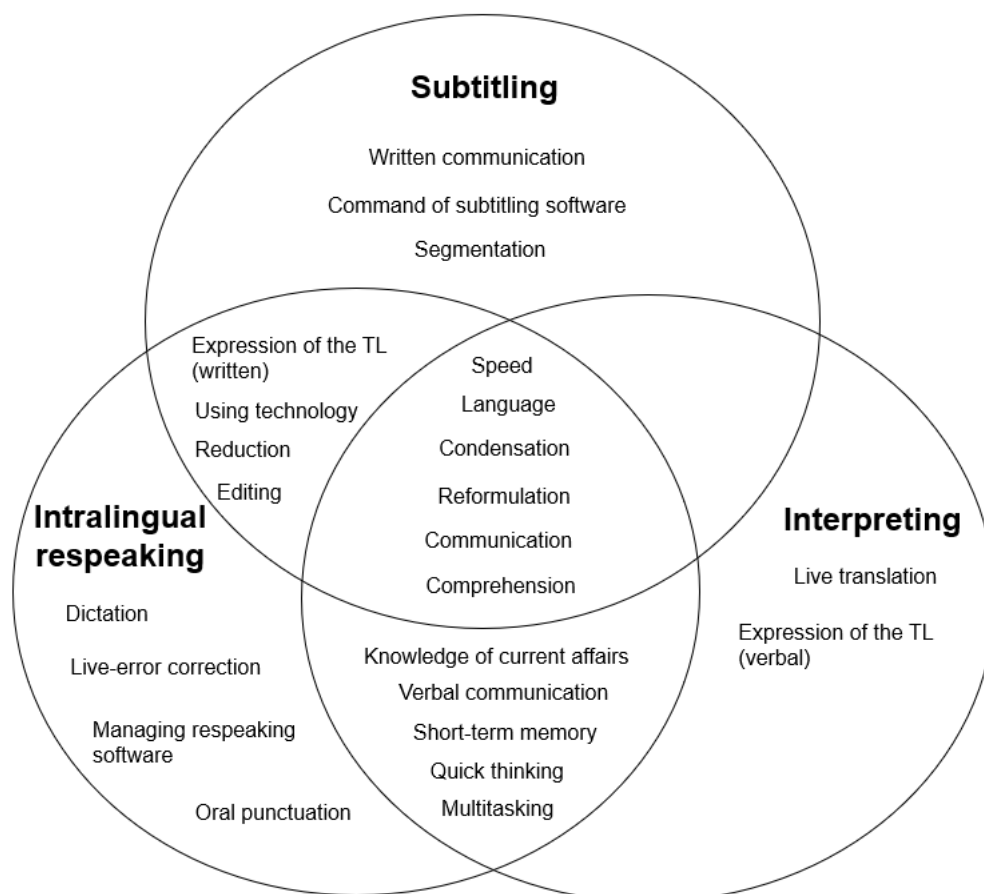


Figure 5.6: Task-specific skills required for interlingual respeaking.<sup>13</sup>

#### 5.7.4 Best-suited professional profile for interlingual respeaking

Participants were asked what they deemed to be the best-suited profile out of the options of interpreter, intralingual respeaker, subtitler, translator, and linguist. Interpreter was highly rated, closely followed by intralingual respeaker. Participants did not think a subtitling or translation background would be suitable and deemed linguistics to be the least-suited background. Indeed, interpreters and intralingual respeakers deal with live translation or live reformulation and are used to multitasking and to speaking or dictating, which are the three top skills rated highly by all participants. There were no differences in the ratings between the interpreters and the subtitlers regarding the most important background.

<sup>13</sup> Figure 5.6 also appears in Chapter 8, Section 8.2.5.

Good and poor performers can be seen in both the interpreting and the subtitling groups. Although the data is not statistically significant, the quantitative results show that interpreters performed the best in terms of recognition and translation errors. The good-performing interpreters were strong live translators and were able to keep up with the speed of the videos and with the multitasking involved in respeaking. Much like the good-performing interpreters, participants that performed well in the subtitling group had clear dictation, good live translation skills, and seemed to keep up with the text.

Participants with more interpreting experience tended to perform better than those with solely subtitling experience. Subtitling experience may be necessary for interlingual respeaking training, but it must be accompanied by the necessary skills that originate from interpreting. It appears that although interpreters may be initially better equipped to deal with the complexity of interlingual respeaking, students from other backgrounds also have, or may be able to acquire, the necessary task-specific skills to perform well. This highlights the fact that the most important aspect for trainees may be the development of the task-specific skills that they may lack from inexperience rather than having a particular professional profile.

### **5.8 Informing the interlingual respeaking module**

The results of the main experiment highlight some important aspects to consider when designing the interlingual respeaking module for the University of Vigo's interlingual respeaking course:

- Cont-omission and cont-substitution errors are the most common translation errors, which suggests that keeping up with the text, comprehension and producing an accurate live translation are challenging. Specific exercises, such as live-error correction and being asked to reflect on errors made, could be designed to target the subtypes of translation errors and to make trainees aware of their causes and consequences through NTR analysis.
- Participants who achieved good accuracy rates in intra- and interlingual respeaking dictated clearly, with good volume at a steady pace, and experienced minimal technical issues. This emphasises the importance of extensive dictation practice before respeaking practice to minimise recognition errors.

- The main challenges faced by participants could be due to a lack of developed task-specific skills, such as multitasking, dictation, live translation, language and comprehension. These skills could become focal points in tasks and class discussions.
- Those who performed well in interlingual respeaking were also the top performers of the intralingual respeaking exercises. This suggests that participants who are trained as interlingual respeakers can also become very good intralingual respeakers. In this way, becoming an intralingual respeaker may offer simultaneous interpreters a promising new job opportunity and may not just be a pre-requisite to interlingual respeaking. Encouraging discussions in training on topics, such as the role of the respeaker, working conditions and rates may allow trainees to contribute to the development of the profession and to consider their options as professional respeakers.
- In terms of resources for training, a wide variety of videos for practical exercises covering various genres, speeds, delivery, etc. would expose trainees to as much content as possible and allow them to develop strategies to work with varying speeds, difficult terminology, and delivery patterns while providing a live translation of good quality. Readings in general were not deemed useful; however, specific readings about respeaking were and could perhaps be introduced at the beginning of a course along with example reference videos of respeakers in action.
- Although a space was set up for participants to interact with one another online, they did not take the opportunity to do so. As interlingual respeaking is a new mode of translation, it may be beneficial for trainees to share tips and strategies of their respeaking practice. Creating and using voice commands could be seen as an individual preference; however, sharing such ideas is likely to be beneficial for other trainees too. For training, interaction may be encouraged through discussion-focussed tasks via an online forum, such as the feature on Google Classroom, where trainees would be able to participate in discussions with peers and trainers.

## **5.9 Final thoughts**

The results of this experiment provide some tentative answers to the research questions posed at the beginning of this thesis, the main task-specific skills required, and the best-suited professional profile for an interlingual respeaker.

The average accuracy rate of the main experiment (97.37%, 3.5/10) does not quite meet the required threshold. After only three weeks of training, some participants (mostly from the interpreting group) managed to obtain over 98% accuracy for some of the videos. The duration of the training may be a crucial aspect here, as time (and professional practice) will tell whether or not interlingual respeaking can produce good results in all contexts and for all types of material.

The results show that the most important task-specific skills involved in interlingual respeaking are the ability to keep up with the original text, produce a fast and accurate live translation, and dictate in a clear manner. Keeping up with the text and producing good live translations help to eliminate or reduce translation errors and, more specifically, cont-omiss and mistranslations or cont-subs, which have proved to be recurrent translation issues. The training needed to address these two skills may consist of multitasking exercises, providing students with videos of increasingly fast speech rates so they can become accustomed to varying levels of difficulty, and adopting a paced approach to multitasking (listening + speaking + watching the screen + correcting on-screen errors). Clear dictation is essential to avoid or reduce recognition errors; it may be acquired with extensive dictation and software practice, ensuring that students can find a personal 'dictation mode' that works for them and enables them to obtain near-perfect accuracy when using SR software.

50% of interpreters and 20% of subtitlers managed to achieve the 98% threshold in the interlingual respeaking tests. However, this does not mean that all simultaneous interpreters are automatically qualified to be good interlingual respeakers or that subtitlers should not be considered for this job. Instead, it means that the greatest difference in performance has not been found between (clear-cut) backgrounds, but between good- and bad-performing interpreters and subtitlers. Good-performing interpreters seem very well positioned to produce interlingual respeaking, as they had the best dictation and managed error severity well. They would need to add certain aspects to their skill set, such as SDH knowledge of the importance of using colours to identify speakers and describing noises, onomatopoeias and music, and oral punctuation and to 'untrain' others, such as speaking in a natural and pleasant tone. Likewise, good quality interlingual respeaking can also be produced by subtitlers with the ability to dictate clearly and who have good multitasking and live translation skills. More extensive training is perhaps needed to train subtitlers to build upon the skills they already have from a subtitling background and to develop new skills related to interpreting. This will ensure that trainees receive information from both tasks and apply that knowledge to aid performance in interlingual respeaking. Desired

characteristics for an interlingual respeaker were also identified, such as patience, focus, ability to think quickly, and concentrate.

The results of this main experiment informed the materials, tasks, and approaches of an interlingual respeaking module for an online interlingual respeaking course delivered online through the University of Vigo. The next chapter presents the interlingual respeaking performance of students who took part in the course and acts as the third and final experimental stage of the AR spiral, concluding the practical part of this research.

# Chapter 6

## Interlingual respeaking module

### An analysis of trainees' interlingual respeaking performance

#### 6.1 Introduction

The main experiment, presented in Chapter 5, gives some answers to the task-specific skills that are required for interlingual respeaking. The results show that multitasking, live translation, dictation, language, and comprehension are among the essential task-specific skills and that a best-suited professional profile may, in fact, not exist. The learnings of the main experiment were used to design an interlingual respeaking module. Delivering face-to-face training was not an option for this experiment because the course was delivered through the University of Vigo which determined the logistics of the course. From January–May 2019, a four-month online interlingual respeaking course was delivered via the present researcher and two colleagues. This chapter is primarily concerned with the trainees' performance and their experiences during the course; therefore, personal interpretations from a trainer's point of view will be offered throughout Chapter 8 when discussing how the empirical results have informed the training model and course. The chapter begins by framing this experimental phase of research as the final stage of the AR spiral and outlines the design, materials used, quality assessment methods applied, and the trainees who took part in the course. Then, the quantitative results are presented; they focus on translation and recognition errors and error severity which highlight trainees' strengths and weaknesses, and an analysis of the overall interlingual performance is given for all trainees. The qualitative results from the ongoing group forum discussions between the trainees and the trainers are also presented to provide more information on the main challenges of interlingual respeaking, the most useful skills, and the most important background. Trainees completed feedback questionnaires at the end of the module, and their responses are detailed in this chapter. The final section focusses on how the results of the interlingual respeaking module can inform interlingual respeaking training.

## **6.2 Interlingual respeaking module: methodology**

### **6.2.1 Design**

Findings from the pilot and main experiment informed the creation of an interlingual respeaking module, which formed part of the interlingual respeaking course. The interlingual respeaking course was proposed, designed, and created by GALMA as part of its ventures to create training courses for media professionals and trainees. The course was put forward to the University of Vigo as a standalone course that is not a part of an official BA or master's degree. The online platform currently used for online training by the University of Vigo, Faitic, was not deemed to have the flexibility needed for this type of course. Therefore, Google Classroom was chosen as the platform. The prerequisites of the interlingual respeaking course required that each student had completed at least three quarters of a university degree. The course was aimed at those interested in translation, interpreting, languages in general, and, in particular, at those interested in AVT and the provision of access services. For the interlingual respeaking module, a research-based approach to training was required to provide trainees with the proper training to work as interlingual respeakers and, at the same time, to collect research data. Throughout the course, trainers provided trainees with research as part of the training, and trainees provided trainers with research data in the form of respeaking exercises. It was important that the training course was conducted in a way that ensured that trainees did not feel as though they were just participants in an experiment; for this reason, a social-constructivist approach to training was highly beneficial. This approach allowed trainees to individually complete interlingual respeaking tasks and to collaboratively participate in class discussions, including sharing respeaking strategies and techniques. Such discussions engendered insightful information, such as what participants found challenging and what their preferred exercises and resources were.

Current research in translation and interpreting pedagogy includes applied research that is conducted directly through teaching, learning, or testing in classrooms and virtual environments on participants, materials, and activities, all with the aim of having a direct impact on pedagogical practice (Colina and Angelelli, 2016). This is something that has gradually evolved from a teacher-centred to a learner-centred model. Constructivist approaches involve knowledge and learning as dialogic and constructed in social interactions, as opposed to an objective reality that can be transmitted (*ibid.*), thereby allowing learners and their profiles to become the focus of the classroom. From a social-constructivist approach, Kiraly (2000) proposes that translator education should be a dynamic, interactive process. One that is



based on learner empowerment, that encourages interpersonal collaboration, and one in which teachers serve as guides, consultants, and assistants. Training based on this approach, as explained by Kiraly, could help students build a sense of responsibility towards their own learning and future profession; it was important to consider this approach when designing training for this experiment as this approach is likely to be taken forward into the design of a training course for interlingual respeaking. Such translator training theory can also be linked to the principles of AR due to its focus on improving something for a person. In this case, it is improving access services for a wide audience through the creation of interlingual respeaking training, which in turn could positively impact on the professional trajectory of trainees.

The approach to training takes ideas from social constructivism to create a learner-centred classroom, but also from traditional approaches to translator training. One example is a task-based approach to training as the identification of the skills required for respeaking is a fundamental step in designing any respeaking course (Arumí Ribas and Romero-Fresco, 2008). Therefore, the results of the main experiment presented in Chapter 5 have informed the interlingual respeaking module presented in this chapter. Like the pilot and main experiments, the methodology for this stage of research took on a 'train, practice and test' approach. Since the interlingual respeaking module formed part of an online interlingual respeaking course, it is important to, first, provide an outline of the entire course in order to situate the module presented in this chapter.

The course was composed of three modules, each with eight units. Each unit represented a topic, which was taught over one week and trainees were given a mark out of ten upon completion of each unit. Modules 1 and 2 on SI and intralingual respeaking ran in parallel for eight weeks, followed by Module 3 on interlingual respeaking which ran for another eight weeks. The SI module covered the following eight units: (1.1) origin and definition of SI; (1.2) SI in the media; (2) SI strategies: omissions, additions, and clarifications; (3) applied SI strategies; (4) difficulties and complexities in SI: general perspectives; (5) difficulties and complexities in SI: speed; (6) interpreting political language; (7) SI in live interviews; and (8) televised political debates. Each unit was based upon a particular SI theory and included compulsory and optional readings. The aim of each theoretical section was to reflect upon the specific difficulties that trainees would face in the videos of that unit. Each unit had between 80 and 240 minutes of video for trainees to select extracts of text to practise SI with, and trainees were expected to spend around three hours per week on the exercises.

The intralingual respeaking module covered the following eight units: (1) live subtitling and respeaking: definitions and methods; (2) respeaking; (3) dictation and speed; (4) punctuation; (5) split-attention and rhythm; (6) preparation, sports, and the NER model; (7) respeaking the news; and (8) respeaking interviews. Each week, trainees carried out readings on aspects of respeaking, such as dictation, punctuation, speed, and split-attention. Trainees were guided to progressively complete readings on the topics before carrying out practical exercises and then contributing to class discussions. Two practical respeaking exercises each week exposed trainees to different types of audiovisual material with varying speech rates and numbers of speakers and different genres of TV, such as sports, news, weather, entertainment, and interviews. Towards the end of the module, trainees carried out a NER analysis of their respoken texts to analyse the edition, translation, and recognition errors and calculate the accuracy rate of their exercises. Trainees were expected to spend two to three hours per week on the exercises. As mentioned before, the course was largely learner-led, with some trainees even posting questions for other trainees to answer. Trainers began and contributed to all class discussions and supplied trainees with extra resources of interest throughout the course. Each week, trainees carried out their own quality assessment with the NTR model and trainers acted as second markers to provide detailed and personalised feedback. Occasionally, the trainers interacted with trainees through direct emails to resolve technical issues and questions that the trainees did not wish to post publicly.

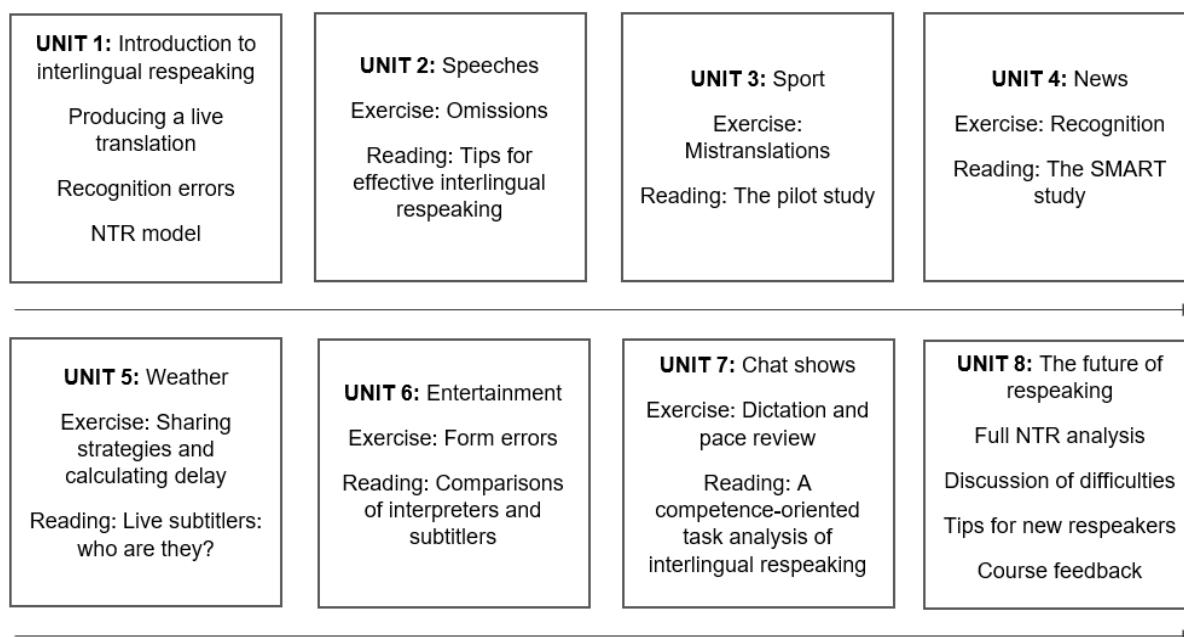


Figure 6.1: Outline of the interlingual respeaking module.

Figure 6.1 shows each individual unit for the interlingual respeaking module. Unit 1 introduced trainees to interlingual respeaking by asking them to respeak an easy video with a low speech rate (all audiovisual material is outlined in Section 6.2.2) while monitoring recognition errors. Trainees were also introduced to the NTR model. In Units 2–7 trainees had three videos each week: one to use as a warmup respeaking exercise and two to complete the practical tasks with. Tasks focussed on managing the different subtypes of translation errors and recognition errors in order to manage the challenges that interlingual respeaking poses, calculating delay, and carrying out an NTR analysis each week. The NTR analysis allowed trainees to develop a thorough understanding of the causes and consequences of translation and recognition errors and to identify their strengths and weaknesses when respeaking. Each week, trainees engaged in discussions with each other and the trainers via the online forum. Some tasks prompted discussion between trainees on the challenges of interlingual respeaking, managing errors, discussing recent research, and sharing tips, such as useful custom macros. As they were in Modules 1 and 2, trainees were expected to spend around two to three hours on the exercises for each unit.

The interlingual respeaking course was delivered via the online platform Google Classroom and was mainly taught in Spanish, however, students and trainers occasionally communicated in English. The course material for each unit was uploaded on a weekly basis with instructions, a set of tasks, and the audiovisual material needed to complete the tasks. Figure 6.2 illustrates the overall layout of the platform. Each unit had its own section, which contained a brief message from the trainers and the material, as shown in Figure 6.3.

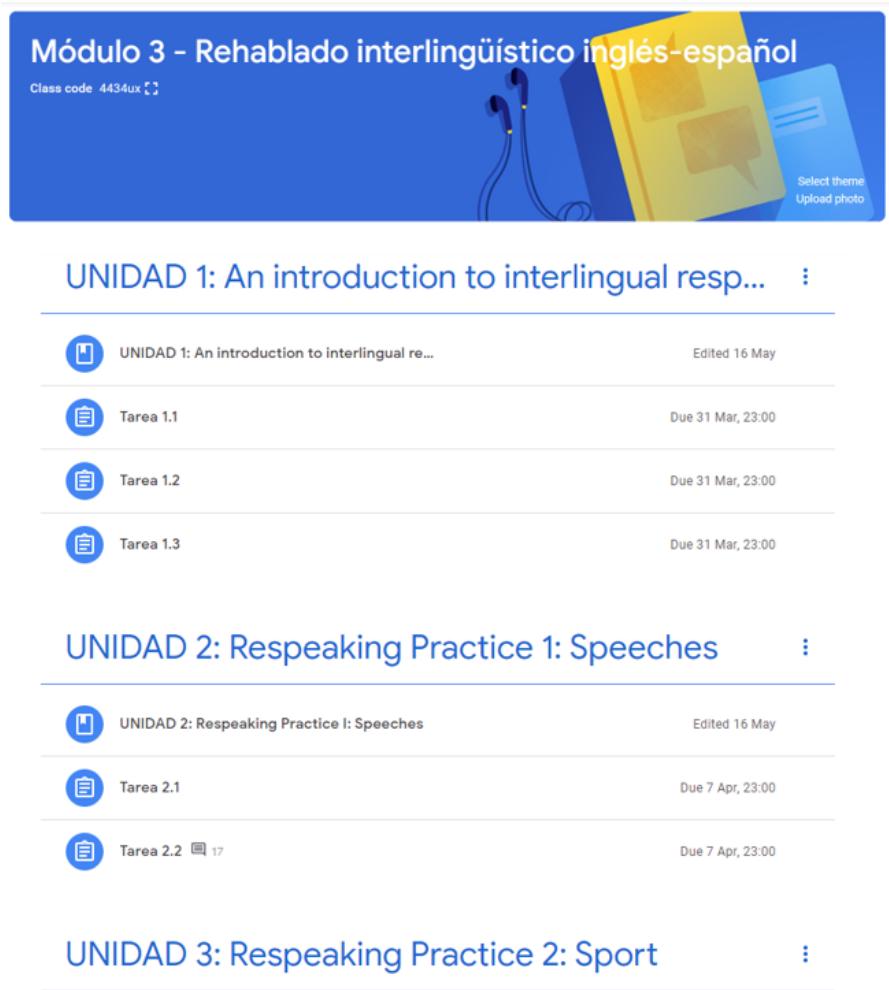


Figure 6.2: Layout of the Google Classroom platform.

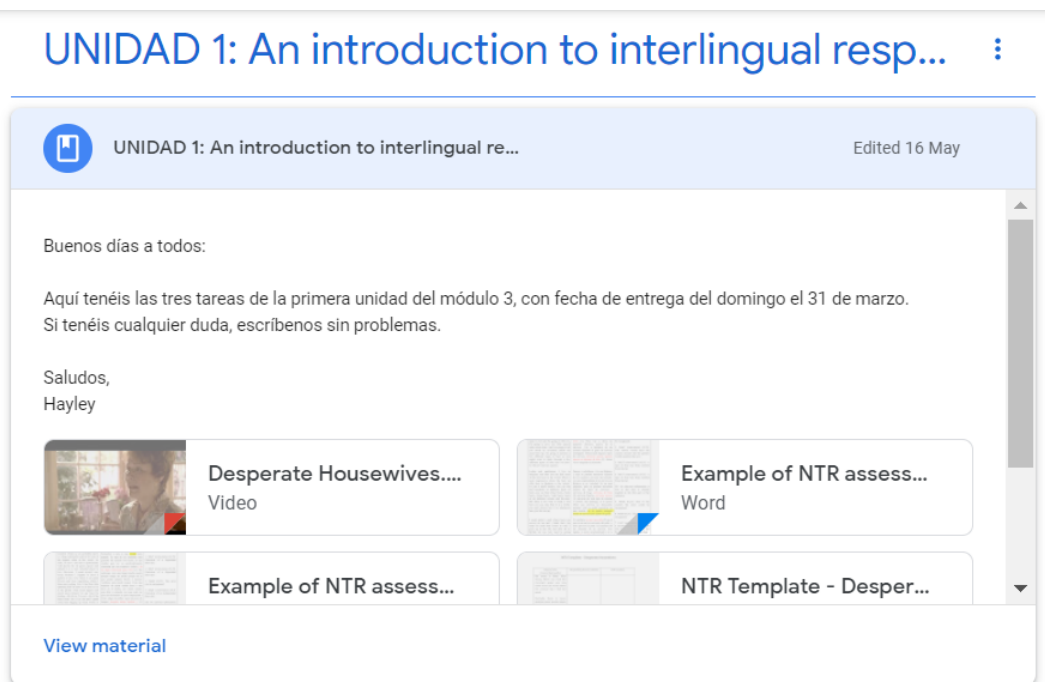


Figure 6.3: Example of a unit in Google Classroom.

### 6.2.2 Material

Although trainees had access to three videos per week for completing their interlingual respeaking tasks, they only carried out an NTR analysis with one video per week. Table 6.1 shows the genre, duration, and speech rate of each video that the trainees respoke and analysed. Trainees were advised to watch each video before respeaking it in order to train the essential preparation skills required in the pre-process stage of respeaking. For Unit 8, trainees were instructed to respeak the video without watching it beforehand. In order to prepare Dragon, trainees were provided with a list of terminology to train the software with. Just as in the pilot and main experiments, trainees were provided with Dragon and Screencast and used them to record their performance each week. The Screencast recordings are available in Appendix 11.

| Unit | Genre               | Speech rate | Duration |
|------|---------------------|-------------|----------|
| 1    | General             | 102 wpm     | 00:02:33 |
| 2a   | Speech (live event) | 101 wpm     | 00:02:04 |
| 2b   | Speech (live event) | 107 wpm     | 00:05:21 |
| 3    | Sport               | 153 wpm     | 00:03:10 |
| 4    | News                | 183 wpm     | 00:04:55 |
| 5    | Weather             | 185 wpm     | 00:01:14 |
| 6    | Entertainment       | 121 wpm     | 00:04:00 |
| 7    | Chat shows          | 190 wpm     | 00:04:03 |
| 8    | Speech (live event) | 129 wpm     | 00:06:18 |

Table 6.1: Details of video clips used during the module.

The duration of the videos for the interlingual respeaking module varied from around two to five minutes long. Their content was deliberately varied, ranging from the news to chat shows. Video 1 is a short narrative clip from the TV series *Desperate Housewives*, video 2 is a segment of President Obama's farewell speech, which was delivered to a live audience for an American news channel. Videos 1 and 2a were both used in the pilot experiment; the low speech rates, long pauses, and anecdotal nature of these clips made them easy material, allowing trainees to concentrate on the new element of language transfer. Video 2b was used in the main experiment and is a speech delivered by Emma Watson on feminism. In Unit 2, trainees had the option to respeak Video 2a or 2b. Video 3 was the opening of an *El Clásico* game with a medium speech rate, and it contained various proper nouns (players' names).

Video 4 is a clip of a BBC news segment in which a discussion about Hurricane Harvey takes place between an environmental analyst and a weather reporter. It has a high speech rate and contains some subject-specific vocabulary. Video 5 is a brief weekly weather report of the UK retrieved from ITV. It has a high speech rate and dense content. Video 6 tells the story of a MasterChef contestant while they cook a dish and was retrieved from the BBC. Video 7 is a clip of *The Ellen DeGeneres Show* retrieved from the Ellen YouTube channel and is an interview with a viewer who does good deeds for society. There is a high speech rate and multiple speakers but no technical content. Video 8 was used as a test clip, as trainees were instructed not to watch the video before respeaking it. As the researcher was not physically present, measures could not be taken to make sure that trainees only watched the video once. The video was of Michelle Obama's farewell speech, retrieved from BBC News, which was delivered to a live audience; it dealt with the importance of togetherness and supporting young people. For each unit, trainees respoke videos of different genres and varying speech rates so as to learn how to deal with material that they may come across in a professional environment.

### 6.2.3 Participants

Since the course was delivered online through the University of Vigo, it was advertised through their website.<sup>14</sup> Some aspects of the course, such as delivery format and recruitment of trainees were dictated by the University of Vigo. The course was open to anyone who had a language pair of English and Spanish and was interested in respeaking. Trainees did not need to be affiliated with the University of Vigo prior to the course. When the interlingual respeaking course began, ten trainees were enrolled; however, only seven trainees completed the course. Table 6.2 shows the professional background of each trainee. Trainees 4 and 6 had some respeaking experience as they also participated in the main experiment,<sup>15</sup> although they did not have as extensive experience as Trainees 5 and 7, who were professional intralingual respeakers for pre-recorded and live content. The trainees that have been deemed as professionals each had more than five years of experience. Detailed information on each

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<sup>14</sup> The webpage for the first edition of the course concerning the present chapter is no longer available. However, it was advertised similarly to the second edition, which can be viewed at <http://galmaobservatory.webs.uvigo.es/respeaking-course/>.

<sup>15</sup> Video 5 of the main experiment was also used as Video 2b of the interlingual respeaking module. Participant 4 respoke both videos and achieved an average accuracy rate of 98.59% in the main experiment and 99% in the interlingual respeaking module. The results show that they may have been at an advantage the second time they respoke the video.

participant, including their languages spoken, background, and individual performance are available in Appendix 9.

| <b>Trainee</b> | <b>Background</b>                                   |
|----------------|---|
| 1              | Professional interpreter                            |
| 2              | Professional interpreter                            |
| 3              | Professional audiovisual translator and interpreter |
| 4              | Translator and interpreter (student)                |
| 5              | Subtitler and intralingual respeaker                |
| 6              | Translator and interpreter (student)                |
| 7              | Professional subtitler and intralingual respeaker   |

Table 6.2: Trainees' professional background.

#### **6.2.4 Quality assessment**

For the interlingual respeaking module, a total of 50 texts were analysed, amounting to approximately 23,500 words and 100 hours of respeaking practice. The 50 interlingual texts (circa eight for each participant) were assessed with the NTR model (Romero-Fresco and Pöchhacker, 2017). An explanation of this model is available in Section 3.4.4.

#### **6.3 Quantitative results**

This section presents the quantitative results of the trainees' interlingual respeaking exercises completed throughout the course. A statistical analysis has not been carried out due to the small number of trainees and the incomplete data sets for some videos that were not respoken by all trainees. Instead, a descriptive analysis is provided for the trainees' performance. The following subsections outline the results of the five subtypes of translation errors, translation-error severity, recognition errors and their severity, and correct editions.

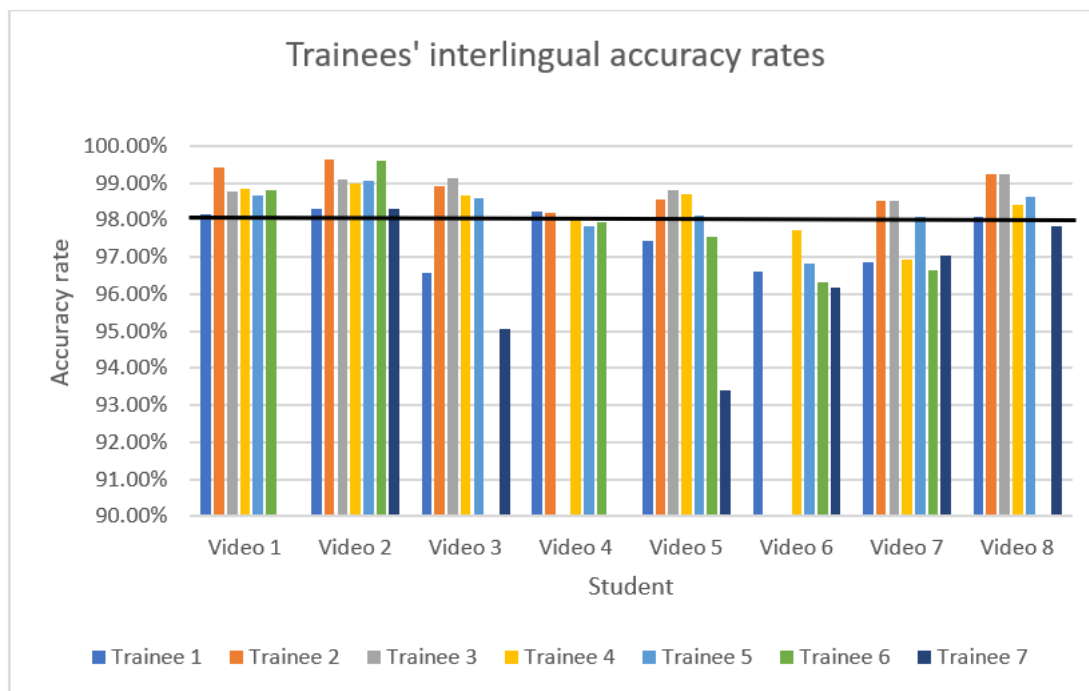


Figure 6.4: Trainees' interlingual accuracy rates.

### 6.3.1 Interlingual results

All eight videos in Table 6.1 were used for trainees to interlingually respeak from English into Spanish. Figure 6.4 shows the trainees' performance of each video respoken during the course, which trainees also completed an NTR analysis for. The black line highlights the 98% threshold for acceptable respoken live subtitles.

All seven trainees achieved at least 98% in Videos 1 and 2; this could be due to the fact that these videos were the easiest to respeak since they had simple content and short durations. Video 1 was also used in the pilot experiment, but only one participant reached 98% during the pilot experiment. The average number of translation and recognition errors in the pilot for Video 1 was 6.1 and 8.6, respectively, compared to 4.3 translation and 8.3 recognition errors per participant in the University of Vigo interlingual respoking module. For the pilot experiment, participants had only had one hour of training; the University of Vigo trainees, in contrast, had received eight weeks of SI training and eight weeks of intralingual respoking training. For the University of Vigo trainees, the number of errors in the same video appears to be significantly lower, highlighting the trainees' ability to perform better in both translation and recognition provided that they receive more training. All trainees reached 98% in Video 2, with some exceeding 99%, but when the complexity of the videos increased, the trainees'



accuracy rates decreased. Only Trainees 2 and 3 (a professional simultaneous interpreter and a professional audiovisual translator and interpreter) managed to achieve at least 98% in all eight videos.

Trainees 2, 3, 4, and 5 performed well in Videos 5 and 8. Although Video 5 had the highest speech rate at 185 wpm, it may have been easy to respeak because the content was available on-screen in the form of a weather map and it could be condensed or omitted without causing a loss of information. Video 8 had a lower speech rate, at 129 wpm, but the speech was pre-prepared and structured in a way that meant that the slightest omission or mistranslation ran the risk of causing a loss of information or changing the meaning. Video 8 of the University of Vigo course (the Michelle Obama speech) was very similar to Video 5 of the main experiment (the Emma Watson speech). After three weeks of training in the main experiment, the 44 participants achieved an average of 97.46% for Video 5. It is interesting that after 15 weeks of training, the University of Vigo trainees were able to respeak Video 8 with ease and achieved an accuracy rate of 98.50%. These results offer further insight into RQ2 ('Is good quality interlingual respeaking feasible across two languages?'), as more training allowed trainees to perform better.

#### **6.3.1.1 Translation errors**

Trainees made on average 2.6 translation errors in Video 1, 2.5 in Video 2a, 9.7 in Video 2b, 12.8 in Video 3, 16.2 in Video 4, 6.6 in Video 5, 20 in Video 6, 20.1 in Video 7, and 19.1 in Video 8. The difficulty of each video increased each week in terms of the genre, speech rate, delivery, and number of speakers. The most challenging videos were Videos 4–8, hence the increase in translation errors for these videos. Interestingly, for the main experiment, the highest number of form-correctness (form-corr) errors, which are grammatical errors, were made in Video 5, and the highest number of form-corr errors in the University of Vigo course were made in Video 8. This further highlights the similarity between the Emma Watson speech and the Michelle Obama speech and shows that more grammatical errors tend to be made in highly structured speeches.

|          | Cont-omiss | Cont-subs | Cont-add | Form-corr | Form-style | Total |
|----------|------------|-----------|----------|-----------|------------|-------|
| Video 1  | 0.5        | 0.6       | 0        | 1.5       | 0          | 2.6   |
| Video 2a | 0          | 0.5       | 1        | 0.5       | 0.5        | 2.5   |
| Video 2b | 4.4        | 2.3       | 0        | 2.7       | 0.3        | 9.7   |
| Video 3  | 7.9        | 3.5       | 0.3      | 0.8       | 0.3        | 12.8  |
| Video 4  | 12         | 2.2       | 0        | 1.8       | 0.2        | 16.2  |
| Video 5  | 4.3        | 1.3       | 0.3      | 0.4       | 0.3        | 6.6   |
| Video 6  | 14.1       | 3.5       | 0.7      | 1.5       | 0.2        | 20    |
| Video 7  | 15.8       | 2.2       | 0.3      | 1.7       | 0.1        | 20.1  |
| Video 8  | 11.8       | 3.8       | 0.7      | 2.3       | 0.5        | 19.1  |
| Average: | 7.9        | 2.2       | 0.5      | 1.5       | 0.3        | 12.2  |

Table 6.3: Trainees' average translation errors.

Figure 6.5 shows the distribution of the subtypes of translation errors for all trainees and videos. A large proportion of translation errors made were cont-omiss (66%) and cont-subs (18%), or in other words, mistranslations. The least common translation error was form-style.

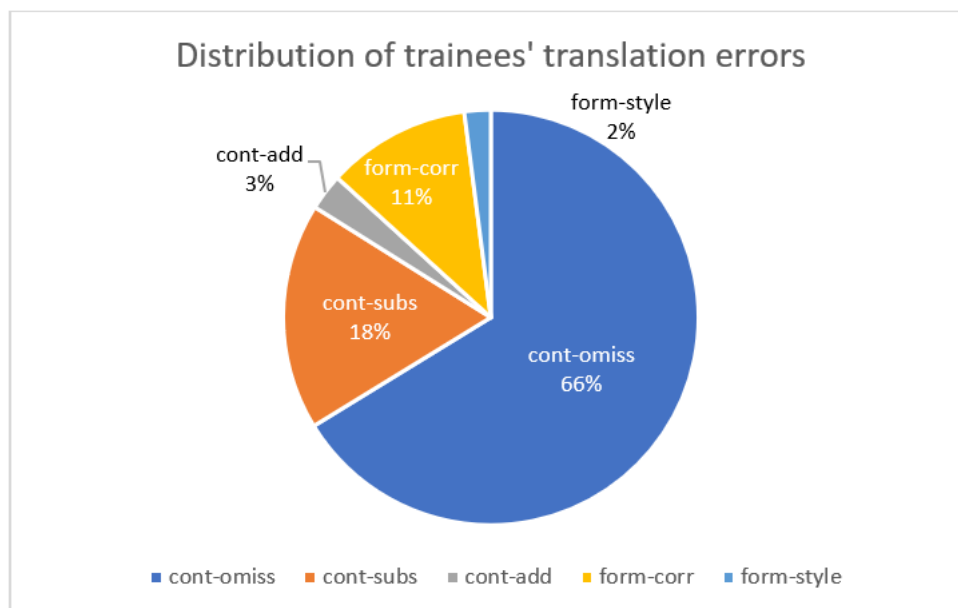


Figure 6.5: Distribution of trainees' translation errors.

The results in Figure 6.5 mirror those of the main experiment, in which participants also made more cont-omiss and cont-subs errors than any other errors but did not appear to struggle with cont-add or

form errors as much. For the main experiment, the most common translation errors made were cont-omiss (53%), followed by cont-subs (18%), form-corr (6%), cont-add (3%), and finally form-style errors (2%). It was suggested that training could include specific exercises to raise awareness of the different subtypes of translation errors. For the interlingual respeaking module, trainees were guided to focus on a specific subtype of translation error or recognition error each week. For example, trainees were given practical interlingual respeaking tasks and were asked to analyse the causes and consequences of their cont-omiss errors or cont-subs errors. The translation-error results for this module show that cont-omiss and cont-subs errors were still the most common errors, with a distribution of 66% and 18%, respectively. Form-corr (11%), cont-add (3%), and form-style (2%) errors, as in the main experiment, did not pose difficulties for trainees when respeaking. It appears that extensive training allowed trainees to practise live translation and obtain more accurate results. Cont-omiss is undoubtedly the most common translation error, which, after presenting the results of the interlingual respeaking module, may now seem more of an issue to train than it did before.

#### **6.3.1.1.1 Cont-omiss errors**

Trainees made more minor cont-omiss errors than major cont-omiss errors, and more major errors than critical. This shows that trainees' strengths lie in omitting small pieces of information rather than whole sentences. In the main experiment, there was no correlation between the speech rate and number of cont-omiss errors made. The University of Vigo trainees did not omit much information at all when respeaking videos with low speech rates, such as Videos 1, 2a, and 2b. However, they did omit more information when faced with videos with higher speech rates and more challenging content. Out of the three videos with the highest speech rates (Video 4 at 183 wpm, Video 5 at 185 wpm, and Video 7 at 190 wpm), Videos 4 and 7 had two of the highest numbers of cont-omiss errors. Videos with the most challenging vocabulary (Video 3 due to its proper nouns, Video 4 due to its meteorological terminology, and Video 6 due to the uncommon ingredients) also had high numbers of cont-omiss errors, with 7.9, 12, and 14.1, respectively. Dealing with more than one speaker (Videos 3, 4, 6, and 7) also seems to have impacted the number of cont-omiss errors, as Videos 4, 6, and 7 had the highest number of these errors.

|          | <b>Minor</b> | <b>Major</b> | <b>Critical</b> | <b>Total</b> |
|----------|--------------|--------------|-----------------|--------------|
| Video 1  | 0.5          | 0            | 0               | 0.5          |
| Video 2a | 0            | 0            | 0               | 0            |
| Video 2b | 2.7          | 1.7          | 0               | 4.4          |
| Video 3  | 4.7          | 3            | 0.2             | 7.9          |
| Video 4  | 7            | 5            | 0               | 12           |
| Video 5  | 2.7          | 1.6          | 0               | 4.3          |
| Video 6  | 7.8          | 6.3          | 0               | 14.1         |
| Video 7  | 8.4          | 7.4          | 0               | 15.8         |
| Video 8  | 8.8          | 2.8          | 0.2             | 11.8         |
| Average: | 4.7          | 3            | 0.04            | 7.7          |

Table 6.4: Trainees' cont-omiss errors.

Different genres, challenging content, and varying speech rates could be used in interlingual respeaking training to ensure that trainees gain experience in respeaking diverse audiovisual material; these challenges may also help students to spot patterns in text types that are the most difficult to control cont-omiss errors in. Self-assessment of respeaking exercises may also help trainees to understand where and why they omit information.

#### **6.3.1.1.2 Cont-subs errors**

Trainees made substantially fewer cont-subs errors (18%) than cont-omiss errors (66%), which shows that one of their strengths lies in respeaking accurate content. The difference is greater than that between the errors for the main experiment, with a distribution of 33% and 53%, respectively. This could be because the University of Vigo trainees practised live translation by carrying out SI exercises for eight weeks prior to interlingual respeaking along with their further practice of transferring meaning in the eight-week intralingual respeaking module. Unsurprisingly, more training allows trainees to produce more accurate live translations. However, the high number of cont-omiss errors made shows that, in producing accurate live translations, cont-subs errors could occur. For the main experiment, participants made on average 5.8 cont-subs errors per video, and for the University of Vigo course, trainees made on average 2.2 cont-subs errors per video, showing that they did not struggle as much to produce an accurate live translation. The videos with the highest number of cont-subs errors (Videos 3, 6, and 8) could have been more challenging than the others due to the specific knowledge required in football for

Video 3 and in cookery for Video 6. The structured and pre-prepared nature of Video 8 meant that the slightest mistranslation could modify the meaning of the TT.

|          | <b>Minor</b> | <b>Major</b> | <b>Critical</b> | <b>Total</b> |
|----------|--------------|--------------|-----------------|--------------|
| Video 1  | 0.3          | 0            | 0.3             | 0.6          |
| Video 2a | 0.5          | 0            | 0               | 0.5          |
| Video 2b | 1.3          | 0            | 1               | 2.3          |
| Video 3  | 2.5          | 0.8          | 0.2             | 3.5          |
| Video 4  | 2            | 0.2          | 0               | 2.2          |
| Video 5  | 0.6          | 0.4          | 0.3             | 1.3          |
| Video 6  | 2            | 0.8          | 0.7             | 3.5          |
| Video 7  | 1            | 0.3          | 0.9             | 2.2          |
| Video 8  | 2.5          | 1            | 0.3             | 3.8          |
| Average: | 1.4          | 0.4          | 0.4             | 2.2          |

Table 6.5: Trainees' cont-subs errors.

Similar to cont-omiss errors, diverse audiovisual material could also help to train cont-subs errors. Specific exercises that target SL comprehension, condensation, and reformulation may also help trainees to avoid mistranslating text and to work on including text to convey the same meaning. A higher average number of cont-omiss errors (7.7) compared to cont-subs errors (2.2) may suggest that trainees omit information they do not understand or cannot translate live instead of risking an inaccurate translation.

#### **6.3.1.1.3 Cont-add errors**

As in the main experiment, cont-add errors did not pose a difficulty for trainees when respeaking. Given the fact that respeakers must work quickly in order to keep up with the ST and produce an accurate live TT, cont-add errors were uncommon, as the respeaker does not have time to add text. Out of the 18 cont-add errors made in the videos, 14 were made by Trainee 7 who tended to summarise each idea (occasionally introducing new content) instead of only translating what they heard. Due to these results, conclusions cannot be drawn from a comparison of the videos.

|          | Minor | Major | Critical | Total |
|----------|-------|-------|----------|-------|
| Video 1  | 0     | 0     | 0        | 0     |
| Video 2a | 1     | 0     | 0        | 1     |
| Video 2b | 0     | 0     | 0        | 0     |
| Video 3  | 0.2   | 0.2   | 0        | 0.4   |
| Video 4  | 0     | 0     | 0        | 0     |
| Video 5  | 0.3   | 0     | 0        | 0.3   |
| Video 6  | 0.5   | 0     | 0.2      | 0.7   |
| Video 7  | 0.3   | 0     | 0        | 0.3   |
| Video 8  | 0.5   | 0.2   | 0        | 0.7   |
| Average: | 0.3   | 0.04  | 0.02     | 0.4   |

Table 6.6: Trainees' cont-add errors.

Cont-add errors could be linked to cont-subs errors, as both could have resulted from poor SL comprehension. However, more research may be required to identify where in a text and why resparkers add information. The average number of cont-add errors (0.4) suggests that trainees do not attempt to, nor do they have time to, respeak additional text.

#### 6.3.1.1.4 Form-corr errors

No major or critical form-corr errors were made whatsoever, which shows that making grammatical errors while resparking is uncommon. The most minor form-corr errors were made in Video 2b (the Emma Watson speech) and Video 8 (the Michelle Obama speech). This suggests that form-corr errors could be characteristic of a particular type of video, such as pre-prepared, structured speeches.

|          | Minor | Major | Critical | Total |
|----------|-------|-------|----------|-------|
| Video 1  | 1.5   | 0     | 0        | 1.5   |
| Video 2a | 0.5   | 0     | 0        | 0.5   |
| Video 2b | 2.7   | 0     | 0        | 2.7   |
| Video 3  | 0.8   | 0     | 0        | 0.8   |
| Video 4  | 1.8   | 0     | 0        | 1.8   |
| Video 5  | 0.4   | 0     | 0        | 0.4   |
| Video 6  | 1.5   | 0     | 0        | 1.5   |
| Video 7  | 1.7   | 0     | 0        | 1.7   |
| Video 8  | 2.3   | 0     | 0        | 2.3   |
| Average: | 1.6   | 0     | 0        | 1.6   |

Table 6.7: Trainees' form-corr errors.

Although form-corr errors are the third most common translation error, they have a low average of 1.6 errors per video per trainee. This suggests that trainees strengths also lie in producing grammatically correct respoken texts. As form-corr errors appear to be characteristic of pre-prepared speeches, there may be reason to train respeakers on how to avoid them when respeaking this type of content. Speeches of varying levels of difficulty could be used in training to allow trainees to practise transferring grammar from one language to another under different conditions. It may also prove useful to include punctuation exercises to avoid poor grammar in respoken texts.

### 6.3.1.1.5 Form-style errors

No major or critical form-style errors were made throughout the University of Vigo course. These results are similar to those of the main experiment and show that form-style errors do not cause any difficulty for respeakers. The occasional form-style error was made due to a change in register between the ST and the TT or the appropriateness of vocabulary.

|          | Minor | Major | Critical | Total |
|----------|-------|-------|----------|-------|
| Video 1  | 0     | 0     | 0        | 0     |
| Video 2a | 0.5   | 0     | 0        | 0.5   |
| Video 2b | 0.3   | 0     | 0        | 0.3   |
| Video 3  | 0.3   | 0     | 0        | 0.3   |
| Video 4  | 0.2   | 0     | 0        | 0.2   |
| Video 5  | 0.3   | 0     | 0        | 0.3   |
| Video 6  | 0.2   | 0     | 0        | 0.2   |
| Video 7  | 0.1   | 0     | 0        | 0.1   |
| Video 8  | 0.5   | 0     | 0        | 0.5   |
| Average: | 0.3   | 0     | 0        | 0.3   |

Table 6.8: Trainees' form-style errors.

Much like cont-add errors, the low average number of form-style errors (0.3) suggests that trainees do not attempt to change the register of the text. It may be sufficient to make trainees aware of this translation error without requiring any specific training to avoid them, as it appears to be a common strength between participants and trainees.

### 6.3.1.2 Translation error severity

Trainees made more minor errors than major errors and more major errors than critical errors for all five subtypes of translation errors. Uncommon translation errors, such as cont-add, form-corr, and form-style had either a very low amount or no instances of major or critical translation errors.

|          | Cont-omiss | Cont-subs | Cont-add | Form-corr | Form-style | Total |
|----------|------------|-----------|----------|-----------|------------|-------|
| Minor    | 4.7        | 1.4       | 0.3      | 1.6       | 0.3        | 8.3   |
| Major    | 3          | 0.4       | 0.04     | 0         | 0          | 3.4   |
| Critical | 0.04       | 0.4       | 0.02     | 0         | 0          | 0.5   |

Table 6.9: Translation error severity by translation error.

Out of those with extensive professional SI experience (Trainees 1, 2, and 3), Trainees 2 and 3 obtained very similar results in terms of error severity. The vast majority of their errors were minor errors, which indicates that their errors did not have a big impact on the text, as, more often than not, they could be recognised or did not cause a loss of information. Trainees 4 and 6 had a similar background as recent graduates of Translation and Interpreting at postgraduate level. They performed similarly, but not as well as those with substantial professional experience. Most of their errors were minor and they made twice as many major errors as Trainees 2 and 3 did. Trainees 5 and 7 had similar backgrounds as subtitlers and intralingual respeakers, but they performed quite differently. Trainee 5 made the third-highest number of minor translation errors, and Trainee 7 made the most. Trainee 7 made almost double the amount of major translation errors compared to Trainee 5.

| Trainee | Minor | Major | Critical |
|---------|-------|-------|----------|
| 1       | 12.8  | 4     | 0.9      |
| 2       | 4.3   | 1.6   | 0.1      |
| 3       | 4.5   | 1.2   | 0.2      |
| 4       | 7.4   | 3.1   | 0.3      |
| 5       | 9.3   | 4.9   | 0.5      |
| 6       | 6.5   | 3.8   | 0.2      |
| 7       | 13.3  | 8.5   | 0.7      |

Table 6.10: Translation error severity by trainee.

Potential reasons as to why some trainees performed better than others are detailed in Section 6.3.1.7.



### 6.3.1.3 Recognition errors

Various factors could affect recognition errors, such as the hardware or the characteristics of the audiovisual material. In terms of hardware, the quality of the microphone being used can greatly affect recognition quality. At the beginning of the course, some trainees attempted to respeak using the built-in microphone in their computer or laptop, which resulted in many unrecognised words. Audiovisual material can also play a part in recognition quality, as higher speech rates require a respeaker to respeak faster to keep up with the ST. The video with the lowest speech rate (Video 2a, at 101 wpm) had the lowest number of recognition errors (16), and the video with the highest speech rate (Video 7, at 190 wpm) had the highest number of recognition errors (95). The duration of the video clip could also affect the number of recognition errors made in each clip, as the more time a trainee respokes for, the more recognition errors could be made. Having said that, Video 2a has a duration of 00:02:04, and Video 7 has a duration of 00:04:03. Complex terminology and ideas (as seen in Videos 3, 4, 6, and 8) may also slow the respeaker down as they try to think of the most accurate and appropriate translation; they will, therefore, need to catch up with the text, resulting in faster dictation and potentially more recognition errors. Dealing with multiple speakers (as seen in Videos 3, 4, 6, and 7) could also cause recognition errors if the custom macro used to identify different speakers fails.

|          | <b>Minor</b> | <b>Major</b> | <b>Critical</b> | <b>Total</b> |
|----------|--------------|--------------|-----------------|--------------|
| Video 1  | 36           | 2            | 0               | 38           |
| Video 2a | 13           | 3            | 0               | 16           |
| Video 2b | 27           | 4            | 1               | 32           |
| Video 3  | 37           | 11           | 5               | 53           |
| Video 4  | 38           | 4            | 1               | 43           |
| Video 5  | 15           | 6            | 0               | 21           |
| Video 6  | 38           | 6            | 2               | 46           |
| Video 7  | 82           | 11           | 2               | 95           |
| Video 8  | 80           | 5            | 0               | 85           |
| Average: | 63.3         | 5.7          | 1.2             | 70.2         |

Table 6.11: Recognition errors by video.

Trainee 1 made the highest number of recognition errors, which could have been caused by their microphone and environment. Trainee 1 tried to respeak using the built-in microphone in their laptop and could not always work in an environment with no background noise. Throughout the course, Trainee 4 maintained a particular dictation style that generally had a good pace and volume but at times was

too loud and harsh. It can be seen from the Screencast recordings that a harsh dictation style contributed to unnecessary recognition errors. Trainee 5's recognition results were outstanding, as they made an average of 1.9 recognition errors per video and made no recognition errors whatsoever in Videos 5 and 7. Trainee 5 noted that during the interlingual respeaking module they also practised intralingual respeaking in order to further train their voice profile without the added complexity of a language transfer. When Trainee 5 did make a recognition error, they usually corrected it successfully. However, at times, this led to cont-omiss errors, as the trainee sometimes struggled to keep up with the text after having corrected a recognition error. Trainee 7 made a high number of recognition errors due to hesitations. Trainee 7 proved to be a strong intralingual respeaker but showed signs of struggling to produce a live translation. This difficulty led to the trainee hesitating while trying to find the best way of translating the ST.

| <b>Trainee</b> | <b>Minor</b> | <b>Major</b> | <b>Critical</b> | <b>Total</b> |
|----------------|--------------|--------------|-----------------|--------------|
| 1              | 11.8         | 1.8          | 0.6             | 14.2         |
| 2              | 7.4          | 1            | 0.1             | 8.5          |
| 3              | 6.8          | 1.2          | 0               | 8            |
| 4              | 9.6          | 1            | 0.4             | 11           |
| 5              | 1.5          | 0.3          | 0.1             | 1.9          |
| 6              | 5.3          | 1.2          | 0               | 6.5          |
| 7              | 8.5          | 1            | 0.2             | 9.7          |
| Average:       | 6.2          | 1            | 0.2             | 6            |

Table 6.12: Recognition errors by trainee.

Although the sample sizes are not comparable, the results are as expected. Results indicate that more dictation and respeaking training resulted in trainees having more accurate voice profiles, therefore, fewer recognition errors; in turn, this may have contributed to the increased accuracy rates of the University of Vigo trainees.

The observations detailed in this section may highlight the importance of three aspects when it comes to training recognition: hardware, practice, and live-error correction. First, the correct or incorrect use of hardware can greatly affect the recognition results, as trainees using built-in microphones that pick-up background noise did not perform well in terms of recognition. Second, trainees who carried out extensive dictation practice were not only able to dictate clearly but also to maintain good pace and volume, which may have allowed for them to relax more than those with a harsher dictation style. Third,

those who were able to carry out live error correction tended to be more competent respeakers who were able to improve the quality of their respoken texts by correcting errors and developing a good dictation style.

#### **6.3.1.4 Recognition error severity**

More minor recognition errors (90%) were made than major errors (8%), and more major errors were made than critical errors (2%). The distribution of error severity in the main experiment is 68% minor errors, 30% major errors, and 2% critical errors. The results of the University of Vigo course and the main experiment suggest that critical recognition errors do not pose many problems when respeaking; this could be due to the unlikeliness of various factors occurring together, such as a recognition error appearing on-screen, making sense, and introducing misleading information. The difference in distribution of minor and major errors is significant. In the main experiment, trainees only had four weeks of training their voice profiles and did not attempt to make live error corrections; this appears to have resulted in a high percentage of major errors (30%) and fewer minor errors (68%). In the University of Vigo course, trainees had eight weeks to train their voice profiles through dictation and intralingual respeaking exercises and a further eight weeks of interlingual respeaking, which would have no doubt contributed to more accurate voice profiles. In Module 3, the University of Vigo trainees started to make live error corrections using voice commands and the keyboard to reduce the amount of recognition errors made. As minor recognition errors can be recognised by an audience, trainees were encouraged to only correct major or critical errors due to the impact that they can have on a respoken text. Extensive voice profile training and practising live-error correction appears to have made a difference to performance and both require a certain amount of time devoted to them in training for them to eventually become a respeaker's strength.

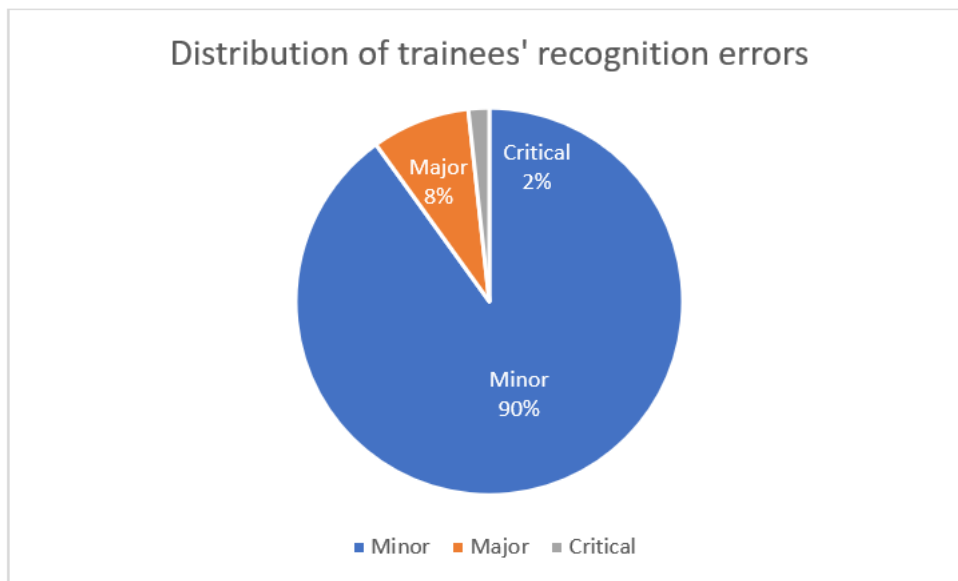


Figure 6.6: Distribution of trainees' recognition errors.

#### **6.3.1.5 Effective editions**

Similar to the pattern in recognition errors, the video with the lowest speech rate (Video 2a, at 101 wpm) had the lowest number of effective editions, and the video with the highest speech rate (Video 7, at 190 wpm) had the highest average number of effective editions. For the remaining videos, the speech rate and effective editions seem to be loosely correlated, as trainees made fewer effective editions in videos with low speech rates. This could be due to the fact that trainees would have been able to keep up with a low speech rate and would not have needed to edit, condense, or omit much information. However, higher speech rates have led to more effective editions being made, possibly due to trainees needing to condense text in order to keep up with it. As explained in Chapter 5, if a respeaker edits, condenses, or omits text and does not cause a loss of information, it would be scored as an effective edition so as to acknowledge that the text has been edited well. If such omissions do cause a loss of information, they are penalised as an omission error. The top three videos with low numbers of cont-omiss errors (Videos 1, 2a, and 2b) also had low numbers of effective editions. The three videos with the highest numbers of cont-omiss errors (Videos 6, 7, and 8) had the highest numbers of effective editions made.

|          | <b>Cont-omiss</b> | <b>Effective editions</b> |
|----------|-------------------|---------------------------|
| Video 1  | 3                 | 14                        |
| Video 2a | 0                 | 4                         |
| Video 2b | 13                | 6                         |
| Video 3  | 47                | 15                        |
| Video 4  | 60                | 23                        |
| Video 5  | 30                | 13                        |
| Video 6  | 85                | 41                        |
| Video 7  | 111               | 68                        |
| Video 8  | 71                | 27                        |
| Average: | 46.7              | 23.4                      |

Table 6.13: Trainees' effective editions.

Trainees were introduced to the NTR model and carried out various quality assessment exercises with their own respoken texts, so they were aware of the differences between omitting text and editing or condensing text. However, some effective editions may not have been made on purpose by trainees. Trainees may have omitted text (which was coincidentally unnecessary), meaning that some purposeful omissions caused by not being able to keep up with the ST or misunderstanding the ST could have been interpreted as effective editions. These results indicate that as participants' worked through the interlingual respeaking exercises, they were able to make more effective editions, which suggests that their strengths also lie in being able to reduce the amount of text they respeak while not causing loss of information. Being able to do this not only requires an understanding of the NTR model, but also the ability to think quickly to make decisions about what to include, condense or remove from the respoken text.

#### **6.3.1.6 Distribution of translation and recognition errors**

Table 6.14 shows the distribution of translation and recognition errors for the University of Vigo trainees for each video. The overall distribution of the University of Vigo module is 56% translation errors and 44% recognition errors. These results are similar to the main experiment, of which the distribution was 52% translation errors and 48% recognition errors. There does not appear to be any correlation between the speech rate and number of recognition errors. However, the most complex videos in terms of

content, terminology, and number of speakers appear to have resulted in higher percentages of translation errors.

| Video    | Translation errors | Recognition errors |
|----------|--------------------|--------------------|
| Video 1  | 34%                | 66%                |
| Video 2a | 39%                | 61%                |
| Video 2b | 49%                | 51%                |
| Video 3  | 57%                | 43%                |
| Video 4  | 66%                | 34%                |
| Video 5  | 69%                | 31%                |
| Video 6  | 72%                | 28%                |
| Video 7  | 59%                | 41%                |
| Video 8  | 58%                | 42%                |
| Overall  | 56%                | 44%                |

Table 6.14: Distribution of translation and recognition errors.

Translation and recognition errors are equally challenging and should be treated as such in interlingual respeaking training. Although trainees would complete an initial dictation and software management module to train their voice profile and learn how to use the software, attention should not completely shift to only dealing with translation errors in an interlingual respeaking module. Rather, it seems that encouraging trainees to continuously train their voice profile and create custom commands brings positive results.

### **6.3.1.7 Analysis of overall interlingual performance**

To give a brief overview of performance, the University of Vigo trainees achieved an overall average accuracy rate of 98% (5/10), with an average of 12.2 translation errors and 6 recognition errors per trainee per video. Concrete conclusions cannot be drawn from the profile of each trainee due to the small sample sizes. It is difficult to distinguish as to whether those with more interpreting or more subtitling experience performed better or worse, but some conclusions can be drawn on what good performers did and what poor performers were lacking in.

Two out of the three professional SI interpreters (Trainees 2 and 3) performed similarly in translation, as they made an average of 4.3 and 4.5 minor errors, 1.6 and 1.2 major errors, and 0.1 and 0.2 critical

errors, respectively. In terms of recognition, Trainee 3 performed slightly better as they made fewer minor recognition errors, with a difference of  $-0.6$ . However, Trainees 2 and 3 performed similarly in major recognition errors (with averages of 1 and 1.2, respectively) and critical errors (with averages of 0.1 and 0, respectively). The difference in the overall accuracy rates between Trainees 2 and 3 was minimal as Trainee 2 achieved 98.90% and Trainee 3 achieved 98.93%. The difference of  $-0.03\%$  could be because Trainee 3 made fewer minor recognition errors. Through observation of the Screencast recordings, it can be seen that both trainees managed to maintain clear dictation and a steady pace and to explore the use of custom commands and produce fast live translations. The remaining professional SI interpreter (Trainee 1), appeared to find the SR software off-putting when producing a live translation. Trainee 1 made 12.8 minor, 4 major, and 0.9 critical translation errors, which is a substantial amount compared to the other SI interpreters. Trainee 1 also made the highest number of recognition errors compared to the rest of the University of Vigo trainees, with total averages of 11.8 minor, 1.8 major, and 0.6 critical recognition errors. At the beginning of the module, the trainee attempted to dictate using the built-in microphone on their laptop instead of using a headset. The issue with the hardware combined with the trainee not always being able to work in a silent environment may have resulted in a higher number of recognition errors. The trainee reported that monitoring their respoken output on-screen with so many errors was distracting, which could have in turn affected their live translation performance.

The translation and interpreting postgraduate trainees (Trainees 4 and 6) performed similarly and achieved accuracy rates of 98.29% and 97.81%, respectively. The qualitative data shows that Trainee 6 performed better in both translation and recognition errors, with a total average of  $-0.3$  fewer translation errors and  $-4.5$  fewer recognition errors than Trainee 4. However, Trainee 6 only completed six out of the eight interlingual respoking exercises and did not participate in class discussions or submit an NTR analysis for all of the exercises that they completed. In comparison, Trainee 4 completed all interlingual respoking exercises, actively participated in class discussions, shared recordings of interlingual respoking practices with classmates, and practised respoking outside of the course. Therefore, the contrast in these two trainees' results could have been caused by the fact that one thoroughly engaged in the course and the other did not engage at all.

The results of Trainees 5 and 7 show that trainees with similar backgrounds do not necessarily perform similarly. Both trainees had professional backgrounds as subtitlers and intralingual respokers, but

Trainee 5 performed notably better than Trainee 7. In terms of the accuracy rate, Trainee 5 obtained 98.22% overall, whereas Trainee 7 obtained 96.30% overall. For translation errors, Trainee 5 made -4 fewer minor, -3.6 fewer major and -0.2 fewer critical translation errors compared to Trainee 7. Although neither trainee had previous SI experience, it appears that Trainee 5 was able to manage a live translation. Trainee 5 demonstrated excellent ST listening comprehension and condensation skills as well as the ability to translate the text accurately. Once the trainees were familiarised with the NTR model, Trainee 5 understood the difference between cont-omiss errors and effective editions and used this to their advantage when deciding what text to include, substitute, or omit to keep up with the speed of the ST. Trainee 7 struggled to produce an accurate live translation and had high numbers of cont-omiss, cont-subs and cont-add errors compared to other trainees. Trainee 7 frequently made long pauses when respeaking, as they were not able to keep up with the ST. It seems that they did not have very strong ST comprehension skills, as they often summarised ideas as well as added content and misleading information. In terms of recognition errors, Trainee 5 dictated at great speed and was able to maintain a slightly robotic and steady tone. The trainee reported that they carried out intralingual respeaking practice of their own accord alongside the interlingual respeaking module; they believed that this helped them to develop their multitasking and dictation skills without the complexity of also having to deal with the language transfer that interlingual respeaking requires. This resulted in Trainee 5 making the lowest number of recognition errors out of all the trainees. Trainee 7 made on average 7.8 more recognition errors than Trainee 5. The Screencast recordings show that Trainee 7 frequently hesitated when respeaking, which resulted in unclear dictation and a high number of recognition errors.

Trainees' individual results seem to suggest that translation and recognition errors go hand in hand. Trainee 1 found it difficult to monitor their output on-screen with so many recognition errors, so they were unable to concentrate on producing a live translation and, therefore, made a higher number of translation errors. Trainee 7 struggled to produce a live translation at speed, which caused them to hesitate and resulted in a high number of recognition errors. Although this has only been observed with two trainees, these results may indicate that a lack of translation skills can affect the number of recognition errors and a lack of dictation skills can have an impact on the quality of the translation produced.

Throughout the module, trainees were advised to watch the videos once before respeaking them in order to decide whether they would need to train Dragon with any specific vocabulary or create macros



to deal with challenges such as proper nouns or multiple speakers. Even though respeakers in a professional environment would not be able to view the content before respeaking it, this process proved to be beneficial to trainees, as each week they were able to carry out essential tasks for the pre-process stage by researching terminology, content, and preparing the SR software. For Video 8, trainees were advised to not watch the video before respeaking it. Instead, they were provided with a brief list of vocabulary to train the SR software with and were reminded that they could use any custom commands they had created during Modules 2 and 3. The overall average accuracy rate for Video 8 was 98.50%. Out of seven trainees, six completed the video, five of whom reached a 98% accuracy rate while one reached 97.83%. Some trainees felt as though the adrenaline of not having watched the video before was useful when respeaking and that it contributed to their good performance in the test video.

#### **6.4 Qualitative results**

At the end of the interlingual respeaking module, trainees completed a module feedback questionnaire (Appendix 8) that aimed to gather information on their views of the usefulness of course resources and their exposure to them, course content they would like to see in an interlingual respeaking course in the future, whether there was anything missing from the course, the performance strengths and weaknesses as an interlingual respeaker and, finally, their views on the challenges, task-specific skills, and best-suited professional profile for an interlingual respeaker. This section presents the qualitative results of the trainees' class discussions on the online forum as well as the questionnaire responses and provides a final insight on the trainees' views of interlingual respeaking training. Not all trainees completed the feedback questionnaire; therefore, this analysis is largely based on responses from Trainees 1, 3, 4, 5, and 7.

##### **6.4.1 Self-assessed performance of the trainees**

On a scale of 'excellent', 'good', 'satisfactory', and 'poor', trainees were asked to rate how well they think they performed as an interlingual respeaker. One trainee rated their performance as halfway between good and excellent due to having encountered certain hurdles with software and hardware that complicated their use of the SR software. Three trainees rated their performance as good, and one

stated that they had developed good dictation and recognition and had greatly improved their SI ability. They also noted that they still needed more practice but are very confident that they have the skills and abilities required to continue interlingual respeaking. Another stated that they had definitely felt an improvement due to having learnt a lot, but they also noted there is a lot more work to do to keep improving in interlingual respeaking. The final trainee that rated their performance as good noted that after weeks of work, and despite what is still left to be learnt, they were capable to respeak videos with specialised content and high speech rates and were able to maintain rhythm and produce texts that make complete sense. When comparing trainees' views on their performance against their actual performance, it can be seen that they were mostly aware of how well they fared. Those who thought that they had performed excellent or good, did in fact consistently achieve accuracy rates above 98%. Only one trainee perceived their performance as good but actually performed poorly.

Some trainees noted that their strengths were dictating clearly, ensuring the TT made sense by always finishing sentences, and having a strong knowledge of language and culture that helped to manage the ST and appropriately transfer it to the TT. Dictation also came up when trainees discussed their weaknesses, their reasons were that concentrating on maintaining a pace can be challenging when also trying to dictate clearly for Dragon and that they were not used to using technical software. Others noted weaknesses, such as having a lack of SI experience and lack of confidence to carry out the task.

#### **6.4.2 Resources for training**

Trainees were asked to rank the resources in the interlingual respeaking module from most useful to least useful (1 being the lowest and 5 being the highest). Trainees deemed the videos for respeaking practice to be the most useful resource; this is due to the necessity of this resource, as without it, trainees would not have been able to complete the interlingual respeaking exercises. The challenge of respeaking different genres of TV and live events was appealing to trainees due to the variety of content and the freedom trainees were given to work on different videos. Videos for reference were also highly rated as being useful; these videos consisted of various live subtitling methods, professionals respeaking, and Screencast recordings of trainee exercises that were shared with the others when trainees demonstrated very good performance. The trainees found academic publications and conference presentations that dealt with different aspects of interlingual respeaking to be useful.

However, some trainees found the conference presentations difficult to follow when they did not contain notes within the PowerPoints. Trainees deemed the most important resource to be feedback and noted the usefulness of the specific and personalised feedback that they received with practical examples of other trainees respeaking exercises that were shared with the group. Trainees favoured the heterogeneity of the group as it allowed them to explore and interchange different points of view of interlingual respeaking as well as share strategies with one another.

When asked about the most useful exercise for the interlingual respeaking module, trainees had the following interesting views:

*'Respeaking a variety of videos followed by an NTR analysis. The analysis helps you visualise areas for improvement';*

*'Respeaking videos after watching them once and preparing vocabulary in Dragon';*

*'I think it's best to start practicing with short and simple speeches to then slowly increase their duration and complexity. I also think it's greatly useful to spend time training the software because it visibly improves results'.*

Trainees were asked to rate their exposure to the various units of module content on a scale of being 'just right', 'enough', or 'not enough'. Trainees found the exposure to academic publications and conference presentations, videos for reference and practice to be just right. Some trainees would have liked more engagement with others via the online forum in the form of live online conversations, perhaps in a webinar format, so as to be able to clarify software issues, help other trainees with their questions, and to generally have more communication with peers. Some trainees found working with Dragon to be stressful, and others felt lost in terms of creating custom commands to facilitate the respeaking process. For training, a list of custom commands to train Dragon to better recognise words and to create sound labels and speaker identification may be beneficial. Many trainees found the custom commands helpful; for example, one trainee managed to speed up the process of changing speakers while respeaking by introducing a macro that started a new line with a hyphen every time the respeaker dictated 'change' in English.

One trainee noted that the module may have been too short and that 10 to 12 weeks of interlingual respeaking practice would have been better than eight weeks. In hindsight, given the importance that

length of training has in connection with feasibility, trainees could have been asked whether the course needed to be shorter, longer, or if it was just the right length.

### **6.4.3 Main challenges and task-specific skills for interlingual respeaking**

During an online discussion about the potential challenges in a professional environment, one trainee commented that the challenges an interlingual respeaker faces could change with each project, as various elements are taken into consideration, such as whether the job requires the respeaker to work with a live TV broadcast or a live event, the language combination, audience needs, etc. Some trainees noted that the job of an interlingual respeaker could, at times, be a lonely one. Although respeakers can work in teams, when one respeaker is working on a live broadcast or event, not a lot can be done to support them aside from live-error correction. Therefore, respeakers usually have to face the challenge of managing the stress of the task alone.

Interestingly, one trainee noted that raising awareness about the existence of interlingual respeaking as a profession is a challenge even as this method of live subtitling is becoming a feasible alternative to the combination of SI and intralingual respeaking. Another trainee recognised that interlingual respeaking is still in its infancy, and that the biggest challenge is ensuring that interlingual respeaking becomes a feasible method of live subtitling; they also noted that training in interlingual respeaking is a fundamental step towards making that happen. Such a broad range of challenges further highlights the complexity of the interlingual respeaking task and developing the new profession of an interlingual respeaker.

In terms of the task-specific skills, trainees noted multitasking, split-attention, having good knowledge of both languages, general knowledge, live translation, and memory. The multitasking aspect of the task proved to be a challenge in many ways. Some trainees noted that the added task of having to monitor the output on-screen was similar to dealing with three texts simultaneously: one text to listen to, the respoken text (spoken), and the on-screen text (written). Others noted characteristics such as the ability to remain focussed, think quickly, and work under pressure as well as creativity. Some trainees made interesting comments regarding the task-specific skills:

*'Remaining calm under pressure. I had it thanks to my interpreter profile, but the stress is different as a respeaker';*

*'Capacity to keep adjusting and trying new solutions (e.g. commands, dictation) to achieve better outcomes. Split attention is another skill I have developed during the course, which is very important in interlingual respeaking';*

*'The subtle art of making pauses to release text on-screen, despite not being a natural pause in speech and trying to speak more robotically';*

*'I have tried to train the software as much as I can, and this has helped me to achieve better results. I have also made more commands, which has allowed me at times and with dense text to pay more attention to the content and not the form';*

*'Focussing on the tasks and not stopping or thinking too much about what has already been respoen and enunciated. And interpreting together with Dragon is becoming much more natural'.*

Both the quantitative and qualitative data concerning the task-specific skills were used to outline the importance of each skill and use them to develop a training course. Each skill has been outlined in Section 8.2.

#### **6.4.4 Best-suited professional profile for interlingual respeaking**

Trainees had slightly mixed views on the best-suited professional profile for an interlingual respeaker. Trainee 1 (a professional interpreter) and Trainee 3 (an audiovisual translator and interpreter) both deemed the best-suited professional profile to be an interpreter. Trainee 4 (translation and interpreting trainee) and Trainee 5 (a subtitler and intralingual respeaker) thought that the best-suited profile would be a mix of interpreting and intralingual respeaking. Trainee 7 (a subtitler and intralingual respeaker) thought that a mix of subtitling and intralingual respeaking experience would be ideal.

Those with previous interpreting experience felt that their experience helped them with interlingual respeaking but that having to relearn certain skills, such as speaking in a robotic, steady tone instead of a pleasant one and breaking up speech with pauses to release words, proved challenging. Participants with no prior SI training to the course found that the skills they had learned in module 1 were the most beneficial for interlingual respeaking. Trainees with previous subtitling experience found that their subtitling background helped them with pauses while respeaking, as they were able to break the text up into logical chunks to release on screen. One trainee with a subtitling background mentioned

that they found it helpful to picture punctuation in their head before dictating it, which they had already learnt as a method of speeding up their subtitling practice.

It appears that interpreting, subtitling and intralingual respeaking backgrounds are desired for the similar aspects also required for interlingual respeaking. Although a best-suited professional profile has not been identified, the most important aspect for training is the development of the task-specific skills for interlingual respeaking and the skills that trainees lack from previous experience.

### **6.5 Informing an interlingual respeaking training model**

The following points highlight how the findings of this interlingual respeaking module can inform the creation of training for interlingual respeaking:

- Guiding trainees to focus on a specific subtype of translation or recognition error each week allowed them to reflect on how errors could best be avoided or corrected live. Introducing subtypes of translation at the beginning of training may emphasise the importance of commission errors and spark discussion among trainees on how to combat such errors from an early stage in the course.
- More dictation and respeaking training resulted in fewer recognition errors. It may be advantageous for a training model to recommend a four-week module on dictation and software management. This would allow trainees to create more accurate voice profiles and explore custom commands.
- Trainees reported that carrying out weekly quality assessments of their own work was beneficial to keep track of their weekly progression and to make more thorough contributions to the online forum discussions regarding errors. A training model could recommend for trainees to complete NTR assessments of their own texts (and perhaps their peers' texts) to obtain a balanced view of quality assessment.
- Videos were strategically placed in an order of difficulty so that trainees were slowly introduced to increasing speech rates, more challenging content, and more speakers as they progressed through the course. A potential downside could be the short duration of the videos, which ranged from two to six minutes each. For a training course, videos of 15–20 minutes could be

used in situated learning tasks to give trainees an insight into the challenges of respeaking at length and to strategise how to overcome these challenges.

- Using three videos each week to allow trainees to have a warmup video, a practice video, and a video for NTR analysis worked well and exposed trainees to a broad range of content each week. It is recommended to continue this approach when designing tasks for a training course.
- Trainees would have liked to practise with material from contexts other than the TV, such as live events (in the classroom, film festivals, museums, interviews, and in parliament, among others). Upon completion of the course, trainees should be able to provide professional interlingual live subtitles via SR software; therefore, it is essential that trainees be exposed to the types of content that they may encounter in a professional environment.

### **6.5.1 A social-constructivist approach to training**

When designing the University of Vigo module, measures were taken so that social constructivism could play a part in the design to ensure a learner-centred approach to training. This was mainly achieved by three means: (1) interactive tasks; (2) feedback and (3) sharing and contributing to research.

Aside from practical interlingual respeaking tasks, some tasks entailed trainees contributing to class discussions via the online forum. Although efforts were made to enhance trainee interactions, it appears that trainees would have liked more contact with peers and trainers via live discussions in the format of webinars or live online chats. Class discussions usually followed practical respeaking exercises to go over the characteristics of the video and the impact they had on the respeaker as well as to discuss translation and recognition errors and how to overcome them. Trainers observed that it may be beneficial to change the structure of tasks. For example, to first introduce an idea and create a discussion about it before carrying out an exercise as opposed to carrying out an exercise and then engaging in discussion afterwards. For a training course, an example could be to introduce an idea, such as the NTR model, and then to facilitate an informative discussion in a webinar format to spark conversation around the model. Once trainees have completed a respeaking exercise and their first NTR analysis, it may then be appropriate to have a follow-up discussion to clarify any doubts or questions the trainees may have. A similar structure could also be taken when trainees are working on their dictation. Dictation and recognition errors could be introduced and followed up by a discussion in which trainees could share any custom commands they think could be valuable in addition to those

given as a list at the beginning of a module. Then, after completing practical interlingual respeaking exercises, trainees could have a follow-up live discussion to go over the successes or failures of the custom commands and to share ideas on any amendments that they could make. This structure may ensure optimal class interaction throughout each task instead of leaving it until the end.

The University of Vigo trainees found feedback to be a useful tool during the course; this feedback was given from trainers and other trainees. Feedback was personalised, as the trainers watched each individual respeaking exercise and commented on their respeaking performance (dictation clarity, live translation skills, accuracy, speed, accuracy rate, etc.); trainers also second marked the trainees' NTR analyses. For training, it could be advantageous to formally incorporate peer review into this process so that trainees could experience being first and second markers, which would increase their knowledge of quality assessment and help them develop a balanced view towards assessing translation and recognition errors, as they would not be solely marking their own work. Some trainees received feedback from peers during online forum discussions. Trainees who performed well or demonstrated a strong ability to carry out a particular aspect of interlingual respeaking (whether it was dealing with multiple speakers well, impeccable recognition, or respeaking at speed) were asked to share recordings of their exercises via the platform for other trainees to view. Sharing work with one another prompted trainees to give informal feedback on their exercises and to ask each other questions about how they practised and what strategies and techniques they used during the pre-process and peri-process stages of respeaking.

Trainees noticed that the following tasks became easier for them to manage week by week: pausing to release text on-screen, using effective custom commands to save precious time while respeaking, getting used to dictating punctuation, condensing by omitting filler words and information that visually appears on-screen, and omitting information that would be scored as effective editions rather than penalised as cont-omiss errors. Trainees reported that over time they built up the confidence to make quick decisions while respeaking in terms of whether to correct an error or not and whether to fully include content, condense it, or omit it completely, which they credited to the support of their trainers and peers.

In the initial design stage of the University of Vigo module, trainers set out to devise an interlingual respeaking module that was intended for training but that was also based on existing research and



sought to inform further research. This way, trainers provided trainees with existing research through dissemination, and trainees provided trainers with valuable research data in the form of NTR analysis, Screencast recordings, and class discussions. It was important for trainees to receive proper training to develop a solid understanding of interlingual respeaking and to apply their knowledge to a professional environment. Even though data was being collected throughout the course, trainees did not feel as though they were solely participants in an experiment. The course was carefully structured and mixed research with practice. Trainees reported that they felt they were a part of something that was growing with them, as whatever the trainees were doing was valuable for interlingual respeaking and their own professional development. The trainees and the two trainers all formed part of the research and worked together to produce valuable data that would help the interlingual respeaking profession evolve; for example, discussing topics such as the professional environment, working conditions, and rates.

All in all, the social-constructivist approach did not fare well for the main experiment; however, it did for the interlingual respeaking module. This highlights that social constructivism is not *the* answer to successfully engaging students in training, as it may not be suited to all situations (i.e. to experiments) and to all learners. Some learners may prefer to work alone and at their own pace, rather than having to frequently keep up with their peers. As previously noted, for the interlingual respeaking module, trainees would have preferred to have had more contact with their peers. They seemed to work very well with one another; however, a shortcoming of the social-constructivist approach could be that it promotes marginalisation of the trainer as encouragement is given for trainees and peers to work together under the guidance of the trainer.

## **6.6 Final thoughts**

The results of the interlingual respeaking module confirm some answers to the RQs for this project. The average accuracy rate of all interlingual respeaking exercises was 98% (5/10). This result demonstrates that after extensive training, it is possible to produce interlingual live subtitles of an acceptable standard. Those who reached 98% demonstrated strong dictation skills and good recognition results as well as good live translation, multitasking, language, ST comprehension, TL expression, and short-term memory skills. Split-attention appears to be a fundamental skill; it involves the ability to not only

multitask by listening, speaking and managing two languages at the same time but also to separate recognition performance from translation performance and vice versa so that the results of one do not affect the other.

In terms of task-specific skills, the trainees had mixed views regarding the best-suited professional profile for an interlingual respeaker: two trainees thought that the best-suited profile would be an interpreter, another two thought that a mix of interpreting and intralingual respeaking would be beneficial, and one trainee thought that a subtitler and intralingual respeaker would be the best-suited. These results confirm that the most important aspect for interlingual respeaking training is the development of the task-specific skills required for interlingual respeaking as well as the development of skills that trainees lack from previous experience. When creating a training course, it is important to design tasks that cater to both interpreters and subtitlers and to create a space in which trainees from a variety of professional backgrounds can contribute to. Approaches to translator, interpreter and subtitler training are also relevant and are explored in Chapter 7.

# Chapter 7

## Approaches to translator and interpreter training

### 7.1 Introduction

Chapters 4, 5, and 6 presented the empirical results of each stage of this AR project. The empirical results indicated that a best-suited professional profile for interlingual respeaking may not concretely exist and, rather, that task-specific skills should be developed to produce interlingual live subtitles of good quality.

As has been touched upon throughout this thesis, the main intention of this project is to develop a training model for interlingual respeaking that will serve as a recommendation upon which to base future training. Aside from the empirical research, theoretical concepts and frameworks of translator and interpreter training are also at the core of the development of the training model. This chapter sets out to review useful literature of translator and interpreter training and to provide an overview of approaches that have been used in existing training and that influence the training presented in Chapter 8. Learner-centred approaches that focus on building training around translator competence are emphasised throughout this chapter. Also, this chapter marks a shift in focus from the practical to the theoretical, beginning with a brief overview of translator and interpreter training in the context of academia. Then, existing approaches to translator training and curriculum design are outlined, with an emphasis on a social-constructivist approach to training, which has featured greatly throughout this thesis. Subtitling, interpreting, and respeaking training as the fundamental components of interlingual respeaking training are explored and, finally, different modes of training delivery are considered.

### 7.2 Training terminology

The definitions of words that are used in this thesis for aspects of training, such as learning outcomes, competences, and skills, are explained in detail in Section 2.7. However, it is beneficial to briefly recap

them at this stage for the purposes of Chapters 7 and 8, as the focus for these chapters is largely on training. Suggested learning outcomes will be drawn up for the training course in Chapter 8 and will take the form of 'statements of what an individual should know, understand, and/or be able to do at the end of a learning process' (EQF). The empirical data provided in the previous chapters has identified the task-specific skills required for interlingual respeaking; the EQF has defined these skills as being cognitive competences, involving the use of logical, intuitive, and creative thinking, as well as practical competences, involving manual dexterity and the use of methods, materials, tools, and instruments. The skills will be grouped into competences, which, as defined by EQF, are 'the proven ability to use knowledge, skills, and personal, social, and/or methodological abilities in work or study situations and in professional and personal development'.

The terms 'training' and 'education' are intertwined but cannot be used interchangeably, as education implies a wider system of learning and training is more skill-based. On the one hand, education has been defined as 'a process of teaching, training, and learning, especially in schools or colleges, to improve knowledge and develop skills' (Oxford Dictionary). On the other hand, training has been defined as 'the process of learning the skills that you need to do a job' (Oxford Dictionary). Translator education typically refers to the process of learning knowledge through a systematic and critical knowledge exchange. In other words, translator education identifies the need for students to acquire translation competences and technical skills as well as interpersonal skills and attitudes (Pym, 2011) within an educational framework that implies the development of theoretical and critical skills. Translator training is a well-established branch of TS (Rodríguez de Céspedes, 2019) and refers to the teaching and learning of practical skills needed to carry out a particular translation task (Pym 2011). Training is often used for short-term applications and is commonly offered in work environments. As will be seen in Section 7.3, some universities give training on specific professional skills as part of a programme of short courses, thereby catering for specific market niches or skills (Pym, 2011). The empirical data of this research has shown that successful interlingual respeaking requires the development of task-specific skills, thus the skills combined with the practical nature of interlingual respeaking call for the development of respeaker training. It is expected that respeaking trainees will have already acquired theoretical and practical knowledge from previous undergraduate or postgraduate education, therefore, it may be appropriate for an interlingual respeaking course to be pitched as a CPD course. Finally, much like the difference between education and training, the Oxford Dictionary defines a student as a

person who studies a specific subject and a trainee as a person who is being taught how to carry out a particular job or task.

### 7.3. Translator training and research

Self-taught translators may continue to join the profession; however, as explained in Chapter 2, the institutionalisation of training has been a powerful and perhaps irreversible movement (Kelly, 2005). TS has developed into an academic discipline, and it has various established university departments with research being disseminated at conferences and in academic journals; additionally, research is being carried out in doctoral programmes, which are also interdisciplinary in nature (Millán and Bartrina, 2013). The importance of training in TS can be seen through both research and practical courses. A mark of importance has been given to training in TS in the 21<sup>st</sup> century through the creation of *The Interpreter and Translator Trainer*,<sup>16</sup> a peer-reviewed journal on training published by Routledge since 2007. Other journals in the field have dedicated special issues to the training of translators and interpreters, such as issue 16 of *The Journal of Specialised Translation*<sup>17</sup> (2011) on translator training, consecutive interpreting, and localisation, the 2019 special issue of *InTRAlinea*<sup>18</sup> on new insights into translator training, and the 2019 issue of *Linguistica Antverpiensia New Series* on MA training. TS also has a place within university education, professional associations, and companies in the UK and Spain, with a variety of short vocational courses and undergraduate and postgraduate degree programmes on offer.

Shorter vocational courses emphasise the increase in demand for professionals to learn new skills quickly and keep in touch with their professional development. Universities now offer such training for the various modes of AVT as well as preparatory courses for translation and interpreting diplomas. The different types of courses being offered at universities (academic degree programmes and short vocational training courses) are starting to fuse students and trainees, as universities provide short professional courses for both students in education and professionals wanting to take training to update their skills. A search conducted on individual university websites brought to light various programmes

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<sup>16</sup> <https://www.tandfonline.com/loi/ritt20>

<sup>17</sup> <https://www.jostrans.org/archive.php?display=16>

<sup>18</sup> [http://www.intralinea.org/specials/translator\\_training](http://www.intralinea.org/specials/translator_training)

in the UK. For example, the University of Roehampton has launched a series of half-day short courses in translation (MA, dubbing, subtitling, transcreation, videogame localisation, song translation, and SDL Trados); University College London offer full-day courses (dubbing, MemoQ, website localisation, transcreation, subtitling, videogame localisation and accessible theatre); and London Metropolitan University has run short courses in translation for over a decade and currently offers courses on the training of translator trainers and preparatory courses for the Diploma in Public Service Interpreting and the Diploma in Translation. Additionally, longer vocational courses are offered in other areas of translation, such as in forensic linguistics and translation (University of East Anglia) and legal interpreting and medical interpreting diplomas (University of Middlesex).

Another online search shows that many universities in Spain offer professional short courses in modern foreign languages and other specific subjects in the fields of science, engineering, arts and humanities, etc. Educaweb.com, a website that allows one to search for and compare various types of courses delivered at universities in Spain, shows that there is a total of 17 short courses available in the area of translation and interpreting. The internet has made it possible for a number of online and blended learning programmes to be offered via online teaching platforms (Jiménez Crespo, 2017). Out of the 17 short courses, only one course is delivered face to face while the rest are delivered online. The lengths of the courses vary from longer courses of 10 months or 3 months to shorter courses of as much as 230 hours to as little as 40 hours. However, the six-month online interlingual respeaking course delivered by the University of Vigo and the three short training courses on legal translation and interpreting delivered by the University of Alcalá do not appear in the search results. Therefore, there may be many more short translation and interpreting courses on offer than what immediately meets the eye.

In terms of university education, a quick search on whatuni.com, a database that allows one to search for and compare university courses in the UK, shows that there are currently 44 undergraduate degree courses in translation available across 12 universities and 146 postgraduate degree courses across 40 universities. In Spain, educaweb.com, shows that there are fewer undergraduate courses (26) delivered in more universities (21) and far fewer postgraduate courses (16) available across 12 universities. Although an exact number could not be obtained for the UK, it seems as though Spain is more advanced in the area of short vocational courses in this particular field and that the UK is more advanced in terms of the availability and reach of undergraduate and postgraduate degree programmes. If short vocational

courses on interlingual respeaking were to be introduced by universities, it would mark an important step for respeaking as a new mode of AVT. Vocational training at universities tends to attract both students and professionals. Training would introduce students to respeaking at an early stage while they may still be deciding which translation or interpreting pathway they would prefer to take upon the completion of their degree.

Professional associations seek to further particular professions by giving those involved or members of the association some recognition within their field, providing training opportunities, and recognising and acknowledging best practice. One of the first translation organisations was the International Federation of Translators (FIT), which began in 1947 and was created by professionals themselves (Lambert, 2013). Nowadays, various professional associations exist as forums for interaction between professionals and have grown alongside the number of language and translation agencies (*ibid.*).

In the UK and Spain, professional associations related to translation and interpreting also offer training. In the UK, the Chartered Institute of Linguists offers training to language professionals in various formats (webinars, face-to-face, and workshops) on topics concerning maintaining freelance work and preparatory courses for diplomas in language subject areas. Similarly, the Institute of Translation and Interpreting has different language and subject networks that members can belong to, and their training often focusses on topics, such as working with agencies, managing workloads, and translation technologies, among many others. In Spain, the professional association dedicated to AVT, the Spanish Association of Audiovisual Translation and Adaptation (ATRAE), offers short online training courses, such as subtitling, AD, translation for museums, song translation, etc., and has a job pool to connect professionals to the sector. The Spanish Association of Translators, Copyeditors and Interpreters (ASETRAD) aims to support and facilitate the work of professionals, offers short online and face-to-face training, and also organises talks by professionals at HEIs across Spain. Courses delivered by professional associations could contribute to the delivery of interlingual respeaking training in the near future.

As described above, courses are delivered in various formats, such as via webinars, online, or face-to-face. Although the topics are not specific to AVT, the ITI offers webinars on a broad range of topics that can be directly applied to tasks that professionals carry out (ITI). Such webinars include setting up as a freelancer, sourcing clients, and preparing invoices (ITI). It may be beneficial for interlingual respeaking

trainees to receive information on these topics, particularly if they are just starting out as translators, interpreters, or respeakers. In terms of delivering training, some professional associations are home to communities of audiovisual translators, scientific and technical translators, or medical translators, among others. Overtime, interlingual respeaking may be able to find its way into the community of audiovisual translators and reach many professionals who wish to expand their skills and begin to work with other modes of translation and interpreting.

Vocational training in companies in the UK and Spain is not usually made available to the public. The training that does take place is often limited to staff either already working at a company or hoping to be recruited by a company. For example, Red Bee Media launched a freelance academy in 2019 that consists of an online course to train new freelancers in pre-recorded subtitling (Clark, 2019). The training allows learners to complete training units at their own pace, and once learners pass the course, they can begin to carry out subtitling work at a probationary rate and receive feedback until they reach a certain number of subtitled minutes at a certain standard (Clark, 2019).

#### **7.4 Approaches to translator and interpreter training**

Learner-centred education has become part of a policy framework, which aims to improve the quality of education in various fields (Schweisfurth, 2015). In translator training, there has also been a shift from the teacher-centred (transmissionist) tradition towards a student-centred (interactionist) approach to knowledge construction (Kelly, 2005). A profession-based learner-centred approach is the basis for various approaches to training today. From Li's (2014) point of view, such approaches should complement one another at different stages of the training process. In academia, translation became a by-product of foreign-language learning in most European countries, as teachers assumed that students learn to translate simply by translating (Kelly, 2005). Therefore, early approaches to training consisted of students translating texts with very little or no prior preparation with the objective of closely imitating the teacher's translated version, deemed as the 'correct model' (*ibid.*). Such pedagogical approaches to training were frustrating for students, and, fortunately, translator training has now evolved as its own discipline within TS (*ibid.*).

The following subsections explore various approaches to training in translation and interpreting, which could also be applied to training for interlingual respeaking. Although the most common approaches to



training are listed below, only a selected few have been drawn upon in detail, as they are believed to be the most appropriate for the needs of interlingual respeaking training. The approaches that have been adopted for an interlingual respeaking training course are outlined in Section 7.12.

The approaches listed below are conceived at different levels. Process-centred, product-centred, and task-based approaches are used as the training methods that determine the focus and design of the training. The social-constructivist approach to training is based on a larger theoretical framework, which focusses on the individual's learning as part of a collaborative process with collective interactions. As noted by Li (2014), the most common approaches are:

- Object-oriented: driven by clear objectives (Delisle, 1980);
- Process-centred: focus of teaching is the process rather than the product (Gile, 1995);
- Product-centred: focus of teaching is the product as opposed to the process (Gile, 1995);
- Research-informed and competence-based: based on theoretical description of translation practice (Kiraly, 1995);
- Profession-oriented: includes the use of authentic materials and real-world work conditions (Mossop, 2003);
- Task-based: tasks designed to facilitate learning, such as simulated translation tasks or authentic translation projects (Hurtado Albir 1999; González-Davies 2004);
- Learner-centred: the focus is shifted from teachers and teaching to students and learning (Nord 1991, González-Davies and Scott Tennent, 2005); and
- One that takes on a social-constructivist approach, in which students interact with peers and teachers to complete translation tasks and projects and gradually form part of the professional community (Kelly 2005, Kiraly 2000).

#### **7.4.1 A process-centred versus a product-centred approach**

A process-centred approach to translation training focusses on how to go about translating rather than the actual written translation. According to Gile (1995, p. 10), the idea is to focus on the classroom and the translation process itself and not on the results, which are the end product of the translation process. In other words, rather than giving students texts to translate, commenting on them, and saying what is 'right' and what is 'wrong' and counting on the accumulation of experience to lead trainees up the

learning curve, a process-oriented approach provides the student with good translation principles, methods, and procedures.

Gile, a trained conference interpreter who taught both translation and interpreting, identifies various advantages to process-oriented approaches, such as the fact that progress is faster with a process-centred approach than with a product-centred approach, which tends to be based on trial and error; a process-centred approach allows students to focus on only one aspect of the process at a time, unlike a product-centred approach which calls for a student to deal with all the problems at the same time; there is a greater emphasis on translation strategies; there is greater flexibility in linguistic acceptability or fidelity used in early stages of training, unlike a product-centred approach, which compares student translation results with the teachers 'ideal translation model'. In a process-centred approach, the teacher verifies that the student has met certain principles or a certain process and does not insist on the obtainment of a specific result. Gile (1995) believes that a process-centred approach is required for the early stages of training; however, he also acknowledges that a product-centred approach would be more necessary towards the later stages of training. The flexibility of these two approaches emphasises that it may not be possible to select just one training approach to adopt throughout interlingual respeaking training. Instead, multiple approaches could be taken in different stages of training to suit the needs of what each stage intends to achieve for the learner.

As previously described, a product-centred approach to translation is based on trial and error and leads both teachers and students to focus on the final TT as opposed to the process of translating the text. Given the demand for quality in MA products and services, a product-centred approach to translation quality assessment should form an integral part of the post-process of interlingual respeaking training. This approach can be divided into the following three steps: a description of errors (looking at the symptoms), the reasons for the errors (diagnosis), and pedagogical help (therapy) (Kussmaul, 1995). As previously mentioned, the NTR model (Pöchhacker and Romero-Fresco, 2017) could play an important part in interlingual respeaker training, as it allows errors to be identified and categorised before being graded according to their severity. This type of assessment has proved to be useful in assessing the quality of interlingual respoken texts and providing accuracy rates for the purposes of the data analysis of this thesis. Such empirical data will inform training for interlingual respeaking, as the errors that have been analysed during the NTR assessments now seek to prescribe a 'therapy'

(Kusssmaul, 1995), which will be formed of specific tasks to avoid and manage errors in interlingual respeaking.

#### **7.4.2 Task-based approach**

Task-based learning has been applied to foreign-language teaching for some time, and it is now being applied to translator training (Hurtado Albir, 1999, 2015; González-Davies, 2004; Danan, 2010; and Li, 2014, among others). A task-based approach is an overall curriculum design based on learning outcomes (Kelly, 2005) and can also be linked to objective-oriented teaching that is driven by clear objectives and active methodology for students to fully participant in the learning process (Delisle, 1980).

González-Davies defines task-based learning as:

Concrete and brief exercises that help to practise specific points [...] leading along the same path towards the same end, or task, [understood as] a chain of activities with the same global aim in the final product. On the way, both procedural (know-how) and declarative (know-what) knowledge are practised and explored (González-Davies, 2004, p. 22–23).

The translation task and project-based approach has been extensively researched by Hurtado Albir and has proved to be a suitable methodological framework for acquiring translation competence (Hurtado Albir, 2015). The main aim of the task-based approach is to integrate learning objectives, content, methodology, and assessment into translator training. The task-based approach consists of designing training as a set of tasks and sees tasks as the foundation on which learning is organised, thereby making a distinction between two types of tasks: preparatory tasks and final tasks (Hurtado Albir, 2015). Although a task-based approach to translator training has already been defined, it is also fitting to provide a definition for the translation task as a unit of work. Hurtado Albir (1999, p. 56) defines such a unit of work as a representative of translation practice, intentionally aimed at learning to translate, and is designed with a specific objective, structure, and work sequence; Hurtado Albir further describes translation tasks as the cornerstones of teaching unit production and curriculum design in translator training. The teaching units can be organised into different tasks that can be performed in or outside classrooms, with or without guidance, and individually or in groups. Hurtado Albir (2015) explains that teaching units can differ depending on the nature of the competence and learning objectives involved

and organised on the basis of different kinds of tasks that prepare students for the final task (a final assessment or exam), which they complete to demonstrate that they have acquired the necessary competences and met the learning objectives. The focus on particular tasks usually helps learners to make sense of the context and increase their involvement in the learning process (Danan, 2010).

Li (2014, p. 1) insists that 'translation competence is the ultimate goal of all translation training programmes'. According to Li (2014), in the context of second-language learning, task-based teaching is more effective when students are focussed on the task that they are trying to complete rather than on the language they are learning. The focus should be placed on the learners, the process of learning, the reflective practice of learning, and the use of real-world authentic tasks. Applying a task-based approach to interlingual respeaking training would entail using a similar structure of tasks that are used in the online interlingual respeaking course for the University of Vigo, as presented in Chapter 6. Authentic tasks would include pre-task activities such as researching terminology and preparing the software; peri-task activities would entail respeaking longer videos of 15–30 minutes to reflect the amount of time a respeaker is expected to work for at a time; and post-task activities would entail carrying out a full analysis of the respoken text using the NTR model (Romero-Fresco and Pöchhacker, 2017), highlighting the product-centred nature of the final stage. Li (2014) suggests that Willis's (1996) proposal of seven stages for task-based teaching for second-language learning can be adapted to six stages that can be applied to translation learning. As shown in Figure 7.1, the six stages include: pre-task, task, reporting, analysis, revision, and reflection (*ibid.*, p. 8). In this task-based model of teaching translation, students play a central role in Stages 2, 3, 5, and 6, and teachers take the initiative in Stages 1 and 4. As the training progresses with this model, students become more independent and the teacher's role becomes less directive (Li, 2014).



Figure 7.1: Task-based approach to teaching translation.

As previously mentioned, approaches to translation training are not exclusive; rather, they should complement one another during the training process. Aspects of the social-constructivist approach have been seen to clash with the task-based approach due to the task-based approach encouraging teacher-led learning and social constructivism fostering a learner-led approach (Li, 2014). Some scholars are calling for an integrated use of both models to be used with different teaching purposes (Marco, 2004). It is believed that a social-constructivist approach to translator training can coexist with the task-based approach if the former provides a main approach to training and the latter is introduced at task level.

#### 7.4.3 Social-constructivist approach

A social-constructivist approach to translator training has been continuously featured throughout this research project as an approach to translator training, and it has shaped the methodology of the practical experiments presented in Chapters 5 and 6. To briefly recap, the approach is based on a knowledge-construction process, as knowledge is constructed by learners rather than being transmitted to them by their teachers, thereby shifting control from the teacher to the learner (Kiraly, 2000). Kiraly explains that if students obtain competence in a professional domain, they will acquire the expertise and authority to make professional decisions, take responsibility for their actions, and become empowered to follow a path of lifelong learning.

The social-constructivist framework supports what is believed to be a suitable approach to interlingual respeaking training since interlingual respeaking is both a collaborative and individual practice that

requires ongoing training and is founded on knowledge from the professional environment. The principles of this approach are ideal to introduce as the overall approach to learning for interlingual respeaking training. Kiraly outlines the key principles of social-constructivist education, some of which could be particularly useful, for example: multiple perspectives, collaborative and cooperative learning, situating learning, and scaffolding.

First, in terms of dealing with multiple perspectives, the social-constructivist view is that the individual learner is never alone. Learners communicate, think, share, and contrast their perspectives with other members of the communities that they belong to (Kiraly, 2000). A social-constructivist approach to education uses multiple perspectives as challenges, as they naturally lead to debate, negotiation, and growth in learners (*ibid.*). As explained in Chapter 6, which outlined the short online interlingual respeaking course carried out for the third stage of this AR project, the incorporation of multiple perspectives in a training course not only encourages the exchange of perspectives between students and trainers but also benefits the new profession of interlingual respeaking. Therefore, the teaching and learning that took place in the course was not a one-way transmission process but was rather a mutually beneficial process of sharing perspectives (Kiraly, 2000).

Second, collaborative and cooperative learning formed an important part of the course, as students and trainers worked collaboratively to make sense of and contribute to the task of interlingual respeaking rather than making sense of it individually. As quoted in Kiraly (2000, p. 36), Dunlap and Grabinger (1996, p. 68) summarise pedagogical advances resulting from a collaborative learning environment:

Working in peer groups help students refine their knowledge through argumentation, structured controversy, and reciprocal teaching. In addition, students are more willing to take on the additional risk required to tackle complex, ill-structured, authentic problems when they have the support of others in the co-operative group. Students are more likely to achieve goals they may not have been able to meet on their own.

Kiraly notes that the advantage of collaborative working is that it allows learning activities to revolve around projects that reflect the complexity of real-life professional tasks. Although, in the three stages of this AR, participants and trainees carried out interlingual respeaking tasks individually, this does not mean that they internalised their learning; rather, specifically in the interlingual respeaking module, students worked collaboratively to find solutions to common problems encountered in interlingual

respeaking tasks in order to solve common issues together. Quoting Johnson and Johnson (1991, p. 17), Kiraly (2000, p. 37) notes:

There is a great deal of research indicating that, if student to student interdependence is structured carefully and appropriately, students will achieve a higher level, use higher-level reasoning strategies more frequently, have high levels of achievement motivation, be more intrinsically motivated, develop more positive interpersonal relationships with each other, value the subject area been studied more, have higher self-esteem, and be more skilled interpersonally.

This accentuates the importance of using collaborative learning to allow students to reach their full potential. As interlingual respeaking is a new modality of AVT, it can take this type of learning one step further to ensure that students have plenty of opportunities to collectively contribute to the profession. These contributions can be achieved by providing research data in the form of respeaking exercises and by participating in discussions on the working conditions of interlingual respeakers. Discussion points could be fed through the course for trainees to participate in ongoing discussions on these topics.

The third element of a social-constructivist approach is situating learning, which is fundamental to the constructivist view. Situating learning is the concept of learning through authentic action and within an authentic situational environment. From the perspective of respeaking, situating learning would entail a student undertaking professional interlingual respeaking tasks in all of their complexity under the guidance of a professional respeaker or trainer. The social-constructivist approach calls for learning to be authentic and productive, which means that it should take place within a natural professional setting. This means that the skills required for the task, the knowledge of the topic, and any other content are not made easier for students to process; rather, the complexity of the task is retained while still considering the student's level of knowledge and skill development. In other words, learning should be embedded within the natural use of content (Kiraly, 2000, p. 43). Authentic respeaking tasks would have a duration of around 15–30 minutes and would include pre- and post-task activities such as researching terminology, preparing software, and quality assessment to allow the learner to experience real-world activities that they would encounter in a professional environment. Tasks can be carried out by simply using Dragon and the audiovisual material; however, the subtitling software, Wincaps, now allows for the integration of Dragon. Using professional subtitling software would make tasks more authentic.

The fourth and final element of the social-constructivist approach is scaffolding, which has been defined by Kiraly (2000, p. 45) as 'the support offered by the teacher to assist learners in the collaborative

construction of the mental models'. Scaffolding is understood to take a variety of forms, which could involve either the trainer providing hints of how to complete the task or the trainer providing an exemplary completion of the task (*ibid.*). For interlingual respeaking training, scaffolding would take the same form and would provide students with, for example, word and macro lists to facilitate working with software or would involve trainers carrying out live interlingual respeaking tasks for students to observe. Kiraly notes that as the scaffolds become dispensable, they can be gradually withdrawn, allowing students to complete tasks individually or collaboratively and without assistance from the teacher. As opposed to breaking tasks down into bite-size chunks, scaffolding is understood to be a form of signposting that can help guide students' learning.

Chapter 8 will further explore how to give learners more power and enable trainers to take on a facilitator approach; this set up allows for a collaborative work environment in which learners can interact in a communicative space (potentially online) that is guided, as opposed to directed or transmitted, by the trainer. If online training is preferred (as discussed in Section 7.11), importance could also be given to creating a constructivist computer-based classroom, which Kiraly (2000) proposes would allow learners to explore the computer-based tools available today and would encourage learners to continue to explore new tools on their own as they become available in the future. To create an environment in which a learner would feel comfortable to do this, Kiraly (*ibid.*, p. 125) suggests 'designing and fostering a collaborative environment for guided exploration and authentic practice, [and] helping students move towards autonomy from the very beginning'.

### **7.5 Accessibility in training**

A recent increase in AVT services and accessibility services has been facilitated by new legislation and accessibility guidelines, such as the European Accessibility Act that came into effect in March 2019, which aim to increase the quantity and improve the quality of SDH and AD (Romero-Fresco, 2019b). Appropriate training plays an essential role in improving quality, and this research is the first natural step towards creating training for interlingual respeakers. The approaches to translator and interpreter training outlined so far are generally formed around the development of competence and skills. As discussed at various points of this thesis, interlingual respeaking is a form of MA, and it aims to provide interlingual live subtitles for a wide audience. Therefore, the nature of interlingual respeaking calls for



the integration of accessibility into respeaking training and for the accessibility competence to be developed. Students benefit substantially in seeing accessibility as a critical component to media creation rather than an afterthought (Youngblood, Tirumala and Galves, 2018); similarly, accessibility should be an integral part of the design of interlingual respeaking training from the outset. 'On-the-fly' accessibility does not work well – accessibility should be included as part of the planning and design process (Zdenek, 2009).

Accessibility competence has been defined by Heinisch (2019, n.p.) as 'the ability to use one's knowledge, skills and other abilities to make a product or service accessible to as wide a range of people as possible'. Various lists of competences exist within the language industry and the education sector (ISO 17100, EMT 2009, EMT 2017), and they all appear to revolve around the same competences: translation competence, language competence, cultural competence, research competence, technology competence, and thematic competence. Heinisch (2019) argues that such lists of competences are essential for competence-oriented translation curricula, which should meet the expectations of the sector. This is particularly important for interlingual respeaking training, considering the novelty of the profession.

Modules and units on accessibility are part of many degree programmes so as to help students acquire accessibility competence (Heinisch, 2019). Training in areas such as accessibility awareness is being made available in translator education. Accessibility competence has already been integrated into training courses in the field, such as training through massive open online courses (MOOCs), including a certificate for Accessibility Management for the Scenic Arts (ACT, 2017a) and a master programme in Accessibility Management (ACT, 2017b), which focusses on developing interpersonal, managerial, and practical competences. The modules for the master programme have been designed with the intention of being able to integrate into existing master programmes, such as Cultural Studies, Theatre Studies and Translation and Interpreting (*ibid.*). Other training includes accessible elements to include a wide audience, such as the eTransFair translator training programme, which offers ICT-based educational contents to ensure the participation of less advantageous groups (eTransFair, 2017). Other translation programmes have already been developing accessibility competence through AVT and localisation (Heinisch, 2019), as they teach students to eliminate barriers to content accessibility (Díaz-Cintas, Matamala and Neves, 2010), whether those barriers be linguistic or sensory. The latter can range from accessible educational buildings, accessible information on university websites, accessible

training material, teaching methods, and alternative modes of assessment (Heinisch, 2019). Educational institutions are pushing for material to be delivered electronically, even if making such material accessible has often been an afterthought (Lewin, 2015). Educators have the opportunity to develop online educational content that can reach wide audiences regardless of what abilities or disabilities the audience may have (Youngblood, Tirumala and Galves, 2018). It is only natural that the accessible nature of interlingual respeaking is mirrored in the delivery of a training programme and that the programme has a focus on accessibility competence.

Heinisch (2019) notes that further research is needed in order to develop a general strategy to make translation education and training more inclusive. Such research goes beyond the scope of this thesis; however, attempts have been made to acknowledge recent shifts in MA, and Chapter 8 discusses how they can be applied to interlingual respeaking training, including for accessibility competence.

## **7.6 Approaches to curriculum design within TS**

A demand for highly trained interlingual respeakers means that the provision to train professionals should be carefully considered. Therefore, the attention of this chapter will briefly shift to fundamental factors for designing training within TS and, particularly, within the fields of AVT and interpreting.

In the early 2000s, as the growth in publications on translator training tended to bypass curriculum development, research began to appear that addressed curriculum issues in translation and interpreting studies (Kearns, 2006). A gap between translator and interpreter education and curriculum theory was acknowledged, but attempts were rarely made to integrate educational theory (Sawyer, 2004). This highlights the importance of taking knowledge from previous developments in translator and interpreter education and bringing curriculum theory and interlingual respeaker education together from the outset; doing this could help to avoid poorly organised training or training that fails to meet social needs and industry demands. Some scholars believe that academia and industry are two worlds apart and that academia should not be compliant to industry (Molesworth, Nixon and Scullion, 2009). However, there is also growing interest in industry to work with academia to bring professional practices into the classroom (Rodríguez de Céspedes, 2019). It could be seen that there is a gap between academics with a professional and a research background; this could be due to the perceived gap between what is taught in the curriculum and professional practice (Rodríguez de Céspedes, 2019). Traditionally,

universities have favoured the appointments of academics over professionals, and although there are now more open doors for practice-based academics, it is difficult to recruit research-active academics with professional backgrounds.

Curriculum design in TS can vary depending on the type of training being offered. For example, some training is delivered within undergraduate or postgraduate degree programmes, some training is vocational, and some is delivered in the industry. Training tends to include more theoretical elements, as it is linked to departments that also conduct research (Kelly, 2010), while vocational or in-house training tends to focus more on practical elements with an intention of training professionals to carry out practical tasks unsupervised and as soon as possible. Approaches to curriculum design are a fundamental initial step of the design process in order to ensure that the curriculum being designed meets the needs of the discipline, professional context, and student. Cannon and Newble (2000: 142–143) explain that:

The key to curriculum planning is to forge educationally sound and logical links between planned intentions (expressed as objectives), course content, teaching and learning methods, and the assessment of student learning while taking account of student characteristics.

A systematic approach to curriculum design considers the institutional and social context of training and sets learning outcomes that are desired within the professional sector (Kelly, 2010). The institutional and social context can be determined by the following: social needs, professional standards, employers' needs and views, institutional policy, institutional constraints, disciplinary considerations, and student/trainee profiles (Kelly, 2005). This systematic approach to curriculum design with strong considerations of industry needs means that trainers should have knowledge of present and future trends and contacts within the industry (Kelly, 2010). The aspects listed above should be considered before designing interlingual respeaking training, due to the potential of students/trainees being able to apply their learning from a vocational interlingual respeaking course to industry.

Competence-based curriculum design, which is not to be confused with competence-based training, accounts for both disciplinary considerations and the general social context and its needs (Kelly, 2010). Competence-based training is the approach to competence within training and offers learning planning strategies for training based on outcomes required to meet industry needs (Calvo, 2011). Competence-based curriculum design is largely used within HE, as this type of training aims to improve the profile of

future translation graduates and makes a distinction between the 'translator' and the 'graduate' in terms of whether they have obtained a qualification in translation and the length of their experience. There are two types of competences within competence-based training: specific competences and generic competences. In TS training, specific competences refer to those required to successfully translate, and generic competences refer to those required by all students at a certain level. Various definitions have been provided for specific competences in TS, such as 'all the skills and knowledge that contribute to the successful completion of the translation task' (Lesznyák, 2008, n.p.) and 'the knowledge, skills and attitudes necessary to be able to translate' (Hurtado Albir, 2017: xxv). For generic competences, the most apt definition is: 'a transferable, multifunctional package of knowledge, skills and attitudes that all individuals need for personal fulfilment and development, inclusion and employment' (Flogie and Abersek, 2019: 77).

In creating a training course for interlingual respeaking, a competence-based systematic approach to curriculum design will be adopted to ensure that the learning outcomes, competences, and task-based skills that are acquired through the interlingual respeaker training are also apt for professional work within the industry and include a set of specific competences required for interlingual respeaking. The design of an interlingual respeaking training course must include space to develop situated learning in order to enforce professional considerations such as professional standards, institutional policy, and constraints and to ensure that students/trainees are well equipped to carry out tasks in the industry. A set of generic competences that can be applied to other disciplines and professions will not be required, as it is expected that potential trainees will have completed either an undergraduate or a postgraduate degree in which they would have already acquired these generic competences. However, a set of specific competences for the task (Pöchhacker and Remael, 2019) (further detailed in Section 7.10) will be used as a foundation for designing interlingual respeaking training.

Due to the '21<sup>st</sup>-century nature' of the translator profession, there is a tendency in TS to base training upon a multitude of specific and generic competences. A variety of professional roles are now carried out by translators; these roles include translators also acting as bilingual editors, multimedia designers, research and information specialists, cultural assessors, multicultural software designers, software localisers, terminology testers, post-editors, and project managers (Shreve, 2000). In addition to sometimes performing these extra roles, translators are also expected to collaborate with other professionals such as editors and IT specialists. A profession with such variety calls for a wide range

of required skills, which all belong to what is broadly known as the translation profession (Kelly, 2005). As training for interlingual respeaking will focus on the very broad overall objective of trainees learning how to interlingually respeak, one may think that training should seek to train in only this one area of expertise. However, due to the interdisciplinary nature of interlingual respeaking, other skills and competences are required, such as having a broad knowledge of MA, the process of simultaneous interpreting, and the production of subtitling. Therefore, training should include an overarching multicomponent competence with various sub-competences related to interpreting and subtitling training as well as those specific to respeaking, as seen in Pöchhacker and Remael (2019).

### **7.7 Competence**

Since the late 20<sup>th</sup> century, competence has been explored from different perspectives within TS, and scholars have adopted different approaches to translation competence. Bell (1991) believes that translation competence is an expert system dominated by strategic competence. Pym (2003) defends a minimalist approach and identifies two required skills as (1) generating more than one option for a TT and (2) the ability to quickly and confidently select only one option. Kelly (2005) takes a didactic approach and defines translation competence as the set of knowledge, skills, attitudes, and aptitudes needed to complete a translation task. Like Bell (1991), Shreve (2006) also focusses on expertise and considers translation competence to be an individual's ability to use cognitive resources relevant to translation to perform a translation task and, therefore, something to be developed through training and experience. The Process in the Acquisition of Translation Competence and Evaluation (PACTE) research group was formed in 1997 to define the characteristics of translation competence and how translation competence is acquired with the aim of improving curriculum design and assessment in translator training. A translation competence model has evolved throughout the project; the final version of this model states that 'translation competence comprises five sub-competences: bilingual, extralinguistic, knowledge of translation, instrumental and strategic' (Hurtado Albir, 2017, p. 39). Such competences have also been used in other competence models for AVT and interpreter and respeaker training, such as the EMT's work on competences.

Transferable competences are not only required for practical tasks but are also required for navigating the professional world. The first EMT group was set up in 2007, and in 2009, Gambier, as the leader of

the group of translators' competences, shifted the focus towards the professional world and placed the market and quality at the centre of training (EMT Expert Group, 2009). Gambier described two dimensions of the translation service competence: the interpersonal dimension (knowledge about the translation profession) and the product dimension (procedural and declarative knowledge relating to the production of the TT). Given the impact of technological and societal change on the way that translation is performed, a new competence framework has been adopted for 2018–2024, updating and expanding on previous work (EMT, 2017). The competence framework defines five main areas of competence: (1) language and culture; (2) translation; (3) technology; (4) personal and interpersonal; and (5) service provision (*ibid.*).

Space has been given to AVT in the most recent wheel of competence designed by the EMT group. Many similarities can be seen between general translator and audiovisual translator competence models, namely in linguistic, cultural, and technical competences. Competences are key across the spectrum of AVT processes and products, such as (live) subtitling, dubbing, voice-over, AD, etc. According to Valentini (2006), the five key competences in AVT are (1) linguistic competence; (2) pragmatic communicative and interactional competence; (3) paralinguistic competence; (4) cultural (encyclopaedic) competence; and (5) technical competence. The transferable nature of competences for interlingual respeaking training is fundamental to supporting an interlingual respeaker's professional trajectory, as trainees are likely to also be engaged in professional subtitling, translation, and/or interpreting work.

There is still some debate around the sub-competences of translation competence; however, scholars appear to agree that communicative competence, domain competence, and tools and research competence all play a decisive role (Göpferich, 2009). These three sub-competences could be transposed to interlingual respeaking. Communicative competence requires an interlingual respeaker to have an excellent command of both the SL and TL, as this competence comprises lexical, grammatical, and pragmatic knowledge (Göpferich, 2009) to effectively comprehend the SL and express an accurate (live) translation in the TL. Domain competence refers to extralinguistic knowledge and is essential for an interlingual respeaker to fully comprehend the ST and formulate sensitive and culturally appropriate translations in the TL. Tools for an interlingual respeaker may include SR and subtitling software and hardware such as a microphone and other electronic tools including online dictionaries and databases to support research. Although research competence cannot be used by

interlingual respeakers in the moment of producing a live translation, it can be used in the preparation phase of the task, just as it is used by conference interpreters. Respeakers are usually expected to prepare for programmes that they will respeak live by searching for terminology and tapping into their tools competence to introduce new terms into the SR software.

Learning outcomes, task-specific skills, and competences for interlingual respeaking provide the foundation of the training course presented in Chapter 8. Learning outcomes specific to MA, subtitling, interpreting, and respeaking will be drawn up so that the competence lists above can provide an essential overview of what are widely considered to be the essential competences for translators.

### **7.8 Subtitling training**

Teaching in the area of AVT in Europe dates to the late 1980s and 1990s; therefore, AVT training was incorporated into HE curricula just over 20 years ago, and, up until this point, professionals tended to be trained in-house (Cerezo Merchán, 2019). In the beginning, very few HE institutions offered subtitler training. In the late 1980s, the Université de Lille offered courses in subtitling and dubbing, and the University of Copenhagen started to deliver a subtitling module in 1990 (Gottlieb, 1992). Since the 1990s, AVT training has grown within university education in order to respond to the demand for audiovisual translators (Cerezo Merchán, 2019). In 2008, Kruger stated that due to the popularity of AVT, it had become difficult to list the institutions that offer practical and theoretical training in subtitling audiovisual translation at undergraduate, postgraduate, and vocational levels. It is promising to see that AVT is taught at module level in undergraduate degree programmes and that there are some postgraduate degree programmes that solely focus on AVT (see Section 7.3).

Specially designed curricula are a fundamental step towards quality in AVT. To ensure the effective training of audiovisual translators, training should seek to develop skills and competences pertinent to obtaining proficiency in the task. Curricula could focus on specific learning objectives, competences, various teaching and learning approaches, the suitability of resources, task design, and reliable assessment methods (Cerezo Merchán, 2019). As discussed in this chapter, competence-based training has foundations in social-constructivist learning theory and revolves around the notion of translation competence (Hurtado Albir, 2015). Many scholars have outlined lists of skills and competences required in AVT. The scope of this thesis does not allow for the exploration of all of the

audiovisual translator competence models; however, some relevant perspectives are outlined below, with the purpose of informing the subtitling component of interlingual respeaking training.

Kapsaskis (2011), whose main focus is in the area of subtitling, questions the future of narrow specialisation in training and argues that translators play an extremely flexible role within the industry; Kapsaskis therefore proposes that translator's professional identity may need to be redefined. The advent of new media has led to the industry managing a growing amount of information and increasingly shorter deadlines. This has naturally led to the emergence of various new skills and sub-competences. Kapsaskis (2011) proposes that the focus in translator training should now shift away from specialisation and towards a holistic approach that advocates for transferable skills and market awareness. Vocational institutions traditionally provided more specialised training in specific areas within the field, whereas HE institutions provided more generic training within education in undergraduate degree programmes and some specialisation at postgraduate level (Kruger, 2008). Narrow specialisation may be required for interlingual respeaking training, as it is a mix of interpreting and subtitling; however, interlingual respeaking could also be a part of interpreting or subtitling training programmes in addition to being its own specialised training programme. It is expected that the type of trainee an interlingual respeaking course will attract will have already completed an undergraduate degree and possibly a postgraduate degree. Potential trainees are likely to be translation and interpreting professionals with an interest in a specialised vocational course. Given the novelty of interlingual respeaking, a specialised course may be necessary from the outset, but it should incorporate elements of subtitler and interpreter training to account for its origins. A parallel emphasis on market awareness, quality, and transferable skills (generic competence) would present significant advantages in training (Kapsaskis, 2011).

Aside from a competence-based approach to subtitling training, scholars have also offered insights to other elements of training, such as the ratio between theory and practice, equipment and software, timing considerations, and catering for diverse skills and needs. In terms of a subtitling course structure, Díaz-Cintas (2008) suggests that in the initial sessions of the course, students should be introduced subtitling with the aim of understanding where the practice is situated within TS and how it differs from other forms of audiovisual translation, specifying that:

The best progression would be to start discussing general considerations about AVT and subtitling [before moving] on to the technical and linguistic dimensions, preferably in a concurrent way, and [would] finish with a detailed overview of the profession and the subtitling market (*ibid.*, p. 92).



HE institutions have realised the importance of including both theoretical and practical elements in university education (Kruger, 2008), and according to Sponholz (2003), the ratio between theory and practice is typically 25% theory and 75% practice. Learners should be exposed to practical subtitling tasks as early as possible within training to ensure that they start learning from their own experience and are engaged from the beginning (Díaz-Cintas, 2008). Early engagement in training advocates a social-constructivist approach by giving students the power to be in control of their own learning (Király, 2000), both technically and linguistically (Díaz-Cintas, 2008). Practical subtitling tasks require the use of professional subtitling software. Technology goes hand in hand with AVT; therefore, it is essential that these technologies are used in training. The technical revolution has impacted the availability of subtitling software, and many fully functioning programmes can be downloaded from the internet for free (for example, Subtitle Workshop) while others can be purchased for a monthly or annual fee (for example, Wincaps or Ooona). Therefore, there are cost-effective ways to introduce subtitling into the translation curriculum without having to invest in expensive professional software.

Díaz-Cintas (2008) outlines some general considerations for subtitler training, such as introducing students to other AVT modes (dubbing, voice-over, interpreting, and subtitling) so that they can have a broad overview of the various subfields of AVT. This is thought to mirror the professional market, as audiovisual translators may not exclusively work with one mode of AVT, and, rather, they need to have an awareness of other practices. Technical considerations for subtitler training include software, spotting, and managing time codes. An understanding of the target audience is also important, and this is where reading speed and variations of subtitling such as SDH can be introduced. Linguistic considerations include punctuation, syntactic and semantic strategies, reduction, and condensation. Professional considerations include using terminology typical within the industry and having guest speakers from the profession and ex-students from the course as well as visits to local subtitling companies. Fostering discussion around other professional considerations could take the form of working conditions and current practice, the impact of globalisation, expected salaries and pay rates, clients, tax responsibilities, and professional development, all of which are also applicable to interlingual respeaking.

Producing subtitles is a slow process – a professional subtitler can only produce between 25 and 50 minutes of subtitling per day, and it can take between six months and a year of full-time subtitling to

reach this level of productivity (Kruger, 2008, pp. 83–84); therefore, a fundamental aspect of subtitler training is time allocation. Time allocation to complete a live subtitling exercise is not expected to pose problems for interlingual respeaking training. As interlingual respeaking exercises are carried out live, a 15-minute clip will take 15 minutes to subtitle live, unlike pre-recorded subtitling. Although live subtitles can be produced much faster than pre-recorded subtitles, quality assessment in live subtitling and respeaking is entirely different; however, both require time allocation in training. Live subtitling requires training to reach acceptable levels of productivity, and the quality assessment process takes place once viewers have already had access to the subtitles (see Section 3.4.4). In contrast, although pre-recorded subtitling also requires training, it generally undergoes quality control before being published.

## **7.9 Interpreting training**

Interpreting can be seen as a subdiscipline of the wider field of TS (Pöchhacker, 2010). Interpreting courses date back to the early 20<sup>th</sup> century; however, reflection on the task and curricular issues remained limited until the 1980s and 1990s when the tradition of conference-interpreting training took on different approaches, including scientific approaches, process-oriented approaches, and new training needs for interpreting in different settings (Pöchhacker, 2016). Although the integration of theory in the interpreting curriculum and academic research has been slow (Pöchhacker, 2004), scholars focussing on process-oriented models have researched aspects such as component skills, strategies, processing capacity management, and the development of expertise (Pöchhacker, 2016). An interdisciplinary approach has also been adopted towards interpreting studies, and scholars have drawn upon theories from various disciplines, such as psycholinguistics, cognitive psychology, education theory, and sociocultural, political and institutional constraints in interpreter education (*ibid.*); which has now been extended to interlingual respeaking, consequently merging AVT and interpreting studies. There is great variety in interpreter training programmes, as training typically ranges from short vocational courses in non-academic environments to university courses at undergraduate and postgraduate levels.

Course entry for interpreting programmes has traditionally been subject to rigorous selection processes (Stern, 2011). Potential interpreting trainees are required to have an excellent command of their languages on various topics and in various registers and ample general knowledge as well as broad

knowledge of the economic, social, and cultural backgrounds of their languages (*ibid.*). These characteristics are similar to those required for interlingual respeaking training due to the similarity between the two tasks. As subtitlers, interpreters, intralingual respeakers and other language service providers are potential trainees for an interlingual respeaking course, a 'one-size-fits-all' approach to course entry may not be as appropriate as it is for entry into interpreter training.

Since the 1940s, many interpreter training courses have formed around similar curricular components, including concepts of language and communication, language enhancement, area studies, skill training in different modes of interpreting, and professional ethics (Pöchhacker, 2016). Given the need for interpreters to have knowledge of two or more languages in order to carry out the task, bilingual skills must precede any form of interpreter training. The competence profile of professional interpreters tends to include bilingual or multilingual competence, world knowledge, cognitive skills (analysis, attention, and memory), and specific personality traits such as stress management and intellectual curiosity (*ibid.*). Cultural knowledge and competence generally go hand in hand and result from high-level language proficiency (*ibid.*).

Interpreter competence is very similar to translator competence, as previously discussed in this chapter. Scholars in the field have suggested differing approaches to interpreter competence and its integration into interpreter training. Such approaches include a curriculum grounded in general interpreting skills from which specialised translation and interpreting skills can be developed (Amman and Vermeer, 1990), the integration of translation exercises into the early stages of interpreting education (Hônig, 1995), and interpreter education based on translator training and adapted to all translation (Kalina, 1998). Interpreting skills are fundamental to interlingual respeaking training; therefore, the integration of interpreter competence may need to form part of the early stages of training to ensure that trainees activate their language, comprehension, expression, and multitasking skills from the outset.

Liu et al. (2014) suggest that SI expertise is a function of task-specific skills, such as selective processing, efficient output monitoring, and working memory, which are all skills that can be acquired through extensive practice and real-life experience. However, the expertise of a simultaneous interpreter goes beyond task performance and extends to other tasks related to a project, for example, to negotiating working conditions and knowledge acquisition. This also rings true for the expertise required of an interlingual respeaker, as the novelty of the profession means that working conditions

are still under evaluation. Trainees should be equipped with overall project-related skills upon completion of their course so that they are ready to apply them to a professional environment.

Training by apprenticeship has played an important role throughout the history of interpreter training. Apprenticeship gives precedence to practical skills rather than to the scholarly acquisition of abstract knowledge (Sawyer, 2004) and, according to Pöchhacker (2016), entails the transfer of know-how and professional knowledge from trainer to student through exercises modelled around real-life interpreting scenarios. Apprenticeship originally belonged to the workplace as opposed to the education environment, and yet it is not totally equivalent to vocational skills (Schrag, 1992). Most interpreter training programmes are situated in an academic environment; however, interpreter training has always belonged to the realm of apprenticeship (Sawyer, 2004). According to Caminade and Pym (1998), apprenticeship was an effective means of acquiring the skills and abilities needed to interpret before formalised training was introduced. Cognitive apprenticeship focusses on creating an authentic learning environment in which the cognitive demands of learning are the same as those in a professional environment (Sawyer, 2004); therefore, if a professional environment can be created online, apprenticeship for an interlingual respeaker could be delivered via e-learning as it is currently delivered for some subtitling and interpreting programmes.

Online learning is not the only way in which interpreting training is becoming increasingly reliant on technology. Technology in interpreting once consisted of booths with SI equipment and microphones; overtime, it has evolved into the use of videoconferencing systems, live web streaming, online speech repositories, and virtual learning and interpreting environments (Diriker, 2010). The first virtual training platform was pioneered by the Université de Genève in 2004 (Université de Genève). Online learning is a mode of delivery that has taken off in the field, and, for interpreting, it typically consists of the following blocks: introduction, current course updates, lecture, online activities, group projects, glossaries, and links to other online resources (Ibrahim-González, 2011). These blocks fulfil the four basic elements of e-learning building blocks proposed by Israelite and Dunn (2003), which are: presentation, elicitation, evaluation, and collaboration. Videoconferencing is widely used to train interpreters within the European Masters in Conference Interpreting (EMCI), as regular videoconferencing sessions take place between universities and European Union institutions (Diriker, 2010). This method exposes students to diverse settings and allows them to interpret for and receive feedback from other students and native speakers outside of their immediate training group (*ibid.*). The

qualitative results regarding student feedback, presented in Chapter 6 of this thesis, show that students would have liked videoconferencing sessions with trainers and trainees at the beginning and throughout a course so that they could focus on complex aspects of interlingual respeaking, such as the quality assessment models.

### **7.10 Respeaking training**

Training in intra- and interlingual respeaking has already been explored in Chapter 2; therefore, the current training practices in HE and the industry will not be repeated in this section. However, it is necessary to draw upon the existing training models (Arumí Ribas and Romero-Fresco, 2008) and competence models (Pöchhacker and Remael, 2019) to provide a theoretical framework for interlingual respeaking training.

In 2008, Arumí Ribas and Romero-Fresco put forward a practical proposal for the training of respeakers. Although the proposal heavily refers to intralingual respeaking, the identification of the skills required for the task is an essential step towards the design of interlingual respeaking training. The proposal details the skills required for a professional intralingual respeaker and includes the field in which the competence is obtained (subtitling, interpreting, or respeaking), whether the competence is needed prior to the respeaking process or can be obtained during the process, and if it is related to the ST or the TT. Over ten years later, and in response to the demand for interlingual respeaking, Pöchhacker and Remael (2019) drew up a competence-oriented task analysis of interlingual respeaking so as to guide the curriculum design for training. In their definition of interlingual live subtitling, Pöchhacker and Remael (*ibid.*, p. 134) refer to various steps within the interlingual respeaking process: '[It is] a multi-step process involving a primary phase in which source-language audio content is rendered in the target language by a [respeaker], followed by a secondary phase in which the [respeaker's] output is turned into written text by an SR system'.

The competences identified for interlingual respeaking are similar to those that have appeared in various translation competence models (ISO 17100, EMT 2009, EMT 2017). Figure 7.2 illustrates a technical-methodological competence that distinguishes interlingual respeaking from related practices; also, six sub-competences of interlingual respeaking are identified: knowledge of the respeaking task and process, research and preparation, translation, multitasking, audiovisual monitoring and editing

(Pöchhacker and Remael, 2019). Four more general competences are also identified: linguistic and cultural competence, world knowledge and subject-matter competence, (inter)personal competence, and professional competence (*ibid.*).

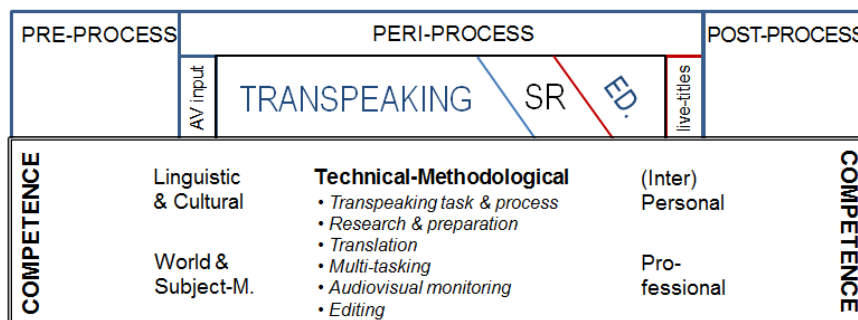


Figure 7.2: Interlingual respeaking process and competence model (Pöchhacker and Remael, 2019, p. 137).

Pöchhacker and Remael (2019) present the first competence model for interlingual respeaking by carrying out a descriptive analysis of the process and identifying the competences that are required to successfully produce interlingual live subtitles. The article aims to guide curriculum design for training in interlingual respeaking, and in doing so, directly relates to RQs 4 and 5 for this project: What are the required task-specific skills for interlingual respeaking? and What is the best-suited professional profile for an interlingual respeaker?

Pöchhacker and Remael’s descriptive analysis sets a conceptual foundation that can be built upon with empirical research. It is in line with the questionnaire results from IO1 of the ILSA project (Robert, Schrijver and Diels, 2019). However, the article does note that further research is required in order to understand how the various competences and sub-competences inform the stages of the respeaking process. This thesis seeks to do just that, and it has already provided further empirical data on the required task-specific skills and best-suited professional profile for interlingual respeaking. It is also expected that a larger experiment will provide empirical data for the required competences, as further linguistic, translation, interpreting, and software tasks and challenges will be identified. Competences and skills for interlingual respeakers will be further explored in Chapter 8.

The hybrid nature of interlingual respeaking is highlighted, suggesting that successful completion of the task should be informed by insights from the related fields of translation, mainly audiovisual, MA, and

interpreting (*ibid.*), as has already been suggested in this chapter. Recognising the different processes involved in the task is essential for training, and, therefore, it makes sense to base the training on the six competences of interlingual respeaking: respeaking tasks and processes, research and preparation, translation, multitasking, audiovisual monitoring, and editing. The article also categorises the tasks and sub-competences into three stages of producing interlingual live subtitles: pre-process, peri-process, and post-process. The competency framework and respeaking process by Pöchhacker and Remael (2019) along with the empirical data gathered from this research project will heavily influence the creation of a training course in interlingual respeaking.

Prior to the interlingual respeaking process, skills from SI refer to researching topics, maintaining glossaries and databases, and teamwork, whereas subtitling refers to technical skills (the ability to use subtitling software), which would be recommended for future training. Just as in the practical proposal put forward by Arumí Ribas and Romero-Fresco (2008), Pöchhacker and Remael (2019) differentiate between pre-process skills, which mainly include preparation. Any prior learning and training could be considered as preparation; however, in this instance, preparation refers to the overall preparatory task that the respeaker is expected to carry out with the SR software. The respeaker can use technical skills (that may come from subtitling) to learn how to work with the software and train it with vocabulary and custom-made commands to develop an extensively trained voice profile, which ultimately leads to fewer recognition errors. Aside from the overall preparatory task, it could be said that there is a pre-process to every respeaking task in which a respeaker would need to use research skills and maintain glossaries and databases (that come from SI) to prepare for individual respeaking tasks.

It is clear that SI is more similar to respeaking in terms of the process and that subtitling is more similar in terms of the end product. This can be seen in the taxonomy of respeaking skills provided by Arumí Ribas and Romero-Fresco (2008), as there are far more skills categorised under SI than under subtitling. During the process and in terms of the ST, listening-comprehension skills and analysis along with synthesis and reformulation skills are required for SI and reformulation, reduction, spotting, and adaptation skills are required for subtitling. Arumí Ribas and Romero-Fresco (2008) identify a crossover period in respeaking in which a respeaker is dealing with the ST and the TT at the same time. During this period, simultaneous interpreters simultaneously receive the incoming message and monitor the outgoing message (listening and speaking at the same time) and so they should be able to manage a live text. This ability comes with an array of characteristics, such as remaining calm and managing

stress and frustration. Due to the pre-recorded nature of subtitling, during the crossover period, a subtitler makes the oral dialogue and written subtitles synchronise. In terms of the TT, skills from both SI and subtitling are needed in order to successfully express the message for the target audience. The skills required are similar, as the message needs to be expressed clearly and concisely and be grammatically correct. The live natures of SI and respeaking mean that simultaneous interpreters already have the skills of live delivery and expression within their skill set. In the competence-oriented model, Pöchhacker and Remael (2019) draw special attention to the need to incorporate teamwork and cooperation into the respeaking task, which applies to the teamwork between interlingual respeakers just as it would apply to simultaneous interpreters working together in a booth.

According to Pöchhacker and Remael (*ibid.* p. 137), the post-process skills are:

Debriefing with team members to identify issues to be resolved; accuracy assessment in the broader context of quality management; and remedial work to eliminate errors and weaknesses with a view to future assignments, for instance by adding terminology to the SR database or further training of the SR software.

Such post-process skills highlight the shift in MA from the quantity to the quality of subtitled content. As demonstrated in Chapter 6, the application of the NTR model to students' respoken texts in the interlingual respeaking course proved to raise awareness of the causes and consequences of translation and recognition errors. This is fundamental to the success of the peri-process, as it allows for respeakers to make informed decisions about the way they respeak an audiovisual text, including the strategies they adopt to produce a live translation and the choices they make when omitting or effectively editing text, dealing with mistranslations, using correct grammar, and maintaining the style of the respoken text.

### **7.11 Modes of training delivery**

One of the main challenges this research faces is creating appropriate training for interlingual respeaking that can be applied to different settings such as HE and the industry. The idea of a wide audience has been touched upon throughout this thesis, and this audience also includes people whose lifestyle may hinder them from attending face-to-face training, whether this is due to mobility issues or



personal or professional commitments; online learning could remove such obstacles. E-learning has been defined by Ko (2015, p. 139) as:

A form of pedagogy that is often used in situations where the teacher and students are not in the same physical location. It can also be used as a means of supplementing face-to-face teaching and learning, referred to as blended learning.

Inclusive translator education and training is complex as it entails many political, ethical, financial, and social implications (Heinisch, 2019). One of the sources for effective curriculum design for interlingual respeaking training, and the most important factor to consider, is the students/trainees who will complete the course. Student diversity has expanded to include a wider range of ages and educational backgrounds and to include people who have other commitments and people who have physical or sensory impairments (*ibid.*). At this stage, due to the infancy of the research in interlingual respeaking, it is perhaps too ambitious to create a training course that caters to everyone. Online delivery is a step in the right direction to allowing as many people as possible to train as interlingual respeakers in terms of overcoming barriers related to location and cost.

The pilot experiment presented in Chapter 4 did not attract many participants since the short training and the experiment were delivered face to face. However, the main experiment, presented in Chapter 5, attracted a much higher number of participants since it was delivered online and participants could work at their own pace. The online interlingual respeaking course at the University of Vigo attracted many people; however, there was a cap of 10 students. The participants that took part in these three experiments are representative of the future potential trainees for interlingual respeaking. All participants had completed an undergraduate degree, and many had completed or were working towards a postgraduate degree. Aside from a postgraduate research degree, the most likely future education for a professional is vocational or professional development courses delivered by HE institutions or in the industry, which professionals may take to further their career. Due to the hybrid nature of interlingual respeaking, which takes the process from SI and the end product from subtitling, interlingual respeaking is likely to attract professional interpreters, subtitlers, intralingual respeakers, and other language professionals.

As society moves online, so does education, and online and blended courses are becoming increasingly popular as e-learning appeals to a wide audience due to its convenience and flexibility. For this research

this mode of delivery has appealed to larger numbers of participants. Online training could also help to meet the needs of a busy professional, allowing them to complete course material at their own pace and decide when and where their learning takes place; additionally, this supports a social-constructivist approach to learning. Trainees would also need to be made aware of the reality of respeaking professionally, as deadlines are imperative and respeaking tasks need to be carried out live. Situated learning tasks would allow trainees to experience the real pressure of the task. One way of ensuring that online or blended modes of delivery for interlingual respeaking training is made further accessible is to include open educational resources. MOOCs have recently become popular in the field of translation and interpreting studies. MOOCs are open and participatory, and they foster lifelong networked learning by encouraging students to collaborate during learning and engage in the learning process, again reflecting a social-constructivist approach to learning. The zero-cost element of a MOOC to trainees adds another layer of accessibility to online education by removing the financial barrier that some learners may have. It is for this reason that the training course presented in Chapter 8 favours online learning as opposed to face-to-face learning.

### **7.12 Final thoughts**

Given the considerations on training discussed above, it will follow that a learner-centred approach that focusses on building training around the task-specific skills and competences required for interlingual respeaking, in other words, a social-constructivist competence-based approach, is at the heart of the proposed training in the next chapter. The flexibility of approaches and the fact that they are not mutually exclusive but that they benefit from being combined suggests that it may not be possible to select just one approach to designing interlingual respeaking training. Different approaches could be used for different stages of interlingual respeaking training to suit the learning objectives of that particular stage, which are expected to match the stage of the respeaking task being trained. For example, a process-centred approach will be taken when training the peri-process skills required for interlingual respeaking, and a product-centred approach will be taken to train the post-process skills, accounting for the shift in focus from the process of the task to the quality of the product. Various situated learning tasks throughout the course will highlight the practical and professional focus of training. A profession-oriented approach will be visible from the outset, as the learning objectives should respond to the industry demands to prepare trainees for any professional work that may follow being trained as an

interlingual respeaker. A fundamental part of training for interlingual respeaking would be to include existing elements of subtitler, interpreter, and intralingual respeaker training structures, such as incorporating the skills and competences required for each task while taking the future of the profession into consideration; training by apprenticeship, the use of online training, and including a balance of theoretical and practical elements of training would also be beneficial.

Now that approaches to translator and interpreter training have been outlined and the reasons as to why each approach is relevant to interlingual respeaking training have been discussed, the following chapter will bring together the empirical results from the pilot experiment, the main experiment and the interlingual respeaking course, and the theory discussed in this chapter to create a research-informed training model and a training course for interlingual respeaking.

# Chapter 8

## A research-informed training model for interlingual respeaking

### **8.1 Introduction**

The relevant approaches to translator training and various perspectives on translator competence and curriculum design presented in Chapter 7 can now be used to lay the foundations of a training model for interlingual respeaking. At this stage, theory will come together with the empirical research carried out on the interlingual respeaking performance of participants with subtitling and interpreting backgrounds as presented in Chapters 4, 5, and 6.

The purpose of this chapter is to propose an outline for a training model for interlingual respeaking that will act as a foundation upon which to base a proposal for a training course. It is hoped that components of the training model could separately integrate within undergraduate or postgraduate programmes in translation or interpreting education and inform in-house courses or vocational training.

First, informed by the empirical results, the task-specific skills and competences required for interlingual respeaking are presented within an existing competence framework. Detailed overviews of the skills required from subtitling, interpreting, and respeaking follow. Learning outcomes are the basis for any training programme, so a set of learning outcomes is presented before the training course. A lengthy section of this chapter presents a proposal for an interlingual respeaking training course. The proposal dissects each module and recommends suitable training material and exercises. Personal interpretations and reflections of the main experiment and the interlingual respeaking module and how they have informed training are disseminated throughout this chapter.

### **8.2 Task-specific skills required for interlingual respeaking**

Kelly (2010) suggests a starting point for translator training is to provide a description of what professionals are actually required to do. The following attempts to provide a brief description of the

role of an interlingual respeaker in the UK and Spain: Before the task, an interlingual respeaker researches terminology that is specific to the TV programme or live event and prepares the SR software with this vocabulary. During the task, an interlingual respeaker listens to the original audio of a TV programme or live event in one language and respeaks it (essentially simultaneously interprets it) into another language while enunciating punctuation and adding special features such as sound labels; errors are corrected immediately after the live translation is completed, as a respeaker monitors the on screen output and uses voice commands or the keyboard to correct errors that occur. After the task, an interlingual respeaker is expected to reflect on the results of their performance and to train the SR software with any new or misrecognised terms that, upon reflection, may be required for future projects. An interlingual respeaker may also be expected to carry out a formal analysis of the respoken text using a quality assessment model.

Arumí Ribas and Romero-Fresco (2008) divided skills into two categories: (1) skills that are required prior to the process, namely, software-related skills, preparation skills, and strategic skills; and (2) skills that are required during the process, such as comprehension, reformulation, multitasking, and live, synchronisation, production, and delivery skills. The description of the role of an interlingual respeaker accounts for the three stages of the respeaking process: the pre-process, peri-process, and post-process. These stages were first outlined in Pöchhacker and Remael's (2019) competence model, which accounts for the recent focus on quality within MA. Aside from the top five task-specific skills identified from the main experiment (multitasking, live translation, dictation, language, and comprehension), other skills that originate from subtitling or interpreting were identified from the qualitative data gathered from participants' performance and from their personal opinions. Figure 8.1 categorises the task-specific skills required for interlingual respeaking, that have been found through this research, and groups them according to which stage of the task they are required in. The four skills on the far right are required during more than one stage of the respeaking process.

|              |  |                  |                             |                  |               |
|--------------|--|------------------|-----------------------------|------------------|---------------|
| PRE-PROCESS  | Research-mining skills<br>Cultural knowledge<br>Familiarisation with SR and subtitling software  | Working at speed | Technical ability/knowledge | Long-term memory | Interpersonal |
| PERI-PROCESS | Multitasking<br>Live translation<br>Dictation (and punctuation)<br>Language<br>Source language comprehension<br>Target language expression<br>Error correction<br>Edition<br>Short-term memory |                  |                             |                  |               |
| POST-PROCESS | Critical analysis<br>Reflection  |                  |                             |                  |               |

Figure 8.1: Task-specific skills categorised into the pre-, peri-, and post-process stages.

### 8.2.1 Pre-process skills

Pre-process skills refer to those that are needed before the main interlingual respeaking task takes place. Preparation is noted as the main requirement of the pre-process phase, and pre-task activities must be carried out for optimal respeaking performance, including familiarisation with the SR software, researching the topic that will be respoken, and searching for terminology.

For subtitling, research can be carried out on the job as it is not live, but even then, long-term memory of popular knowledge could still be beneficial and help save time while working. Just as knowledge of current affairs is important for interlingual respeaking, so is cultural knowledge, as working between two languages requires familiarity with the respective sociocultural systems of reference making cultural competence essential to acquire ‘given the highly varied speaking styles and cultural backgrounds encountered in programmes to be subtitled’ (Pöchhacker and Remael, 2019, p. 140). As previously mentioned, unless they work in pairs respeakers do not have the luxury of being able to search for terminology or research topics in order to provide accurate translations while they work. Instead, respeakers must acquire and obtain a sound cultural understanding of their working languages so that they can avoid any cultural mistranslations.

## **8.2.2 Peri-process skills**

Peri-process skills refer to those required to carry out a live translation. Special attention has been given to interpersonal skills (teamwork) and cooperation in the peri-process phase, which include the actual task of respeaking, producing a spoken output, a written output, monitoring and correction. Pöchhacker and Remael (2019) have identified the following skills: listening comprehension, strategic reformulation, dictation and monitoring, and coordination and control. The main experiment shed light on the top five task-specific skills, which are all peri-process skills since that is the stage of the respeaking process that the participants worked in. Pöchhacker and Remael's (2019) classification of skills serves to guide the curriculum design and to develop task-specific teaching methods for interlingual respeaking; therefore, it is a fitting competence model for this research.

### **8.2.2.1 Multitasking**

The similarities between SI and interlingual respeaking mean that many skills required for SI are transferable to respeaking; meanwhile, the differences between the two tasks may highlight the skills that interpreters need to further develop. The process of listening and speaking at the same time is the most obvious similarity, calling for multitasking and verbal communication. There is less of a need for verbal communication in respeaking, given the requirement of speaking in a robotic voice and the focus being on the textual output that is produced. The complex multitasking nature of SI has been described by Gerver (1971) as follows:

Interpreters receive and understand a unit of meaning and begin to mentally translate it and verbally formulate it. At the same time, they receive and understand a new unit of meaning while still occupied in the vocalisation of the previous one. Thus, they must be able to retain the second unit in their memory before beginning the interpretation; while they formulate the second unit, they receive the third unit, and so on successively.

This description of the multitasking process of listening and speaking at the same time in SI can be applied to interlingual respeaking. It highlights that respeakers are not only required to listen in one language and speak in another, but that there are also elements of multitasking within that process, as simultaneous interpreters and respeakers constantly deal with more than one unit of meaning. Furthermore, respeakers must monitor their written output and edit or correct it as appropriate while dealing with technology, which proved to be a problem for many inexperienced participants in the main

experiment. The process of interlingual respeaking is as though a respeaker has been asked to carry out different tasks while already multitasking.

### **8.2.2.2 Live translation**

Translation skills are required by both respeaking and subtitling, but the live nature of respeaking means that it requires live translation skills, whereas pre-recorded subtitling only requires regular translation skills. It is understood that a pre-recorded subtitler must be able to provide fast and accurate translations to keep up with the demand for work; however, the live translation skill that is required for interlingual respeaking differs. As explained in Chapter 5, live translation also encompasses other skills such as multitasking and short-term memory further highlighting the similarity between interlingual respeaking and SI. Section 8.7.2 discusses the incorporation of sight translation into interlingual respeaking training.

### **8.2.2.3 Dictation (and punctuation)**

Dictation is one of the most important skills for respeaking, as respeakers must dictate a live translation clearly and without hesitation to facilitate the understanding of the SR software. The difference in the input of translation between respeaking and subtitling means that this skill becomes more complex for respeakers as they must enunciate punctuation as part of the dictation process; neither interpreters nor subtitlers are familiar with this process.

Simultaneous interpreters are accustomed to speaking with good diction, timbre, and articulation to make their interpretation pleasant for a human audience to listen to (Arumí Ribas and Romero-Fresco, 2008). However, a respeaker must dictate their live translation in a slightly robotic tone that is flat and monotonous (*ibid.*). Interpreters are accustomed to speaking in a clear voice and vocalising live translations, but, when respeaking, they need to dictate and enunciate punctuation. This may require interpreters to ‘unlearn’ speaking in a pleasant tone, and instead speak in a monotonous tone for the SR software to recognise the speech.

Differences also exist between the audiences and the output of SI and respeaking. Both practices ultimately end in a text being made accessible for a human audience, but one is more direct than the



other. A simultaneous interpreter interprets directly for a human audience that listens to the interpretation, whereas a respeaker speaks into SR software which turns the utterances into on-screen text that a human audience can read. Therefore, a respeaker must consider two audiences: one for the spoken output and one for the written output.

#### **8.2.2.4 Language**

In subtitling, language doubts can be swiftly remedied on-the-job using dictionaries and self-prepared glossaries. Having strong comprehension and expression in the working languages can help to avoid this as much as possible and allow subtitlers to work faster to meet the tight deadlines required of them. Due to the live nature of interlingual respeaking, one cannot search for terms on the job, but rather they must work under the pressure of understanding the ST with ease and must work at speed to reproduce the message into a different language. Therefore, language preparation for respeaking must be carried out during the pre-process and the post-process as points of revision and improvement.

#### **8.2.2.5 SL comprehension**

Comprehension has been defined as a fundamental prerequisite in the interpreting process and as re-expressing what one has understood into another language (Pöchhacker, 2015). This definition emphasises that although dealing with two different languages, SL comprehension goes hand in hand with TL expression are equally important when producing a live translation and require a proficient level of at least two languages.

The way the (live) subtitler receives the text is the same, as both tasks deal with a ST via audiovisual means. However, ST comprehension may be harder to achieve with oral texts than written ones. Aside from any textual information on-screen, a respeaker will only ever hear the ST, whereas a subtitler will hear it and, depending on the subtitling task, may also be able to read the template file of the intralingual subtitles or the script, which facilitates comprehension. In an empirical study on postgraduate students, Fraser (2014) suggests that ST comprehension can affect the TT, as a substantial amount (60%) of translation errors were due to poor ST comprehension. As explained by Díaz-Cintas (2001, p. 199), 'the aim of any translation is to reformulate a SL message in a given TL, avoiding at all costs any misunderstandings in the process'; this highlights ST comprehension and TL expression as essential

skills, whether they be used in an audio or written form, that are necessary for both respeaking and subtitling.

#### **8.2.2.6 TL expression**

Differences between translation and live translation call for different forms of TL expression. Subtitling requires direct written expression, whereas interlingual respeaking requires that the live translation be vocalised (verbal expression) to appear as written text. Making the translation available in two modes complicates the interlingual respeaker's job, as they must monitor their vocal output and check that the written output accurately matches it while trying to pay attention to potential errors (Arumí Ribas and Romero-Fresco, 2008).

#### **8.2.2.7 Error correction**

The pilot and main experiments did not see much error correction by participants; however, after lengthy training, the trainees who completed the University of Vigo course (presented in Chapter 6) managed to develop strategies for error correction. Edition and translation errors proved to be the most difficult to spot and correct, this could be because the errors were caused solely by participants and were made as a result of their decision-making during the interlingual respeaking process. In comparison, recognition errors are much easier to spot whether they are minor, major, or critical. In Module 3 of the University of Vigo course, trainees corrected their errors live using voice commands and the keyboard to highlight the error and either respeak or type the corrections. Minimising errors begins in the pre-process stage of respeaking through extensive voice profile training and introducing terminology that may not be recognised during dictation, thereby fine-tuning voice profiles and minimising error rates (Arumí Ribas and Romero-Fresco, 2008).

#### **8.2.2.8 Edition**

Edition may be understood as any modification of the original text; it could consist of adding, omitting, reformulating or condensing the ST (Romero-Fresco and Martínez, 2015). Edition in respeaking entails editing a text live shortly after listening to the source audio and respeaking the previous sentence.

However, edition of subtitling takes on a different form since a subtitler must usually revise the whole subtitling job before its completion. In the UK and Spain, respeakers carry out their own edition, but as explained in Section 2.5.2, the respeaking process and edition strategies can differ depending on the country. An advanced process has been put in place in France which involves up to four people looking for potential errors and correcting them should they occur (Caschelin, 2013).

Editing strategies include reformulation and condensation. Reformulation is a necessary part of the language transfer process to ensure that the message makes sense in the TL. This is another skill required for both tasks that is made more complex by the live element of translation in respeaking. Respeakers and subtitlers often need to apply text-reduction strategies to overcome the difficulties, such as multiple turn-taking, overlapping dialogue and the use of famous names, geographical references, and names and institutions (Romero-Fresco, 2011). A subtitler has the benefit of being able to contemplate how they will reformulate the text and can experiment with different structures, while an interpreter and a respeaker must reformulate on the spot.

Subtitles are nearly always a reduced form of the oral ST (Díaz-Cintas and Remael, 2007). Text reduction can either be in the form of partial or total reduction. Partial reduction uses condensation and a concise rendering of the ST, while total reduction uses omissions (*ibid.*). As explained in 5.2.2, when editing text, condensation is necessary either to adhere to subtitling limitations, such as the number of characters per line, timing, or shot changes or to keep up with a fast-paced ST in interpreting and respeaking. Partial and total text-reduction strategies, while necessary in subtitling, can be penalised in interlingual respeaking unless the text reduction is deemed to be an effective edition. As seen in the main experiment, some subtitlers experienced difficulty with text reduction due to having to vocalise a live translation, keep up with the ST and introduce effective editions instead of omissions, whereas interpreters were able to manage condensation better and effectively edited the text.

#### **8.2.2.9 Segmentation**

An advantage that subtitlers may have over interpreters when it comes to respeaking an audiovisual text is their familiarity with segmentation. To ensure that an audience can understand subtitles in the short time they appear on-screen, subtitles should be structured in a way that achieves semantic and syntactic sense (Díaz-Cintas and Remael, 2007). It is not always possible to include full sentences on

each line of a subtitle; therefore, it is essential to divide the text into separate parts while following grammatical considerations for the audience to follow the subtitles with ease. Subtitlers may find that their knowledge of segmentation is useful for respeaking, as respeakers are required to pause for at least one second for the respoken text to be released on screen. The live nature of respeaking may not allow respeakers to focus on line breaks as much as in pre-recorded subtitling; however, it may help to release text at appropriate times, which would facilitate audience comprehension. However, the need for pauses is dependent on the SR software being used, as some software does not require pauses for text to be released on-screen; an example of this is Web Captioner. Pausing is something that interpreters may struggle with, as they would be used to interpreting without pausing to release their words to the audience. Participants and trainees who took part in this research generally struggled to remember to make pauses, noting that it felt unnatural.

#### **8.2.2.10 Short-term memory**

Aside from live translation skills, the live nature of interlingual respeaking calls for quick thinking and short-term memory skills to deal with the speed at which a live translation must be delivered. From an interpreting perspective, memory has been defined by Pöchhacker (2015, p. 108) as:

A major determinant of efficiency in interpreting [that] comprises processes involved in acquiring information, retaining it for a period of time and subsequently retrieving it when needed [...] classical models of memory (Atkinson and Shiffrin, 1968) divide it into three basic categories: sensory memory, short-term memory and long-term memory.

Information is retained in short-term memory for about 20 to 30 seconds and can move to long-term memory with rehearsal or repetition (Pöchhacker, 2015). Inevitably, there is a delay in SI due to reformulating the message into a different language; however, an increased delay may take place in interlingual respeaking given a respeaker's other tasks. Such a complex task may lead to an overall increased delay and eat into the time that the respeaker has for their short-term memory. It is hoped that the delay in interlingual respeaking would not reach the 20 second mark; however, such a complex task may take its toll on short-term memory and decrease the amount of time that information is retained for, thereby increasing the delay of a respoken text.

### **8.2.3 Post-process skills**

The post-process is the stage that begins after the main interlingual respeaking task has taken place. This stage deals with carrying out quality assessment of live subtitles and, in relation to interpersonal skills, having team debriefs. The post-process is a chance to reflect upon performance with a view towards future improvement. Depending on the setting in which the interlingual respeaker finds themselves, such as if they are working remotely, the post-process may not occur at all.

#### **8.2.3.1 Critical analysis**

Depending on whether the respeaker works as a freelancer or for a company, a formal quality assessment process may take place in the form of an NTR analysis of the respoken text. A respeaker would analyse their respoken text to identify translation and recognition errors and effective editions to assess the accuracy of the respoken subtitles. As a respeaker may be required to assess their own work, it is important for a respeaker to reduce any subjectivity in scoring. This requires a respeaker to critically assess their respoken text by focussing on the impact that their errors and effective editions may have had on an audience and how it affects the way an audience receives a text.

#### **8.2.3.2 Reflection**

Reflection entails a respeaker taking the results of their respoken text and reflecting on their performance to identify what they did well and what could be improved. Being able to reflect on these points will allow a respeaker to carry out remedial work to eliminate errors and weaknesses in future respeaking tasks (Pochhacker & Remael, 2019). For example, if an interlingual respeaker has been working alone, they may want to reflect on their performance by going through their respoken text to find terms that were misrecognised and train the SR software to prevent future errors. If the respeaker has been working in a team, a team debriefing may take place to discuss how the process worked; this debriefing could also include an analysis of the errors encountered and a discussion of how to avoid them.

## **8.2.4 Ongoing skills**

### **8.2.4.1 Working at speed**

The live nature of interlingual respeaking versus the pre-recorded nature of interlingual subtitling means the skills are used in different ways and are usually dictated by time pressure where interlingual respeaking is concerned.

There is a constant time pressure during the peri-process of respeaking due to the live nature of the task. However, in pre-recorded subtitling, the subtitler marks the pace and not the audiovisual text. Speed is a skill that is shared by SI and respeaking, as both tasks require verbal agility as soon as the message is received in the SL (Arumí Ribas and Romero-Fresco, 2008) to reproduce the message in the TL with the least possible delay. This requires quick thinking to comprehend the message, reformulate it, and express it while also processing the next unit of information. According to Riccardi (2015), studies have shown that, in English, the speech rate has an impact on listening comprehension, which begins to decline at approximately 150 wpm until 250 wpm, where comprehension sharply decreases. Lederer (1981) determined that 150–170 wpm is the point beyond which SI cannot be performed (Riccardi, 2015). This could pose a concern for interlingual respeaking, as live TV broadcast can exceed the 170-wpm threshold for performance in SI. Due to its extra complexity, interlingual respeaking may prove to have an even lower threshold. Given time and space constraints, this is not something that can be explored further in this thesis, but it may be a useful avenue for future research.

As mentioned in Section 8.2.3, during the post-process stage, there may be an opportunity to debrief the respeaking project with other colleagues. However, time is also needed to introduce new terms into the SR software and to retrain misrecognised words. There could be a tight timeframe to carry out a quality assessment.

### **8.2.4.2 Technical skills**

Technical skills are a necessity for respeakers and subtitlers to be able to manage the SR and industry standard subtitling software. Technical skills can also aid one's ability to convey extralinguistic information; for example, using different colours to identify different speakers and using labels to identify other sounds can be easier when one has a thorough understanding of the software. A respeaker requires an extensive level of software knowledge and technical skills to know how to make live

corrections to the text as they work. A subtitler only requires a sound working knowledge of subtitling software to produce good subtitles; however, in addition to this ability, a respeaker must be able to react instantly to any technical issues that may arise while they are working, which again is put down to the live aspect of the task.

Another aspect of respeaking that interpreters are not as familiar with is the use of software. Software skills are a must for a respeaker since a respeaker will typically work in a booth with a microphone attached to SR software; the task requires the constant use of software for dictation and correction purposes as well as the use of software for audiovisual material when respeaking live TV broadcasts. Interpreters are not used to working with as much software, but are familiar with hardware, such as using a microphone in a booth, which depends on the setting; and a computer for thematic and lexical preparation through glossaries, databases, and terminology searches, depending on the topic.

#### **8.2.4.3 Long-term memory**

Long-term memory skills are required for storing information about current affairs, and this may come 'naturally' to a respeaker. For example, if respeaking the news, a respeaker may feel as though they 'automatically' memorised the information as it was being recited, due to the genre's repetitive nature throughout the day, and subsequently stored it in their long-term memory. Pöchhacker and Remael (2019, p. 140) state that respeakers, 'like interpreters, must be able to draw on a vast store of general and specialised knowledge, and mobilise these resources with great efficiency'; they also note the 'considerable overlap between world knowledge, linguistic competence and cultural competence' (*ibid.*), which may ultimately allow for better performance as SL comprehension is improved and less time is spent thinking about how to reformulate the message.

#### **8.2.4.4 Interpersonal skills**

Although the job of an interlingual respeaker seems like a solitary job, interpersonal skills are particularly important skills to have. Interpersonal skills include teamwork as a way of working, which not only refers to other human interlingual respeakers but also to the SR software, which must be treated as an ally. Special attention is given to teamwork and cooperation in the peri-process stage; this could apply to the teamwork of interlingual respeakers and to simultaneous interpreters who may be working in tandem

or in duo-respeaking (Pöchhacker and Remael, 2019). Due to the complexity of interlingual respeaking, it may be more common for a team of respeakers to work together to provide live subtitles for a TV broadcast or a live event than for one respeaker to work alone. Simultaneous interpreters frequently work in relay or in teams to interpret in tandem. As interlingual respeaking is a more complex task than interpreting due to the requirements of enunciating punctuation, monitoring the output, and correcting errors live, it may be appropriate for interlingual respeakers to work as a team as they do in France (see Section 8.2.2.8).

### **8.2.5 Transferable skills**

As previously noted, the potential trainees for an interlingual respeaking course are expected to be current translation or interpreting students, recent graduates, or professional translators, interpreters, or language specialists. For some training institutions and job profiles, educational prerequisites may be required, such as having already obtained an undergraduate degree, equivalent vocational qualifications, or professional experience. Therefore, trainees would be expected to have already picked up various transferable skills from previous education and professional experience. These skills could include critical thinking, time management, oral and written expression, project organisation, ability to work alone, etc. According to Heinisch (2019), one way of improving the employability of translation students is to broaden their transferable skills. Transferable skills are characteristic of those typically acquired by all translation graduates at a particular level and demonstrate that the translation graduate is not only a translator, but also a graduate (Kelly, 2010). These transferable skills form generic competences as opposed to specific competences, which are formed by the skills required for the specific task at hand. Therefore, the training model presented in Section 8.4 will focus on developing the task-specific skills detailed so far to develop specific competences fundamental to interlingual respeaking, although generic competences will also be required to carry out the tasks.



## 8.2.6 A categorisation of the task-specific skills

Figure 8.2<sup>19</sup> has been adapted from Dawson (2018) and Pöchhacker and Remael (2019).

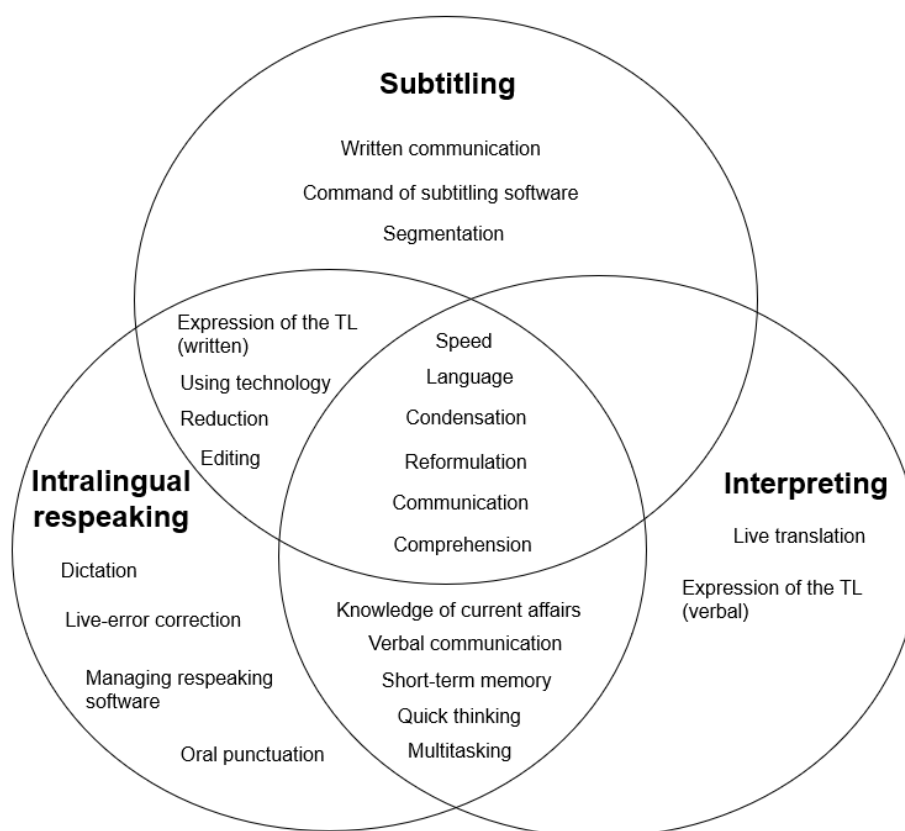


Figure 8.2: Task-specific skills categorised according to their origin.

It situates the skills mentioned in the above subsections and categorises them as being skills that come from subtitling, interpreting, or respeaking or as skills that are shared between all of these tasks. The high number of shared skills in the middle section emphasises the similarities between respeaking and interpreting and the number of skills that are required to listen and speak at the same time. The skills noted in the intralingual respeaking section are skills that are needed for the extra tasks that come with respeaking a text, such as dictating the live translation to SR software while enunciating punctuation and correcting errors live. The presence of only two skills in the interpreting section emphasises that the vast majority of skills required for SI are also essential for interlingual respeaking.

Differences lie between subtitling and respeaking and include the translation situation (offline/live) and the translation mode (written/oral) (Romero-Fresco, 2011). For subtitling skills to become useful for

<sup>19</sup> This figure also appears in Section 5.9.

interlingual respeaking, the skills must be adapted to respond to the live nature of interlingual respeaking, such as translation to live translation, written punctuation to oral punctuation, and edition and revision to live-error correction. According to Romero-Fresco:

Subtitlers usually provide a written-to-written translation and respeakers usually provide an oral-to-oral translation; therefore, it could be said that respeaking is to subtitling what interpreting is to translation – a leap from the written to the oral without the safety net provided by time' (*ibid.*, p. 48.).

### **8.3 Competences required for interlingual respeaking**

Now that the task-specific skills for interlingual respeaking have been identified and classified as per the pre-, peri-, and post-process stages of the task, they must be grouped into the required competences. It has already been noted that Pöchhacker and Remael's (2019) competence model is the most suitable model upon which to base this grouping.

Chapter 7 details various approaches to translator competence, coming with a multitude of definitions and competence models. The definition of competence by Robert et al. (2017) will be drawn upon here for two reasons. First, it is the definition that was adopted by Pöchhacker and Remael (2019) to create this competence model, and, second, it approaches competence from a broad perspective and entails three different types of competence: declarative knowledge (knowing *what*), procedural knowledge or skills (knowing *how*), and socio-psychological resources (having the willingness and ability to work in a team).

Five main competences have been identified within the competence model and are split between specific and generic competences. The technical-methodological competence is a specific competence with six sub-competences pertinent to the interlingual respeaking task. The remaining four components are generic competences, which are specified as linguistic and cultural competence, world knowledge and subject matter competence, (inter)personal competence, and professional competence. In Tables 8.1 and 8.2, the task-specific skills that were identified by this project's empirical research have been grouped under each competence. The task-specific skills that are believed to aid the acquisition of multiple sub-competences have been marked more than once to reflect their importance in the interlingual respeaking process.

| Task-specific skills        | Specific competence 1: Technical-methodological |  |                               |                                |  |                           |
|-----------------------------|---|--|-------------------------------|--------------------------------|--|---------------------------|
|                             | Sub-competence 1: Respeaking task and process   | Sub-competence 2: Research and preparation | Sub-competence 3: Translation | Sub-competence 4: Multitasking | Sub-competence 5: Audiovisual monitoring | Sub-competence 6: Editing |
| Condensation                |   |  | X                             | X                              |  | X                         |
| Critical analysis           | X   |  |                               |                                |  |                           |
| Dictation (and punctuation) | X   |  |                               | X                              |  |                           |
| Error correction            |   |  |                               | X                              | X  | X                         |
| Language                    | X   | X  | X                             | X                              | X  | X                         |
| Live translation            | X   |  | X                             | X                              |  | X                         |
| Long-term memory            |   | X  |                               |                                |  |                           |
| Multitasking                | X   |  |                               |                                |  |                           |
| Reflection                  | X   |  |                               |                                |  |                           |
| Reformulation               |   |  | X                             | X                              |  | X                         |
| Research                    |   | X  |                               | X                              |  |                           |
| Segmentation                | X   |  |                               |                                | X  |                           |
| Short-term memory           | X   |  |                               |                                | X  |                           |
| SL comprehension            | X   |  |                               | X                              |  |                           |
| TL expression               | X   |  |                               | X                              | X  | X                         |
| Technical                   | X   | X  |                               |                                |  |                           |
| Working at speed            |   | X  | X                             | X                              | X  |                           |

Table 8.1: Classification of task-specific skills required for specific competences.

| Task-specific skills         | Generic competence 1: Linguistic and cultural | Generic competence 2: World knowledge and subject matter | Generic competence 3: (Inter)personal | Generic competence 4: Professional |
|------------------------------|---|--|---------------------------------------|------------------------------------|
| Communication                |   |  | X                                     | X                                  |
| Critical analysis            |   |  | X                                     |                                    |
| Cultural knowledge           | X   |  |                                       |                                    |
| Knowledge of current affairs |   | X  |                                       |                                    |
| Language                     | X   |  |                                       |                                    |
| Reflection                   |   |  | X                                     |                                    |
| Research                     | X   | X  |                                       |                                    |
| Interpersonal                |   |  | X                                     | X                                  |
| Working at speed             |   |  |                                       | X                                  |

Table 8.2: Classification of task-specific skills required for generic competences.

The task-specific skills and competences presented in this section have informed the training model (see Section 8.4) and have been operationalised into learning outcomes (see Section 8.5).

#### **8.4 A proposal for a training model for interlingual respeaking**

Before presenting the training model, it is useful to outline and compare information that has been sourced from the industry and academia. In the industry, and in the UK specifically, respeaking training can last anywhere from three weeks to three months. Respeakers for Independent Media Support and Red Bee Media create and train their voice profiles, respeak real-life materials, and take respeaking tests to receive feedback for further training (Romero-Fresco, 2011). In Spain, the training for Red Bee Media appears to be the same as in the UK, except that it lasts for three to six months. Efforts were made to gather updated information on respeaking training in the industry, but the researcher did not receive any responses.

The absence of streamlined training has resulted in respeaking training programmes at university level being few and far between (Romero-Fresco, 2018). Sections 2.6.2 and 2.6.3 outline the current intralingual respeaking training and the introduction of interlingual respeaking training at a handful of European HEIs. Given the scarcity of university education and training that covers respeaking, training on the job is common, and it is not unusual for candidates to have not previously worked as a respeaker. Survey-based research (IO1 of the ILSA project [Robert, Schrijver and Diels, 2019]) shows that 63% of broadcasters and service providers stated that candidates are required to carry out aptitude tests, such as a grammar and spelling test, combined with either a respeaking or subtitling test.

Respeaking training that takes place in a university setting is likely to be dictated by a standard academic course structure and calendar. The IO1 results from the ILSA project show that course duration in European HEIs can vary from one hour per week for eight weeks to two hours per week for 28 weeks (Robert, Schrijver and Diels, 2019). The training model presented in this thesis proposes that trainees spend three to four hours per week over 24 weeks on respeaking tasks, which could lead to 96 hours of training. In a university setting, this would be equivalent to a year-long respeaking module consisting of two-hour sessions over 24 weeks along with two hours of independent study per week. This model is expected to be situated within a specialised postgraduate degree programme such as AVT or SI and forms the foundation of a course, which can be adapted to university course structures, such as assigning credits to each module.

Intralingual respeaking in UK HEIs typically forms part of a subtitling module on specialised postgraduate degree programmes. Some examples include respeaking as a compulsory module in AVT

postgraduate degree programmes at the universities of Roehampton and Leeds. At Roehampton, respeaking is taught as part of the 30-credit module on 'Media Access: Audiodescription, subtitling for the deaf and respeaking' and it requires subtitling skills as a prerequisite (Z. Moores, University of Roehampton, personal communication, January 3, 2020). Three sessions of three and a half hours each are delivered; the first session introduces respeaking and allows students to complete listening/interpreting exercises before dictating to Dragon. The second session covers the causes of errors, and students carry out a ST analysis to identify words to add to Dragon before respeaking. The third session covers theory on how Dragon works, respeaking quality (using the NER model), and respeaking in different settings. Respeaking practice focusses on two subject areas, choosing from the news, weather, entertainment, and sports/politics. At Leeds, respeaking is part of a 15-credit module on 'Subtitling and Respeaking for Deaf and Hard-of-Hearing Audiences'. Efforts were made to source specific information about the sessions for this module but to no avail.

Similar to the UK, respeaking training in Spain tends to form part of AVT programmes at postgraduate level. At the Autonomous University of Barcelona (UAB), a respeaking module forms part of the master's programme in Audiovisual Translation. Two three-hour face-to-face sessions introduce respeaking with an introduction to live subtitling and respeaking, creating a user voice profile, and initial respeaking practice (P. Romero-Fresco, GALMA, personal communication, January 2, 2020). This is followed by four sessions (two three-hour sessions and two two-hour sessions) on respeaking practice. The sessions are currently being planned, but material will cover TV and live events. As the course is taught face-to-face, attempts will be made for students to read out speeches for other students to respeak them live as well as introducing the role of a live corrector. (S. Bonjoch Llaquet, UAB, personal communication, February 16, 2020). At the *Universidad Europea Valencia*, two four-hour face-to-face sessions are delivered as part of the master's programme in Audiovisual Translation. Similar to what is delivered at the UAB, course content includes an introduction to live subtitling and respeaking, creating a voice profile, and initial respeaking practice. This is followed by practice with macros (custom commands), exploring respeaking different genres, and NER analysis.

Regarding the content covered, aside from live-subtitling methods and the NER model, the amount of theory covered in current respeaking training is minimal. Again, this could be put down to the limited amount of time being dedicated to respeaking training. The training model proposed in Figure 8.3 incorporates theory in the form of a four-week module on 'Media Access', as well as extensive quality

assessment work in the intra- and interlingual respeaking modules. Although respeaking is primarily a practical task, it is essential for trainees to understand where respeaking is situated within the broader picture of AVT and MA and to fully understand the wide audience that they are producing interlingual live subtitles for. There are many similarities in content, such as introducing different TV genres, the use of custom commands, and quality assessment, which have all been included in this training model as important aspects of respeaking.

Competence-based training focusses on the acquisition of skills and offers a structured approach to planning training based on outcomes that are required to meet industry needs (Calvo, 2011). So far, the design of the training model has adopted a competence-based approach to curricula design, as the task-specific skills were identified, grouped into specific and generic competences, and then operationalised into learning outcomes. On a macro level, the training model takes on an overall social-constructivist approach (Kiraly, 2000), in which the learner is at the centre, as well as a systematic approach that encourages learning outcomes based on learner and industry needs and which includes trainers sharing knowledge of present and future trends and contacts within the industry (Kelly, 2010). On a micro level, a task-based approach (Li, 2014) is taken to ensure that individual tasks focus on the task-specific skills required for interlingual respeaking. It is believed that a social-constructivist approach to translator training can in fact coexist with a task-based approach if the former provides the main approach to training and the latter is introduced at task level (Marco, 2004).

Readings on training strategies and educational theories, results of the experimental research (Chapters 4, 5, and 6) and approaches to translator training (Chapter 7) were used to develop a research-informed training model for interlingual respeaking (presented in Figure 8.3). This training model was informed by several disciplines and was built upon skills, competences, and learning outcomes. The main goal of the training model is to offer trainers a structured approach to planning training and to prepare trainers to organise and present course material for interlingual respeaking. It is hoped that the model encourages logical and progressive course design; as well as the inclusion of discussions that reinforce learning. In other words, the training model aims to act as a framework upon which to base interlingual respeaking training courses. The development of the training model has led to a proposal for a training course, which is an instantiation of the model. The research-informed training course (presented in Section 8.7) presents a series of detailed units and topics for each module and

discussion point; including materials and assessment designed to teach task-specific skills for interlingual respeaking.

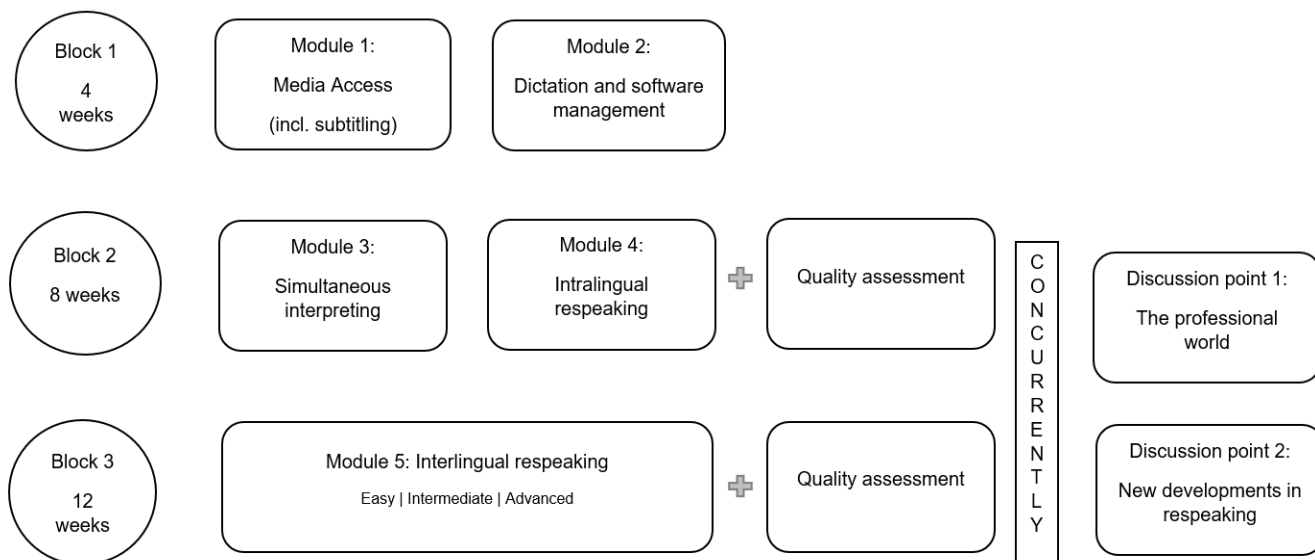


Figure 8.3: A research-informed training model for interlingual respeaking.

The training model consists of three different time blocks: four weeks, eight weeks, and 12 weeks. A number of credits has not been assigned to each module as this will depend on in-house, vocational or university training courses, the specific objectives of courses, and whether credits are required to obtain a formal qualification.

Block 1 includes the first two modules, Module 1 on ‘Media Access’ and Module 2 on ‘Dictation and software management’, which run simultaneously for four weeks. In this block, trainees are expected to become familiarised with MA as a subfield of AVT and AS and particularly focus on subtitling (SDH, editing, segmentation, condensation, reformulation, etc). In Module 2, trainees can practise dictation and learn how to use the SR software.

Block 2 consists of ‘Simultaneous interpreting’ and ‘Intralingual respeaking’, which run simultaneously for eight weeks. Interpreting focusses on SI theory and practice and on skills such as live translation, multitasking, split-attention, short-term memory, etc. Intralingual respeaking practice focusses on using audiovisual material from varying TV genres and live events with varying speech rates and levels of

difficulty. Quality assessment in intralingual respeaking is introduced in the last four weeks to train the causes and consequences of different types of edition and recognition errors.

Block 3 is the longest and includes one module on interlingual respeaking that runs for 12 weeks; this module focusses on training with varying audiovisual material of three levels of difficulty: easy, intermediate, and advanced). Since trainees will already have working knowledge of the NER model, quality assessment in interlingual respeaking is introduced in the first week. It is expected that incorporating NTR analysis into training from an early stage will allow trainees to measure their strengths and weaknesses through the types and numbers of errors made.

Two concurrent discussion points, 'The professional world' and 'New developments in respeaking', are fed through blocks 2 and 3 and aim to equip trainees with the knowledge required for working in a professional environment and with relevant information on technological advances as well as discussions of their application in the workplace. It is advised that these discussion points take the form of topics instead of units, which can be facilitated by trainers throughout the course.

Interlingual respeaking training can be delivered in person, online, or with a blended approach. Given the fact that potential trainees for interlingual respeaking will already be students or professionals in the field of translation, interpreting, or another language related area, an online course may be favoured so as to reach a wide cohort of trainees. A social-constructivist approach to training enforces the notion of trainees being able to take control of their learning and complete tasks when and where is suitable for them within the time dedicated to each module.

### **8.5 Learning outcomes**

It is essential for any training process to begin by explicitly establishing the intended achievements for the course (Kelly, 2005). The competence model has provided a clear conceptual foundation and theoretical underpinning for interlingual respeaker training, with the relevant task-specific skills now grouped under the relevant specific and generic competences. Before using the training model to create an interlingual respeaking course, the competences and skills identified so far must be translated into learning outcomes. In other words, the competences must be operationalised as actions that can be taught through different tasks and assessed at different levels (Pöchhacker and Remael, 2019).



Learning outcomes have been defined by Kennedy et al. (2009, p. 5) as 'statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of a process of learning'. Many scholars have observed that, in general, the learning outcomes of university education do not serve the needs of the professional market (Bowker, 2004; Chesterman and Wagner, 2004; Gouadec, 2007; Pym, 2011), as translation and interpreting degree programmes tend to cater for the internal needs of the HEI or other training institution (Pym, 2011) and tend to be associated with the process of course validations. Therefore, training should be brought closer to the market and aim to equip trainees with skills required for the professional world rather than aiming to simply pass the assessment component of the training course. This calls for the creation of 'market-oriented' (Heinisch, 2019) learning outcomes.

A set of learning outcomes for each module has been drafted as part of the ILSA project (Dutka, 2019) and modified to suit the proposal for training in this research.

|  |  |
|--|--|
| <p><b>Module 1<br/>Media Access<br/>(including<br/>subtitling)</b></p> | <p>The trainee will be able to:</p> <ul style="list-style-type: none"> <li>• define disability, explain disability models, and describe types and degrees of disability;</li> <li>• define accessibility and describe the various types of international, European, and national/regional legislation;</li> <li>• use the principles of accessible venue requirements to assess the accessibility of a venue;</li> <li>• explain MA, including its different approaches, legislation, debates, and requirements for accessible products;</li> <li>• enumerate the different types of target audiences for access services and types of access support;</li> <li>• explain different types of access service provision such as audio description, audio subtitling, sign-language interpreting, and surtitling, including the competences and skills required for each one;</li> <li>• explain the different variants of subtitling including pre-recorded, SDH, live subtitling, intra- and interlingual subtitling, and the differences between their workflows;</li> <li>• identify spatial and temporal constraints and timing rules in subtitling;</li> <li>• translate subtitles into another language by using techniques such as condensation, reformulation, and segmentation; and</li> <li>• create SDH subtitles with sound labels, speaker identification, and other paralinguistic information.</li> </ul> |
|  | <p>The trainee will be able to:</p>  |

|   |  |
|---|--|
| <p><b>Module 2</b><br/><b>Dictation and software management</b></p> | <ul style="list-style-type: none"> <li>• describe speech recognition’s main components and its process;</li> <li>• list a number of speaker-dependent and speaker-independent speech recognition systems and distinguish between those that can be used for their language;</li> <li>• describe the different steps needed to prepare the speech recognition software;</li> <li>• take various steps to improve the user profile;</li> <li>• dictate a variety of texts intralingually using commands and macros;</li> <li>• dictate a variety of texts interlingually (sight translation) using commands and macros;</li> <li>• refine the language model by customising the vocabulary, in particular by adding new words, adding words or phrases from lists, adding words from documents, and adapting the writing style; and</li> <li>• assess the quality of their dictation by calculating the accuracy rate with a basic formula.</li> </ul> |
| <p><b>Module 3</b><br/><b>Simultaneous Interpreting</b></p>         | <p>The trainee will be able to:</p> <ul style="list-style-type: none"> <li>• explain different forms of interpreting such as simultaneous, consecutive, dialogue, relay, retour, etc.;</li> <li>• describe the cognitive process of SI and relate it to respeaking;</li> <li>• perform close shadowing (verbatim repetition) for five minutes of continuous speech in their A language;</li> <li>• perform phrase shadowing (repetition with a delay of at least one source-language phrase) for five minutes of continuous speech in their A language;</li> <li>• acquire relevant knowledge for an interpreting assignment through researching and documenting bilingual terminology;</li> <li>• use appropriate strategies for coping with complex content and varying speech rates; and</li> <li>• analyse and self-assess their interpreting performance.</li> </ul>  |
| <p><b>Module 4</b><br/><b>Intralingual respeaking</b></p>           | <p>The trainee will be able to:</p> <ul style="list-style-type: none"> <li>• define respeaking and relate it to the origins of subtitling and interpreting.</li> <li>• compare respeaking to other production methods in terms of delay, speed, accuracy, cost, and seriousness of errors;</li> <li>• respeak an easy audiovisual text (slow pace) with punctuation marks and via the speech recognition software;</li> <li>• respeak an intermediate audiovisual text (medium pace) with punctuation marks and via the speech recognition software;</li> <li>• respeak an advanced audiovisual text (fast pace) with punctuation marks and via the speech recognition software;</li> </ul>  |

|   |   |
|---|---|
|   | <ul style="list-style-type: none"> <li>• apply live corrections while respeaking an audiovisual text.</li> <li>• apply SI techniques while respeaking;</li> <li>• respeak different TV genres and live events and explain the principles related to different genres that can be respoken (sports, news, debates, chat shows, etc.);</li> <li>• determine their optimum respeaking rate; and</li> <li>• explain how the NER quality assessment model works and apply it to their respoken texts.</li> </ul>   |
| <p><b>Module 5</b><br/><b>Interlingual</b><br/><b>respeaking</b></p>                                | <p>The trainee will be able to:</p> <ul style="list-style-type: none"> <li>• explain the concept and the challenges of interlingual live subtitling;</li> <li>• refine the language model by customising the vocabulary, in particular by adding words from documents and adapting the writing style in the interlingual live context;</li> <li>• identify the different settings where interlingual respeaking can be offered;</li> <li>• listen to audio in language A and reformulate it in language B using speech recognition software;</li> <li>• listen to audio in language A and reformulate it in language B while using speech recognition software and working with a corrector;</li> <li>• listen to audio in language A and reformulate it in language B while using speech recognition software and making corrections;</li> <li>• provide live interlingual respeaking for different TV genres and live events;</li> <li>• add the additional elements for intralingual live subtitling, such as music, sounds, tones, and speaker identification;</li> <li>• determine their optimum respeaking rate in the interlingual live context.</li> <li>• identify and react to a crisis point (audio issues, people not speaking into the microphone, etc.);</li> <li>• apply live corrections while respeaking an audiovisual text, including switching between the keyboard and SR software; and</li> <li>• explain how the NTR quality assessment model works and apply it to their respoken texts.</li> </ul> |
| <p><b>Discussion</b><br/><b>point 1</b><br/><b>The</b><br/><b>professional</b><br/><b>world</b></p> | <p>The trainee will be able to:</p> <ul style="list-style-type: none"> <li>• assess the task and decide between working as a single person or as a team;</li> <li>• work as a single interlingual live subtitler;</li> <li>• work within a team of interlingual live subtitlers;</li> </ul>   |

|  |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>• perform short-term preparation for interlingual speeches (lexicon training and vocabulary), including quick preparations versus well in advance announced projects;</li> <li>• work in a mixed set-up, meaning live, semi-live, and prepared subtitling;</li> <li>• take on and switch between different roles in teamwork, such as being the respeaker, corrector, self-editing respeaker, or sender, etc.;</li> <li>• be familiar with the interface of at least one live subtitling programme (e.g. Text on Top);</li> <li>• identify the stages involved in preparation for a live event;</li> <li>• discuss professional live subtitling standards;</li> <li>• debate different workflows (no correction, self-correction, parallel correction);</li> <li>• identify the minimum technical requirements for the provision of the service (audio link, soundproof booth, or steno mask, etc.);</li> <li>• debate different responses to situations when the technical standards are too low;</li> <li>• collaborate with event organisers and technicians; and</li> <li>• collaborate with users.</li> </ul> |
| <p><b>Discussion point 2</b><br/><b>New developments in respeaking</b></p> | <p>The trainee will be able to:</p> <ul style="list-style-type: none"> <li>• discuss developments in speech recognition software and how they impact the way a respeaker works;</li> <li>• explain how automatic live subtitling works;</li> <li>• discuss the advantages and disadvantages of automatic and live subtitling; and</li> <li>• keep abreast with technological developments and apply them to respeaking projects.</li> </ul>   |

Figure 8.4: Learning outcomes for the interlingual respeaking training model.

The curriculum design relies on a set of pre-constructed learning outcomes to guide the design and content of training. As previously noted, a set of market-oriented learning outcomes (Heinisch, 2019) is required for interlingual respeaking training to ensure that trainees are being trained with the tools to help them apply their knowledge to the professional world. The learning outcomes for the modules and discussion points proposed for the training course include developing thorough understandings of access service provision, target audiences, and quality assessment models.

## **8.6 Developing a training course in the context of ILSA**

Now that the task-specific skills have been categorised under the required competences (Pöchhacker & Remael, 2019) and the competences operationalised into learning outcomes, the training course can be presented as an instantiation of the training model. It is important to outline the relationship between the ILSA training course and the research-informed course presented in Section 8.7.

This doctoral project (which began in October 2016) was not based on the ILSA project (which began in September 2017). Rather, ILSA was an important milestone in the elaboration of this research. The empirical results of this doctoral research, which sought to identify the task-specific skills and best-suited professional profile for interlingual respeaking, informed IO2 and IO5 of the ILSA project. Feedback on experiment design from the international team of researchers for the ILSA project, as well as publications (Robert, Schrijver & Diels, 2019a, 2019b; Pöchhacker & Remael, 2019) and course materials that have been produced by the ILSA project partners have shaped the experimental design, the foundation of the training model and the training course proposal.

The research-informed training course of this doctoral project and the ILSA course mainly differ in purpose, structure and modules. It is important to offer a brief descriptive comparison of the two courses to highlight these main differences and help contextualise the connection between the main output of this research and of the ILSA project. An outline of the ILSA course can be seen in Figure 8.5, which broadly consists of foundational, core and applied components, which each have modules. Six modules, namely module 1a on Media Accessibility, module 1b on pre-recorded subtitling, module 1c on simultaneous interpreting, module 2a on intralingual respeaking, module 2b on interlingual respeaking and two modules which explore interlingual respeaking in different settings: module 3a for TV and module 3b for live events. Each module carries a differing number of ECTS credits, which depends on the material covered in each module and exercises that students are encouraged to carry out.

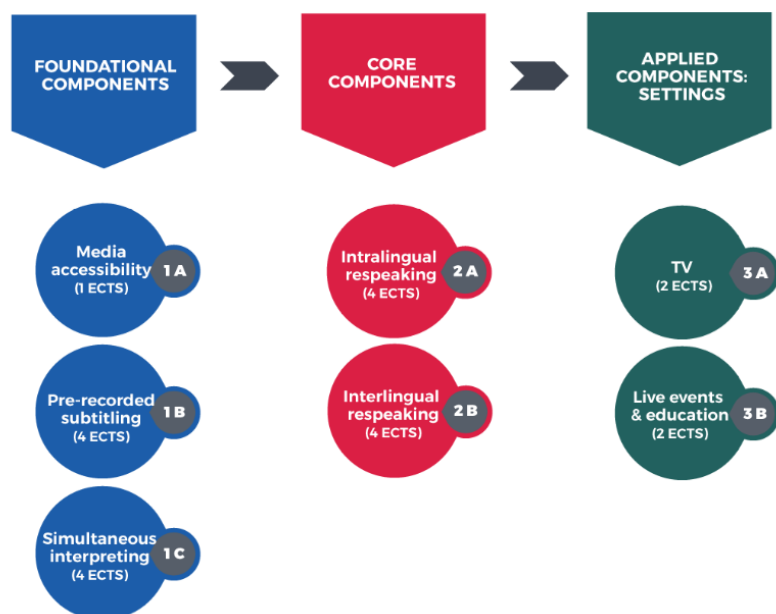


Figure 8.5: An outline of the training course for the ILSA project.

First, the purpose of this doctoral project is to create a training model that can be used as a guide to develop future interlingual respeaking training. The proposal of a research-informed training course is a product of the training model. The course outlines a series of modules and units that could be used to form training, and recommendations for material, assessment and class discussion have been made. The research-informed course was developed with various purposes in mind. For example, to be used as a full vocational training course, to inform university education such as a semester-long respeaking module; to form part of a master's programme in Translation and/or Interpreting, or Audiovisual Translation, or to be used as a stand-alone module that may be taken independently by associate students who do not register for a full degree. The ILSA course was developed with the purpose of being integrated into a credited HE course. ILSA has produced a set of open access course materials hosted online with a guide for each module. Aside from being integrated into university education, the course material could also be used by trainers who could select material to use in their own courses, or by individuals who want to train alone. The ILSA course has enriched the research-informed training course, as it has produced learning resources, which will be available from September 2020 and can be used as source material for the research-informed training model, thus enhancing the feasibility of the model for training interlingual respeakers. Many of the learning resources are already made and can be used for teaching. ILSA course material (to which the researcher of this thesis also contributed) include video lectures on MA, pre-recorded subtitling, SI, intra- and interlingual respeaking; as well as

interviews with experts, assessment activities and reading lists that have been compiled with blurbs in order to facilitate the trainers' and trainees' selection of materials.

Second, the structure of the training course for the ILSA project (IO5) (see Figure 8.5 for an outline) is composed of foundational components that are thought to be prerequisites for interlingual respeaking (MA, Pre-recorded subtitling, and SI); core components (intra- and interlingual respeaking); and applied components that focus on respeaking in different settings (e.g. TV, live events, and education). The research-informed training course consists of five modules and two discussion points.

Third, regarding the modules in both courses, the foundational components of MA, subtitling, and interpreting have all been deemed as important for both the ILSA course and the research-informed course. The ILSA course uses these three topics as prerequisites to the core components of intra- and interlingual respeaking. The research-informed course covers MA at the beginning of the course so trainees can form their own stance on access (see Section 8.7.1) but subtitling and interpreting have been integrated differently. The applied components of the ILSA course allow trainees to explore the specificities of TV and live events and education once they have mastered interlingual respeaking. Although, the research-informed course places more emphasis on the progression of easy, intermediate, and advanced respeaking practice, it may be lacking in focus on TV, live events, and education. A focus on these strands could be beneficial not only to broaden the resources used for practical respeaking exercises but also for trainees to explore workflow and software in different professional settings. All in all, both courses have carefully considered the importance of situating interlingual respeaking within MA, and the fact that interlingual respeaking is a hybrid form of subtitling, interpreting, and intralingual respeaking.

The results from this research show that translation and recognition errors are equally important. An early introduction to dictation may help to minimise the amount of recognition errors trainees make when they start to respeak, as they will have had the chance to develop dictation skills and create well-trained voice profiles. In the research-informed course, an original contribution to interlingual respeaking training is the addition of the 'Dictation and software management' module. This module is introduced from the very first week, as it is hoped that early dictation practice and sight translation will ensure trainees' voice profiles are trained to a good standard before they begin respeaking practice. In the

ILSA course, trainees are not exposed to SR software until the intralingual respeaking module, which could mean that recognition becomes a problem when respeaking.

Although there may not be a best-suited professional profile for interlingual respeaking, task-specific skills from subtitling and interpreting are essential. The similarities between subtitling and respeaking mainly lie in the on-screen output, while the similarities between interpreting and respeaking lie in the process to produce the output, which calls for much practice. Neither interpreting nor subtitling skills have been named as pre-requisites in the training model, as they can be taught in relation to what have been identified as key skills. As less time may be required for developing knowledge of subtitling, the MA module is grouped together with subtitling theory as well as practice for trainees to understand why access is needed and to learn about the access service that live subtitling derives from. In the ILSA course, interpreting is a prerequisite to intra- and interlingual respeaking practice. However, in the training model, interpreting is placed alongside intralingual respeaking. The placement of these modules intends to allow trainees to learn techniques from SI and to immediately apply them to intralingual respeaking. Trainees for the University of Vigo's online interlingual respeaking course took SI and intralingual respeaking at the same time. Trainees reported that it was helpful to, first, practice SI skills and, then, apply them directly to intralingual respeaking exercises.

Section 8.7 presents a proposal for an interlingual respeaking course that has been developed by using the training model (Figure 8.3) as a point of departure.

### **8.7 A proposal for a training course for interlingual respeaking**

As previously noted, the training model can be used as a framework upon which to base interlingual respeaking training. Therefore, as an instantiation of the training model, this section outlines how the model can be used to develop training. Each sub-section explores one of the five modules and two discussion points and includes thoughts on units (which represent weekly topics of learning), materials and assessment.



### 8.7.1 Module 1: Media Accessibility

|               | <b>MODULE 1: Media Access (incl. subtitling)</b>              |
|---------------|---|
| <b>Unit 1</b> | Disability, users, and existing services                      |
| <b>Unit 2</b> | Media Accessibility (incl. AD and Sign Language Interpreting) |
| <b>Unit 3</b> | Intralingual subtitling                                       |
| <b>Unit 4</b> | Interlingual subtitling                                       |

Table 8.3: Module 1: Media Access (incl. subtitling).

The Media Access module introduces trainees to the different types of access service provision and use in society and situates interlingual respeaking within the context of AS, MA, and AVT. It is advised that a focus on users is incorporated so that trainees can build a sense of responsibility to provide the best possible experience and product for a wide audience. According to Greco (2019), accessibility cannot be regulated to just a minor part of a module or merely diluted across many modules. Rather, MA requires a module of its own, in which students can form an overall understanding of accessibility on which they will base the rest of their learning. Greco argues that MA also requires space within other modules in a training course; creating this space would allow for students to critically apply their knowledge of MA learnt in the first module to the technical knowledge provided in other modules. By having a MA module at the very beginning of the course, trainees are able to explore MA and take a stance early on about how they view access. Chapter 2 introduced particularist and universalist accounts of MA; to recap, the particularist accounts tend to define accessibility in relation to specific groups (mostly people with disabilities), and universalist accounts tend to frame accessibility as being relevant for all.

Unit 1 would include an overview of the different types of access services, including audiodescription, dubbing, voice-over, subtitling, SDH, and respeaking to situate respeaking within the field of MA. The type of work covered by respeakers and interpreters has changed over time, since when it was first introduced respeakers worked with live TV broadcasts and interpreters dealt with meetings, conferences, and court cases (Marsh, 2004). However, as respeaking becomes more popular and is being used to provide access in meetings and at conferences, the context in which it is being used is overlapping with that of SI.

Unit 2 provides a space for trainees to form an understanding of accessibility. The qualitative results from the main experiment show that participants did not like having readings as course resources. Trainers may need to encourage trainees to engage with theory and form their stance on access as doing so will affect the way that they speak about access and see the world. A creative way to integrate theory could be to use case studies. For example, the 2018 Spanish film *Campeones* (Champions) directed by Javier Fesser was praised by both disabled and non-disabled people in Spain and won many awards. However, when the film is seen under a reflective perspective within critical disability studies and when concepts such as the universalist approach to MA are applied to it, the film may end up being considered as discriminatory (Romero-Fresco, 2019c). Such debates would be useful to hold in a module like this one, but this would only be possible by using theory to allow students to refine their thinking and form their own view of access and disability. Being able to form such views would also allow trainees to consider how end users receive interlingual live subtitles.

The empirical results of this research show that the skills required for interlingual respeaking are much closer to SI than to subtitling; therefore, it may not be necessary to include a whole module on subtitling, but rather to integrate it into the Media Access module. Units 3 and 4 cover variants of subtitling and creating basic subtitles. Trainees could use subtitling software, such as Subtitle Workshop or Wincaps, to create intra- and interlingual subtitles and experiment with adding sound labels and speaker identification with audiovisual material that requires the use of condensation, reformulation, and segmentation. It can take time to understand how to use subtitling software, so aside from in-class time, trainees could be encouraged to carry out practice in their own time. Trainees are expected to develop a technical understanding of software, which is useful to understand how subtitles are produced but is not indispensable for respeaking. The pre-recorded subtitling module that has been prepared for the ILSA course has ready-made material that could be used for this module. By the end of the Media Access module, trainees should have substantial theoretical knowledge of MA and technical and theoretical knowledge of subtitling. Trainees should have also acquired accessibility competence and be confident in using their knowledge and skills to make a product or service accessible to as many people as possible (Heinisch, 2019).

### 8.7.2 Module 2: Dictation and software management

|               | <b>MODULE 2: Dictation and software management</b>    |
|---------------|---|
| <b>Unit 1</b> | An introduction to speech recognition software        |
| <b>Unit 2</b> | Dictation practice 1 (basic commands)                 |
| <b>Unit 3</b> | Dictation practice 2 (word lists and custom commands) |
| <b>Unit 4</b> | Dictation practice 3 (sight translation)              |

Table 8.4: Module 2: Dictation and software management.

The empirical results demonstrate that extensive software training is required to combat recognition errors. The University of Vigo trainees who consistently reached 98% had good dictation as they maintained a steady pace and volume and had a strong command of the software.

Unit 1 provides trainees with an understanding of the basic mechanics of SR and allows them to explore different types of SR software, such as Web Captioner and compare them to Dragon NaturallySpeaking.

In Unit 2, covers dictation practices of easy-to-read texts that only require the use of simple commands such as ‘comma’, ‘full stop’, ‘question mark’, ‘exclamation mark’, etc. before moving on to more challenging texts that require the use of more complex commands such as ‘brackets’, ‘quotation marks’ and custom commands.

Unit 3 focusses on paying extra attention to unfamiliar names, terminology, and other proper nouns that may not be recognised by the software during the dictation process and on creating word lists with relevant terminology that may be needed for future respeaking tasks (Arumí Ribas and Romero-Fresco, 2008). To help trainees identify words that are typically misrecognised, before dictating a text they could analyse the text for potential recognition errors that could arise and train the software before they begin dictating. Once trainees have completed the dictation exercise, they may analyse the dictated text to ascertain whether errors have occurred and how they could be avoided in the future (*ibid.*). Although the NER model is introduced in the last four weeks of the intralingual respeaking module, it is recommended that trainees be familiarised with the types of errors and their severity during the first week of this module. At this point, trainees will have already been exposed to recognition errors, so discussions could cover severity of errors and impact on viewer comprehension. Consideration should

be given to the fact that a wide audience is composed of many groups and that each group may have different experiences of errors and their severity depending on their specific needs.

Unit 4 introduces sight translation perhaps with a focus on semiotic resources such as handling of the written text, body posture, and gaze (Felberg and Nilsen, 2017). Such exercises would entail the trainee reading the text in one language and dictating it into another language without the time pressure of producing a live translation.

### 8.7.3 Module 3: Simultaneous interpreting

| <b>MODULE 3: Simultaneous interpreting</b> |  |
|--|--|
| <b>Unit 1</b>                              | An introduction to interpreting                          |
| <b>Unit 2</b>                              | Interpreting strategies (Easy I)                         |
| <b>Unit 3</b>                              | Interpreting practice: Speeches (Easy II)                |
| <b>Unit 4</b>                              | Interpreting practice: Conferences (Intermediate I)      |
| <b>Unit 5</b>                              | Interpreting practice: Interviews (Intermediate II)      |
| <b>Unit 6</b>                              | Interpreting practice: Specialised language (Advanced I) |
| <b>Unit 7</b>                              | Interpreting practice: Debates (Advanced II)             |
| <b>Unit 8</b>                              | Situated-learning task                                   |

Table 8.5: Module 3: Simultaneous interpreting.

As the SI and intralingual respeaking modules run at the same time, it is advisable for trainees to, first, complete work for the SI module and, second, work for the intralingual respeaking module. The SI module is split into three sections to account for three levels of difficulty: (1) easy; (2) intermediate; and (3) advanced.

As explained in Chapter 6, the SI module of the University of Vigo course included eight units including an introduction to SI, SI in the media, interpreting strategies, and exploring ways in which strategies could be applied to SI practice, including in political language, live interviews, and televised debates. The University of Vigo trainees liked the variety of topics that the practice videos covered and felt the videos prepared them well for different professional situations. Participants in the main experiment

deemed interpreting specific readings as not being useful, but those who completed the University of Vigo course thought that they were useful, which may be due to these participants having no prior SI experience. This feedback has been considered here to suggest tasks for a SI module in intra- and interlingual respeaking training.

Unit 1 introduces trainees to interpreting through readings covering cognitive skills and to the tasks that are carried out when producing a simultaneous interpretation. Tasks include pre-process tasks, such as domain research and bilingual terminology lists, working individually and in teams, and carrying out post-task analysis of the TT or the importance of conducting a debrief with the team. Readings on skills required for SI could be followed by a class discussion with a focus on connecting SI to interlingual respeaking.

Unit 2 introduces trainees to the peri-process skills that SI and interlingual respeaking share, such as multitasking, simultaneous paraphrasing, reformulation, segmentation and anticipation, etc. Exercises cover easy SI with low speech rates and non-technical content to carry out phrase shadowing tasks. Phrase shadowing allows for a deep processing of content and is the immediate repetition of auditory input in the same language with greater latencies (Pöchhacker, 2016). Trainees could be introduced to segmentation, which entails reformulating speech segments before the interpreter has a full picture of what the speaker wants to say (Gile, 1995). Similar to anticipation, Gile explains that segmentation can save short-term memory capacity requirements, as the information is unloaded from the memory faster. However, the reformulation of a text requires a higher level of processing capacity.

Unit 3 explores coping tactics at an early stage, so trainees can apply them to SI tasks throughout this module. A point of departure is the three overall tactics classified by Gile (1995), taught within the framework of practical exercises: comprehension tactics, preventive tactics, and reformulation tactics. Gile (1995) suggests that it is important to have a thorough understanding of the advantages and drawbacks of tactics. Each tactic could be introduced by a reading, followed by a practical exercise to apply the tactic, and then a class discussion in which trainees could explain why they chose a particular tactic and analyse the advantages and drawbacks of their experience of each one. Examples are comprehension tactics such as delaying the response, reconstructing segments of text, receiving assistance from their boothmate, and consulting documents in the booth. Preventative tactics, which,

according to Gile, include changing the Ear-Voice span (the time lag between comprehension and reformulation), and changing the order of elements in an enumeration.

Units 4 and 5 focus on interpreting videos of medium speech rates and topics that include some level of complex ideas and terminology. Videos of conference presentations could be used to ensure trainees prepare with presentation slides or notes. A variety of topics could allow for practise with diverse and complex subjects, such as the arts, science, technology, history, etc.

For Units 6 and 7, trainees could practise with advanced material of higher speech rates, more complex information, and videos with two speakers. Units 6 and 7 could continue to cover tactics including delaying the response, using the boothmate's help (both also seen in comprehension tactics), consulting documents in the booth, replacing a segment with a superordinate term or a more general speech segment, explaining or paraphrasing, and instant naturalisation. At this point, trainees will have explored and applied various coping tactics to their SI exercises; therefore, they should be given a space to discuss the tactics that worked well or did not work well for them and to share strategies they have come across with others.

Unit 8 takes the form of a situated-learning task of a conference presentation of a complex topic. A brief could accompany each ST, including the presentation or debate title, the speakers' names, presentation slides, etc.; this would allow trainees to research the topic and create bilingual word lists of terms that may be required during the SI task. It would be appropriate for the actual interpreting stage of a situated-learning task to last for approximately 15 minutes, with 10 minutes given for preparation and a more substantial amount of time given for post-task analysis of the interpretation. In the post-task analysis, trainees could comment on the errors they made, the impact that these errors had on the TT, and how they could avoid such errors in the future.

#### 8.7.4 Module 4: Intralingual respeaking

|               | <b>MODULE 4: Intralingual respeaking</b>               |
|---------------|--|
| <b>Unit 1</b> | An introduction to intralingual respeaking (Easy I)    |
| <b>Unit 2</b> | Intralingual respeaking: Speeches (Easy II)            |
| <b>Unit 3</b> | Intralingual respeaking: Sports (Intermediate I)       |
| <b>Unit 4</b> | Intralingual respeaking: Interviews (Intermediate II)  |
| <b>Unit 5</b> | Quality assessment (NER analysis)                      |
| <b>Unit 6</b> | Intralingual respeaking: News and weather (Advanced I) |
| <b>Unit 7</b> | Intralingual respeaking: Entertainment (Advanced II)   |
| <b>Unit 8</b> | Progression test (Situating-learning task)             |

Table 8.6: Module 4: Intralingual respeaking.

The eight-week intralingual respeaking module is split into three sections of two weeks each to account for three levels: (1) easy; (2) intermediate; and (3) advanced. Each level should use audiovisual material coming from appropriate genres and with speech rates typically associated with the level of difficulty. Specific readings on subtitling and interpreting were deemed to be the least useful learning resource in the main experiment. However, specific readings on respeaking were introduced at the beginning of the interlingual respeaking module for the University of Vigo course and were well received. Such resources could be used to create discussion at the beginning of the intralingual respeaking module along with example reference videos of respeakers in action so as to show what the trainees are expected to do. It is also important to disseminate information on user preferences for intralingual live subtitles. This will contextualise trainees' knowledge of quality in MA and allow them to apply it to the products they are creating for the viewers.

It is recommended that trainees carry out at least two intralingual respeaking exercises per week, which totals 16 over the course of the module. Many elements of an audiovisual text must be considered when choosing material including the content, delivery, language, and context as well as the sound and visual quality of the video. It is advisable that the level of difficulty of the audiovisual material increases each week. The length of the videos could vary, beginning with very short videos of two minutes in length, increasing to five minutes, then eight minutes, and then 10 minutes. Some genres have proved to be more difficult to respeak than others so a variety should be used in training. Genres could include

documentaries and slow speeches for the easy level; sport shows, interviews, and speeches with some complex terminology for the intermediate level; and news, weather, chat shows, and fast-paced speeches for the advanced level. The researcher of this project actively participated in testing the ILSA model to grade the difficulty of practice material against parameters such as content, language, delivery, context, and sound quality. These parameters (drawn up by academics F. Pöchhacker and L. Alonso, who were involved in the ILSA project) can be used to determine which material should be used for basic, intermediate, or advanced levels of respeaking.

In intralingual respeaking the following five tasks are involved: (1) listening to the ST; (2) respeaking the TT; (3) monitoring the output; (4) watching the images on-screen; and (5) correcting the TT. These tasks could be introduced one by one. For Unit 1, trainees could focus on the first step of listening and respeaking. Unit 1 introduces trainees to the task-specific skills identified for intralingual respeaking, which are as follows: dictation (and punctuation), live-error correction, managing respeaking software, multitasking, language comprehension, edition, reformulation, speed, short-term memory, condensation, and knowledge of current affairs. Once trainees have acquired theoretical knowledge in Unit 1, they could start respeaking with a slow video of approximately 100–140 wpm of an easy genre, such as a narrative clip of a documentary or a speech on a basic topic. Given that extensive respeaking practice will expose trainees to continuous and simultaneous listening and speaking at speed, trainees are expected to naturally build upon dictation skills learnt in Module 2 and to develop skills in multitasking, speed, and short-term memory as they complete each intralingual respeaking exercise. For the first few videos of short duration, trainees could watch the video without respeaking it in order to note down any terminology that may be required for the task (e.g. proper nouns and unfamiliar vocabulary) and to introduce it into the SR software. If trainees do this on a regular basis and use tools from Module 2 to create custom commands, they will develop strong software-management skills. Unit 2 could introduce trainees to respeaking slow speeches that have been televised or delivered at live events, such as presidential or conference speeches. To add another step of the respeaking process, trainees could listen, respeak, and then monitor their on-screen output.

Units 3 and 4 cover respeaking sports programmes and interviews with material of approximately 140–180 wpm. Trainees should aim to listen, respeak, and monitor their on-screen output while attempting to watch the images on-screen. Exposing trainees to a wide range of carefully selected audiovisual material would allow them to develop their world knowledge and knowledge of current affairs. This



knowledge would develop for students not only from the act of watching and respeaking audiovisual material but also from carrying out pre-process tasks such as researching different subject areas and creating bilingual terminology lists. Being able to analyse the ST and identify idea units is an essential skill for the respeaking process and can be referred to as ST/SL comprehension. To develop comprehension, trainees could listen to a speech without taking notes to answer a number of content-related questions; also, trainees could listen to a speech and orally summarise the content (Arumí Ribas and Romero-Fresco, 2008).

Edition could also be incorporated into Units 3 and 4. Trainees must be able to identify the key elements of the ST, discard unnecessary information, and apply editing strategies (Arumí Ribas and Romero-Fresco, 2008). Tasks could include trainees listening to a speech to identify the main ideas, to create a list of key words and links, and to create a conceptual map of ideas (*ibid.*) to emphasise how much information must be maintained in the respoken text and how much information can be condensed. To train reformulation ability, trainees could respeak a video with a focus on paraphrasing each idea as opposed to respeaking each sentence verbatim. In interpreting studies, Gillies (2001) proposed that trainees rework the grammatical structure of sentences without changing their meaning by changing passive verbs into active verbs and by removing subordinate clauses. In subtitling studies, Remael and van der Veer (2006) suggest giving students a transcription of the ST to rewrite and segment as subtitles. This exercise can also be completed while listening to a ST and stopping after every sentence to write the subtitles; doing this exercise would develop trainees' segmentation and short-term memory skills (Arumí Ribas and Romero-Fresco, 2008).

Come unit 5, trainees will have experienced the pre- and peri-processes of respeaking, so it may be an appropriate point to introduce the post-process. Before exploring the NER model, trainees could carry out some independent research on working models and how they vary across countries and different parts of the sector. Once the NER model is introduced, tasks could include breaking up the transcript of a video to identify idea units and commenting on the impact that omissions or substitutions could have on the text. Peer NER analysis will provide further feedback for trainees and strengthen their skills to apply the NER model to their respeaking exercises in the following units. The open-access ILSA course has a ready-made video lecture exploring the NER model and a flowchart that illustrates the process of assessing errors; both resources could be used for training. It is hoped that after completing such tasks, trainees would be prepared to apply the NER model to their respeaking exercises in Units

6, 7, and 8. As also noted in Chapter 9, Section 9.3, end users could become involved in assessing the quality of trainees' work. LiRICS is currently examining DHOH candidates to become NER evaluators to assess the quality of intralingual live subtitles in Canada (P. Romero-Fresco, GALMA, personal communication, October 30, 2019). Trainers are expected to have relevant contacts within academia, the industry and with user associations, therefore, they could facilitate for end users to assess the quality of the live subtitles produced by trainees. This would be an invaluable process to incorporate into training as the end users could provide trainees with a much better understanding of the product they should aim to produce.

Units 6 and 7 introduce an advanced level of speech rates of approximately 180–220+ wpm, which would entail videos of the news, weather, and chat shows to allow trainees to practise with yet more genres. Once trainees have mastered speaking and listening at the same time as well as monitoring the output to observe the recognition errors, they should aim to correct errors quickly and accurately to improve the accuracy rate of their respoken text. Error correction can be carried out either with voice commands or by using the keyboard, so trainees must explore the various error-correction methods to find the most comfortable one for them. It is not advisable to attempt to correct each and every error that appears, but any error that introduces confusing or nonsensical information or that introduces false or misleading information should be corrected. If trainees attempt to correct every error or all minor errors, they are likely to fall behind the original text, thus creating more errors, such as omissions. Tasks to develop live-error correction skills may include asking trainees to aim to correct a certain number of errors while respoking the text, for example, correcting the first three errors that appear and then commenting on the impact that the error correction had on the text (whether it improved the accuracy rate or whether it slowed the trainee down and consequently led to more errors). To foster the learner-centred approach to training, it is advisable to encourage trainees to interact with one another to share their live-error correction strategies and experiences.

Empirical results show that good-performers started off well and were able to reach 98% in intralingual respoking and continued to achieve good results in interlingual respoking. They also achieved better results than those who did not manage to reach 98% to begin with. Therefore, it may be recommended for trainees to achieve good results in intralingual respoking before progressing to the more complex task of interlingual respoking. To monitor this, trainees could complete and pass a progression test in intralingual respoking in which they must reach 98% accuracy. If a situation arises in which a candidate

may not be good enough at intralingual respeaking, they may need to carry out extra practice before progressing, and, even once they have practised more, they may still need to have some extra contact with the trainer to monitor their progress. As noted in Chapter 5, considering simultaneous interpreters are already accustomed to working with two languages at the same time they may only require dictation practice in order to move on to interlingual respeaking. This could highlight an avenue for future research to test the performance of simultaneous interpreters that are not exposed to intralingual practice.

Unit 8 presents trainees with a situated-learning task, which could include a respeaking project brief. Ideally, trainees would be expected to carry out pre-task activities, such as researching a topic and subject specific terminology that they would need to introduce into the SR software. As trainees will have already completed seven weeks of SI and intralingual respeaking activities, they will be equipped to carry out a lengthy respeaking task of approximately 15 minutes. After the task, trainees could complete a thorough NER analysis of their respoken text.

### 8.7.5 Module 5: Interlingual respeaking

| <b>MODULE 5: Interlingual respeaking</b> |   |
|--|---|
| <b>Unit 1</b>                            | An introduction to the task-specific skills and quality assessment (Easy I) |
| <b>Unit 2</b>                            | Interlingual respeaking I: Sports (Easy II)                                 |
| <b>Unit 3</b>                            | Interlingual respeaking II: Speeches (Intermediate I)                       |
| <b>Unit 4</b>                            | Interlingual respeaking III: Interviews (Intermediate II)                   |
| <b>Unit 5</b>                            | Interlingual respeaking IV: News and weather (Advanced I)                   |
| <b>Unit 6</b>                            | Interlingual respeaking V: Entertainment (Advanced II)                      |

Table 8.7: Module 5: Interlingual respeaking.

The interlingual respeaking module is split into six units, each of two weeks, which account for three levels of difficulty (easy, intermediate and advanced). Material of different levels, increasing speech rates and the use of different genres of television and live events can be used. Trainees could respeak three videos per week: a 5-minute video for a warm up exercise, a 10-minute video to roughly analyse

the error rate, and a 15-minute situated learning task including research and terminology preparation and quality assessment.

Shared skills between intra- and interlingual respeaking should not be ignored as trainees may need to re-learn the required skills in the new context of the respeaking task, much like the need for interpreters to 'unlearn' speaking in a pleasant tone. When trainees progressed from intra- to interlingual respeaking in the University of Vigo course, it was observed that some of the skills that trainees had successfully acquired during intralingual respeaking practice were not strong enough for interlingual respeaking. This could be caused by the extra layer of complexity added to the respeaking task in the form of a language transfer process. For example, one trainee developed an impressive tone and pace for dictation in intralingual respeaking, which became erratic when faced with interlingual respeaking. Trainees should explore whether they too compensate skills due to the complexity of language transfer that interlingual respeaking introduces. This could be done by exploring the task-specific skills that were not previously required due to the monolingual language transfer of intralingual respeaking. Therefore, skills such as live translation, TL expression and knowledge of multiple cultures should be given some focus in interlingual respeaking tasks.

As trainees will already be familiar with the NER model, it is advisable to introduce trainees to the NTR model at the beginning of the interlingual respeaking module. According to de Higes Andino and Cerezo Merchán (2018), in the last few decades, a shift has occurred in how assessment is seen in translation training to focus on the process involved and not just on the end product. Approaches to training encourage competence-based training where assessment holds much importance as it is directly linked to learning objectives, competences and tasks. Although quality assessment models such as the NER and NTR models focus on the end product, they can also be used in training to aid trainees to identify their strengths and weaknesses within the interlingual respeaking process. The NTR model, for instance, focusses on identifying translation and recognition errors and categorising them as per their severity. The quantity of errors made could be used as a measure of performance to motivate students both to continue what they are doing well and to work on aspects that require improvement. For example, in a respeaking task, if a trainee makes some minor omission errors and no major errors, they could identify one of their strengths as being able to convey the main ideas of the text. Similarly, if a trainee has made some minor recognition errors and no major or critical errors, dictation could be identified as a strength as could live-error correction if the trainee corrects any major or critical errors

that occur. Despite the fact that the numerical accuracy rate that can be calculated with the NTR model is based on the number of translation and recognition errors incurred, giving trainees the opportunity to calculate their accuracy rate each week may motivate them to improve certain aspects of their respeaking practice to achieve an increase in their accuracy.

Assessment was used as part of the learning process in the University of Vigo course rather than as a follow-up of teaching to enable trainees to reflect on their performance and to use this to plan further learning (Klimkowski, 2019). Quality assessment proved to benefit trainees, as using the NTR model enabled them to analyse the accuracy rates of their own texts and gave them a full understanding of how and why translation and recognition errors are made, thereby giving them space to reflect on their own performance. To foster a social-constructivist approach to assessment within interlingual respeaking training, classroom communication may be used so that trainees can discuss their errors and assessment with others. When quality assessment is first introduced, trainees may prefer to carry out individual NTR analysis of their own work to get to grips with the model and to apply their knowledge from quality assessment to their own respeaking practice. Encouraging peer review within training may reduce the subjectivity of trainees analysing their own respoken texts. Although the NTR model has not been implemented within the industry as of yet, peer-review NTR analysis reflects potential real-life scenarios for quality assessment in the professional world. As suggested in Section 8.7.4, end users could also be involved in assessing trainees' work and giving feedback. It is expected that a DHOH audience would be the main group of end users concerned with the quality of intralingual live subtitles, as the product has mainly catered for this audience since its implementation in 2001. However, for the NTR model, the body of end users is expected to be more diverse and include foreigners, language learners and anyone who has knowledge of more than one language and can decide which language they would like to access content in. This process would fully involve users in the reception of trainees' work, which could also trigger debate amongst the students as to how best cater for a wide audience.

For Units 1 and 2, it is recommended to begin interlingual respeaking practice with audiovisual material of a slow speech rate, such as 100–140 wpm with documentaries and slow speeches. Although not a typical genre to respeak live, documentaries are delivered slowly, by one speaker, with frequent pauses, and contain various visual elements that support the audio text. Speeches can be used at any level, and the difficulty is determined by the speech rate, number of speakers, and subject area. The empirical results showed that structured speeches can be difficult to respeak, so it may be useful to introduce

speeches at every level of the interlingual respeaking module to allow trainees to begin with slow speeches and build up to respeaking fast-paced speeches with complex content. It may be advantageous to include skills in interlingual respeaking training that may have been absent from the intralingual respeaking module, such as live translation, TL expression, and cultural knowledge. Aside from the tasks being situated, it is also advised that the tasks focus on the five subtypes of translation error. Live translation is the most fundamental skill for interlingual respeaking and should feature extensively in training. The results of the main experiment and the University of Vigo module show that the most common subtypes of translation errors are omissions and mistranslations; specific exercises may be necessary to train specific translation errors. To make trainees aware of each subtype of translation error, it is recommended to frame exercises around each translation error. For example, one exercise could pay extra attention to omissions, which would also highlight the importance of dependent and independent idea units. Trainees could analyse the ST transcript and identify the dependent and independent idea units and the impact that their omission would have on the TT. When trainees submit an NTR analysis, they could be asked to also answer the following questions: How many of your errors were caused by omitted text? How many omissions were due to missing dependent idea units? How many were due to independent idea units? Why do you think this is?

For Units 3 and 4, and after four weeks of 'easy' audiovisual material, trainees can move on to four weeks of 'intermediate' respeaking exercises with an elevated speech rate of approximately 140–180 wpm. Genres could include sports, cooking shows, slow news, slow weather, and speeches. The specific demand for interlingual respeaking for particular genres of television is not yet known, so it may be a good starting point to expose trainees to all genres throughout the course. Incorporating situated learning is a fundamental aspect of interlingual respeaking training to prepare trainees for real-life tasks they will come across in a professional environment. For the University of Vigo course, trainees completed two interlingual respeaking exercises each week. For one exercise they completed a rough error analysis of their respoken text, and for the other they carried out a thorough NTR analysis. Trainees reported that they would have preferred more interlingual respeaking practice; therefore, trainers could include three videos per week: a five-minute respeaking practice that can be used as a warm-up exercise, a 10-minute respeaking practice for trainees to roughly analyse their error rate, and a 15-minute respeaking practice (which would also entail pre-task activities, such as research and terminology preparation and post-task exercises, such as quality assessment).

Units 5 and 6 provide trainees with advanced level material with speech rates of around 180-220+wpm of genres such as news, weather, chat shows, interviews and fast-paced speeches. The speed at which the trainee must produce a live translation can compromise its accuracy and result in mistranslations. Thorough preparation of the ST may limit mistranslations as trainees will have searched for ideas and terminology and identified potential translation difficulties. Despite the time constraint in live translation, interlingual respeakers still face the added difficulty of reworking the ST into a different language and maintaining natural expression. Once tasks and quality assessment have been carried out, trainees could collectively reflect on their performance and share information on the severity of their mistranslations and the impact on the text, as well as how to use reformulation and condensation to avoid mistranslations. Unit 6 could also present trainees with a situated learning task to use skills acquired throughout the course to complete a task expected in a professional environment. For example, two interlingual respeaking exercises: one for television and another for live events. The task should consider the pre-, peri- and post-task skills required to include preparation of a topic, respeaking a 15-minute audiovisual text and quality assessment.

For television, trainees could respeak a 15-minute segment of the news based on a major event. A specific topic would allow for preparation by researching the subject and terminology and for training the SR software with words and custom commands. For a live event, trainees could respeak a 15-minute clip of a conference presentation. For preparation, presentation slides and notes could be made available. After respeaking the clips, the NTR model can be used to assess the quality and to demonstrate trainees' understanding of translation and recognition errors and their impact on the respooken texts. According to Pym (2011), we are used to the traditional 'didactic translation' model, which involves trainees producing texts only for the teacher to read and evaluate as per the way in which the teacher translates, therefore, reproducing the concepts and skills of the teacher. A social constructivist approach could be integrated into the final assessment for trainees to take control of their own marking and feedback and, at the same time, apply their learnings from the course to a full respeaking project.

### 8.7.6 Discussion point 1: The professional world

|                | <b>Discussion point 1: The professional world</b> |
|----------------|---|
| <b>Topic 1</b> | Live subtitling methods                           |
| <b>Topic 2</b> | Industry  |
| <b>Topic 3</b> | Working conditions                                |
| <b>Topic 4</b> | The future of the profession                      |

Table 8.8: Discussion point 1: The professional world.

The two concurrent discussion points in the training model are designed to be present during intra- and interlingual respeaking practice. Due to the novelty of interlingual respeaking, the first few groups of trainees could have a significant impact on the profession, so it is important for them to discuss methods of working, working conditions and the future of the profession. It may be useful for current professionals to be invited to speak to trainees to share their knowledge of the industry either in person or in webinar format, such professionals could include subtitlers, interpreters, intra- and interlingual respeakers.

Trainees may not have worked as interlingual respeakers and could benefit from an overview of the differences between live subtitling methods, such as QWERTY, stenography, and Velotype among others. Trainees could share their knowledge of subtitling and interpreting and discuss similarities and differences between professions. The end-products of intralingual respeaking and subtitling are similar and despite the former being closer to SI, both professions receive similar rates. Interlingual respeaking is closer to SI due to the language transfer, but with added complexities of SR software, monitoring live subtitles and live-error correction. Thus, it is fundamental that interlingual respeaking trainees can debate working conditions and contribute to setting up the profession (including fair rates to reflect the complexity of interlingual respeaking) appropriately. In terms of working conditions, protocols for interlingual respeaking are an output of the ILSA project, so once they start to be introduced in the industry set ups and working conditions will become clearer.

Another important discussion to have is on working conditions such as equipment and working patterns among other aspects that may arise as demand increases and the profession evolves. At this moment in time, the interlingual respeaking task is unlikely to account for 100% of a professional's workload as language professionals tend to offer a selection of services including but not limited to translation, pre-recorded subtitling, live subtitling, different modes of interpreting, transcription and training. When this



research and the ILSA project began in 2016 and 2017 respectively, interlingual respeaking was being practiced in multilingual nations such as Wales and Belgium (Romero-Fresco, 2011) but a lack of awareness meant there was not much demand for the service. Now that awareness is being raised, the demand for interlingual respeaking is increasing. Awareness has developed through this research being presented at conferences, the ILSA project, various interlingual respeaking workshops taking place, the online interlingual respeaking course for the University of Vigo and GALMA's efforts to bridge the gap between academia and the industry.

An increased demand can be seen in the number of requests that GALMA is receiving for interlingual respeaking services with different language combinations and for different settings. An example is a request from Transcription Star<sup>20</sup> who have requested live subtitling services in Dutch, Spanish, French, Italian, Portuguese, Mandarin, Japanese and Korean (P. Romero-Fresco, GALMA, personal communication, ongoing). In November 2019, a colleague carried out interlingual respeaking from Dutch into French for Torfs.be<sup>21</sup>. The respeaker picked up the relay of the interpreters for the first half of the event and worked alone for the second half (V. Haverhals, VTM, personal communication April 18, 2020). Throughout March 2020, another colleague used English and Spanish to interlingually respeak a webinar organised by Galderma<sup>22</sup> with 1,000 attendees (N. Guevara, intra- and interlingual respeaker and subtitler, personal communication, April 18, 2020). The steering committee for the e-Expert Seminar Series in Translation and Language Teaching have also requested intra- and interlingual respeaking for the next seminar on Media Accessibility in Modern Languages and Translation for individual presentations that will be delivered in English and the roundtable in Spanish (A. Bolaños García-Escribano, UCL, personal communication, April 14, 2020). Furthermore, due to the COVID-19 pandemic the demand of respeaking services seems to have received a boost, as many of the events that may require SI services are now asking for online interlingual respeaking services (J. Meriño Gómez, ILSA, personal communication, April 22, 2020). Charitable respeaking is also taking place through Global Alliance of Speech-to-Text Captioning<sup>23</sup>, which is a non-profit corporation that

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<sup>20</sup> <https://www.transcriptionstar.com/>

<sup>21</sup> <https://www.torfs.be/nl/home>

<sup>22</sup> <https://www.galderma.com/>

<sup>23</sup> <https://spechtotextcaptioning.org/>

aims to be the 'leading professional authority on speech-to-text captioning, representing all captioners, consumers, and industry' (Global Alliance, n.d.).

### 8.7.7 Discussion point 2: New developments in respeaking

|                | <b>Discussion point 2: New developments in respeaking</b> |
|----------------|---|
| <b>Topic 1</b> | Speech recognition software                               |
| <b>Topic 2</b> | Automatic versus manual subtitling                        |
| <b>Topic 3</b> | Settings for interlingual respeaking                      |
| <b>Topic 4</b> | Requirements for future training                          |

Table 8.9: Discussion point 2: New developments in respeaking.

Translation needs are modified over time and are caused by different influences in sociocultural environments (Shreve, 2000); this highlights the importance of the evolution of translation as a discipline and profession due to the fast-paced technological developments in the field. Interlingual respeaking is no different, so training must be flexible enough to foresee developments and be easily adapted so professionals can acquire and develop skills that are needed from them now and that will be needed from them in the future. Although interlingual respeaking is still in its infancy, preparing trainees for the future of the profession is still a necessity. Preparation reflects an important shift of MA as a proactive approach is required to foresee future developments that trainees should be prepared for.

Discussion point 2 'New developments in respeaking' refers to the developments in intra- and interlingual respeaking and is mainly linked to technology such as SR software and automatic versus manual subtitles. Immediate developments in SR software are expected to improve the respeaker's task, as accuracy training to set up the software is getting shorter and Dragon is reaching closer to the desired 100% accuracy. Dictionaries of SR programmes are also expected to be more thorough; for example, SR software developed by the Computer Research Institute Montréal consults news websites on a daily basis to update terminology. Thanks to this process, when respeakers begin to carry out pre-task activities, the software already knows many of the key terms, making the respeaker's task much easier (Romero-Fresco, 2019).

Trainees should also be able to debate about automatic versus manual subtitling and to understand and discuss the advantages and disadvantages of both. For software to overtake respeakers, speaker-independent SR software is required; however, respeakers must understand the impact of this and consider how the developments can be used in their daily work. Research shows that the quality of some automatic subtitles is impressive, as automatic speech recognition is now able to include punctuation without a human enunciating it and that accurate recognition tends to feature in structured narration of long stretches of spontaneous speech (Romero-Fresco & Fresno, 2019). However, at the moment in automatic subtitles, there appears to be too many minor errors that interrupt the flow of the text and too many standard errors in fast and spontaneous speech. If punctuation is not counted in assessing quality, automatic subtitles are close to the accuracy threshold and some do reach 98% accuracy (*ibid.*).

Reflecting upon new developments in respeaking brings the sustainability of this proposed training course into question, which is an important point to address within the context of fast-paced technological advances. Trainees should understand how they can interact with technology to enhance interlingual live subtitling. Given the fundamental need for quality in access services, it is likely that human intervention will be required at some level, so trainees should be ready to adapt their skills to new situations. For instance, monitoring the output of a combination of automatic transcription and machine translation may entail correcting recognition errors and ensuring punctuation is accurate in the form of post editing a text before it is cued live. Should these developments occur in the future, the most suitable form of human intervention would be a trained interlingual respeaker, as they will have the relevant knowledge of translation errors that can be caused by machine translation, recognition errors caused by SR software and an understanding of the impact that errors and well-edited text can have on an audience. In short, human-computer interaction may require a space in future interlingual respeaking training to address such developments. The authors of the NER model deem the model to be suitable to assess both live subtitles produced by a respeaker and those produced by automatic speech recognition, which further validates the decision to include quality assessment in training.

The context in which interlingual respeaking occurs is also evolving. Respeaking is more commonly known as a method to produce live subtitles for TV, but recently it has also provided access for public events (Moore, 2020) and has been used in the classroom (Romero-Fresco et al., 2019). When working in a professional environment, trainees will encounter different venues, equipment and set-up.

Therefore, it is essential to introduce respeakers to different ways of working when interlingual respeaking is applied to different areas, such as in parliament, business meetings, cultural events, etc. Case studies and material on real-life setup of interlingual respeaking at public events and in the classroom would be of great use to illustrate such settings. It is important for interlingual respeakers to understand that they can offer a similar service as a simultaneous interpreter but that they have the added value of providing access for a wide audience and producing a transcript.

### **8.8 Final thoughts**

The ground covered in this proposal for a training course could be considered ambitious; however, the suggested modules, teaching units, content, and material could be used flexibly to cater for the needs of different training programmes, whether in-house, for university education, or to inform vocational training courses. Some components of the training course may have more priority than others for different settings. For example, already existing courses in intralingual respeaking may want to include the Media Access module or the interpreting module to situate intralingual respeaking within both fields and include quality assessment methods to make respeakers aware of what quality means in terms of the end product. A course on subtitling may require respeaking material and could integrate this by using the suggestions given for the intra- and interlingual respeaking modules presented in this training course. Although the training model is the main output of the AR methodology, it is hoped that the training course can continue to evolve in light of practice and since parts of it are included in translation and interpreting education and training.

# Chapter 9

## Conclusions

The final chapter of this thesis presents the conclusions of this research and highlights the original contributions made to research in interlingual respeaking. This chapter is structured around the RQs presented in the introductory chapter. Then, the limitations of the study are discussed in Section 9.2, and avenues for further research are explored in Section 9.3.

### **9.1 Answers to RQs**

#### **9.1.1 RQ1**

How have existing research and practice led to the emergence of interlingual respeaking within AVT and MA?

The stance taken throughout this research has been that AVT and MA exist in collaboration and that the former belongs to TS, while the latter belongs to the broader emergent subfield of AS (Greco, 2019a). Interlingual respeaking is one of the most recent modalities of AVT, and it aims to cater for a wide audience. The close link between AVT and MA has been discussed as a generally accepted notion and plays a socially inclusive role since it fosters the integration of sensory-impaired members of the community (Pérez-González, 2014) while also providing access for a foreign audience as well as giving all viewers the option of which language they would like to access content in. Interlingual respeaking goes beyond AVT since it is also used to provide access to live events, in which audiovisual texts may be absent and only speakers are present. Therefore, in some contexts, interlingual respeaking may be seen as a technique born out of AVT and used to provide access in (mainly live) situations where the sound cannot be used or where an audience may not have access to the sound.

The three recent shifts of MA, as outlined by Greco (2018) – from particularist to universalist accounts of MA, from maker-centred to user-centred approaches, and from reactive to proactive approaches – are all linked to notions of interlingual respeaking. First, as interlingual respeaking caters for a wide audience, it supports the universalist approach to MA since it provides access for more than users with

sensory impairments as opposed to focussing on a DHOH audience. Second, user-centred approaches for interlingual respeaking training can refer to two types of users: the interlingual respeaking trainee and the wide audience the subtitles cater for. Throughout the proposal of a training course a twofold user-centred approach has been considered. Participants' and trainees' views on interlingual respeaking training have been considered at each experimental stage of the research. Results of trainees' performance and training preferences have been used to create the training model and the training course presented in Chapter 8, which is hoped to prove stimulating for future interlingual respeaking trainees since it is partly based on user (trainee) preferences. The end users have also been considered in the training proposal, as suggestions have been made as to how existing information on user preferences could be disseminated in training and how users can be involved in the reception of trainees' work.

Interlingual respeaking as a new modality of AVT is responding to changes in society and for societal demand for content to be made available to all. Díaz-Cintas and Neves (2015) explain that the internet has been the biggest catalyst of changes in audiovisual communication and translation and has had an impact on various sectors. The emergence of interlingual respeaking is an illustration of this. Many aspects of audiovisual communication have contributed to a demand for interlingual respeaking; these aspects include the increasing quantity of content being made available in real time and the way in which audiences consume content. Technological advances have seen language technologies, such as SR and subtitling software, being introduced to increase productivity and reduce project turnaround times and costs. Interlingual respeaking could be seen as a product of such advances since it encompasses the three key concepts that are attractive to the industry: (low) costs, (speedy) turnovers, and (high) quality (*ibid.*).

Extensive research in intralingual respeaking, including topics such as audience reception, training, cognitive load, and quality and certification, has led to an international implementation of the practice as an access service for TV, live events (Moore, 2020), and, in some cases, as a means to produce pre-recorded subtitles (Marsh, 2006). Additionally, legislation has been a factor in the demand for intralingual respeaking, as requirements for European public-service TV broadcasters are demanding that all live content be made accessible with subtitles; this demand requires a solution like intralingual respeaking, which can be applied in a live context. As intralingual respeaking is already being fully practised, it is only natural for research on interlingual respeaking to take place in order to proactively

implement training and produce a cohort of interlingual respeakers that are ready to respond to the demand. It is for this reason that the skills and background of an interlingual respeaker have been given priority in this research project. One of the main points of focus is the relation of interlingual respeaking to subtitling and interpreting, which is apparent in the process (interpreting) of creating interlingual live subtitles and in the end product (subtitling). The experimental research identified the task-specific skills that are required in producing interlingual live subtitles; of these skills, those used for SI feature heavily, while skills required for subtitling also hold importance.

### **9.1.2 RQ2**

Is good quality respeaking across two languages feasible?

The empirical results of this research have shown that interlingual respeaking is feasible providing that interlingual respeakers undergo appropriate training. For the pilot experiment, participants achieved an overall average accuracy rate of 97.35%. In the main experiment, participants achieved an overall average accuracy rate of 98.22% in intralingual respeaking and 97.37% in interlingual respeaking. Participants with interpreting experience performed better in interlingual respeaking than those with more subtitling experience, with accuracy rates of 97.42% and 97.33%, respectively. The results of the main experiment show that some subtypes of translation errors are more difficult to manage than others. Cont-omiss errors were the most common type of translation error, followed by cont-subs errors. Participants occasionally struggled to manage form-corr errors; however, cont-add and form-style errors did not appear to pose many difficulties at all. In terms of recognition errors, the clear-cut interpreters made the least amount of recognition errors, whereas those with more subtitling experience made more recognition errors.

The results of each stage of the experimental research show that longer training was required to make interlingual respeaking feasible. Although not in trainee numbers, the University of Vigo module is substantial in course duration and gives a broad view of trainee performance. Longer and more focussed training appears to have improved the accuracy rate for the University of Vigo trainees, as they achieved an average accuracy rate of 98%. Translation and recognition errors still appear to pose problems, as students made an average of 12.2 translation errors per trainee per video, with cont-omiss and cont-subs errors being the most common. For the University of Vigo module, trainees who

performed well (over 98%) had good dictation, a strong ability to multitask, and demonstrated good language, ST comprehension, TL expression, and memory skills. Those who did not perform well (under 98%) could not keep up with the ST, obtained poor recognition results, and thus had poor dictation. More extensive training allowed trainees to train their voice profiles and to have better recognition results than in the previous experiments. Trainees made an average of six recognition errors per trainee per video, which undoubtedly contributed to the increased accuracy rates. Interestingly, the empirical results show that translation and recognition errors go hand in hand. Some trainees who completed the interlingual respeaking module found it difficult to monitor their output on-screen because seeing the recognition errors impacted their concentration and ability to produce a live translation. Others struggled to produce a live translation at speed, causing them to hesitate and incur a high number of recognition errors. Therefore, a lack of translation skills can affect recognition errors, and a lack of dictation skills can impact the live translation.

### **9.1.3 RQ3**

How can quality in interlingual respeaking output be measured?

As the WER model and the NER model do not take the element of translation into account, they were not suitable for assessing interlingual live subtitles. Of the models that have taken the language transfer process into account, the NERT model (Soria, 2016) and the revised NER model (Robert and Remael, 2017) were deemed by the respective authors to both require fine-tuning. The NTR model is the only existing model that has been finalised and is thought to be sufficiently rigorous for assessing the quality of interlingual live subtitles.

The application of the NTR model is subjective, but the structure of the model is robust enough to guide users through the assessment of interlingual live subtitles. Two clear categories of translation and recognition errors allow for all types of potential errors to be identified and categorised according to their severity. When assessing the interlingual respoken texts, it was not thought that an error type was missing from the NTR model or that an error could not be categorised appropriately. Subjectivity when using the model does not appear to be a concern: for the main experiment the inter-rater disagreement was 0.19%, and much of this discrepancy could be put down to the first marker translating out of their mother tongue.



The results of the NER and NTR analysis that have been carried out during this research suggest that the threshold of 98%, which marks an acceptable level of quality of intra- and interlingual live subtitles, is not amended to reflect the complexity of interlingual respeaking. Thirty-five percent of respoken texts from the main experiment and 66% of texts from the University of Vigo module reached 98% or above, which shows that interlingual respeakers can indeed reach the 98% threshold for acceptable interlingual live subtitles and that on many occasions they have exceeded it. Lowering the threshold may run the risk of lowering the quality expected of interlingual live subtitles, which would jeopardise the level of access. Subtitles do not automatically mean that access is being provided, as subtitles with errors and misleading information would not allow an audience using the subtitles to experience the audiovisual text in the same way as an audience that does not rely on the subtitles.

It is thought that the NTR model can be used as an effective tool in interlingual respeaking training. For the University of Vigo module, trainees were given the opportunity to assess their own work with the NTR model. Trainees reported that this was beneficial to their training and that it helped their understanding of the causes and consequences of translation and recognition errors when respeaking. It is for this reason that the NTR model has also been incorporated into the training course presented in Chapter 8, as it is a sure way of highlighting the importance of MA quality in interlingual respeaking training.

#### **9.1.4 RQ4**

What are the required task-specific skills for interlingual respeaking?

Longer training and larger groups of participants in the main experiment and longer training duration in the interlingual respeaking module allowed for concrete assumptions to be made regarding the task-specific skills needed for interlingual respeaking.

The task-specific skills necessary for interlingual respeaking that have been identified through this research are: research mining, knowledge of current affairs, cultural knowledge, multitasking, live translation, dictation, language, SL comprehension, TL expression, error correction, edition, short-term memory, critical analysis, and reflection. Given the rate at which advances in research, technological developments, and market demands occur (Pym, 1991; 2003), this list of skills is not fixed and may be amended overtime since the role of an interlingual respeaker is shaped by the needs of the audience

and the professional world. The top five task-specific skills, as identified by participants and trainees, are: multitasking, live translation, dictation, language, and comprehension. Figure 5.6 categorises the task-specific skills as per their origin from subtitling, interpreting, or intralingual respeaking and Figure 8.1 categorises the skills into the pre-, peri-, and post-process stages of the interlingual respeaking task. The identification of various skills and competences for interlingual respeaking have been turned into learning outcomes for interlingual respeaking training. The training course brings together the essential components of interlingual respeaking, such as MA, subtitling, interpreting, intralingual respeaking, and quality assessment, which have been formed as modules upon which to base units of training. Each module has specific learning outcomes linked to it; these learning outcomes focus on developing the task-specific skills required for interlingual respeaking. Pre-, peri-, and post-process skills have influenced the structure of tasks and suggestions have been made to incorporate the three stages of the respeaking process into situated-learning tasks to prepare trainees for work in the professional world.

#### **9.1.5 RQ5**

What is the best-suited professional profile for an interlingual respeaker?

The quantitative results suggest that there may not be a particular professional profile that is best suited to interlingual respeaking; however, the qualitative questionnaire results show that participants deem the best-suited professional profile to be a simultaneous interpreter or an intralingual respeaker, providing that the latter have the bilingual skills. Although interpreters may initially be better equipped to deal with the complexity of the task, and therefore more skilled and confident from the outset, trainees from other backgrounds may also be able to acquire the necessary skills to perform well. Therefore, the most important aspect of training to focus on may be helping trainees acquire skills that they are lacking from previous experience rather than recruiting trainees with a particular professional profile.

In terms of the best-suited professional profile, an interesting aspect to consider is whether or not intralingual respeaking training is needed for a simultaneous interpreter to become an interlingual respeaker. Dictation practice with the software is essential, but it may be possible to skip intralingual respeaking practice and move on directly to respeaking with a language transfer. The excellent results obtained in the main experiment in intralingual respeaking by the interpreting group suggest that

intralingual training may offer simultaneous interpreters a promising new job opportunity. This is even more relevant now as GALMA has received requests from media corporations, such as Ai-media, that are interested in sourcing training for interlingual respeakers, and the demand for interlingual respeakers is higher than the training on offer (only the University of Vigo and the University of Antwerp have full courses dedicated to respeaking). Companies providing interlingual respeaking services, such as AiMedia, are currently offering two options: interlingual respeaking and, when no professionals are available, SI plus intralingual respeaking, with the respeaker using the interpreters' output as original audio.

#### **9.1.6 RQ6**

How can existing training models and approaches inform suitable training for interlingual respeakers?

Chapter 7 explored the different approaches to translator training and, given the importance of the task-specific skills, a task-based approach was deemed to be the most suitable approach for interlingual respeaking training; therefore, this approach has been adopted within an overall social-constructivist approach to training. Given the practical nature of interlingual respeaking, primarily practical training is required so that trainees can extensively carry out interlingual respeaking exercises to develop the task-specific skills, many of which may only come from practice. The competences and task-specific skills required to produce acceptable interlingual live subtitles form the backbone of the training presented in Chapter 8. To create the training course, a competence-based systematic approach to curriculum design was taken on to make sure that the competences and task-specific skills are acquired by trainees. The task-based approach to learning gives trainees space to complete situated learning tasks to ensure that they are well equipped to carry out similar tasks in a professional environment. The overall approach to training is a learner-centred one that focusses on building training around the skills required for the task. The training has been designed with social-constructivist philosophy at the forefront, emphasising that trainees should construct knowledge interactively with each other, just as they do out in the world. The suggested course activities are highly practical and pertinent to the training of interlingual respeakers; however, due to the interdisciplinary nature of interlingual respeaking, aspects of MA, subtitling, and interpreting have also been incorporated into training. This has been done with the intention of giving interlingual respeakers a thorough understanding of where respeaking

fits within MA, AVT, and TS on the whole and equipping them with the necessary task-specific skills that originate from subtitling and interpreting.

The duration of the training course is of a substantial length so that trainees can be exposed to enough interlingual respeaking practice, allowing them to be able to reach the 98% threshold for accurate interlingual live subtitles. It is likely that interlingual respeaking training will be delivered through both university education and vocational training courses. Therefore, the training course includes seven modules that can be used, as presented in Chapter 8, for either a full vocational training course or for a university module on respeaking. Alternatively, the seven modules can act as different components and could be used individually to inform particular aspects of respeaking training, such as the theoretical side of MA, dictation and software management, intralingual respeaking, interlingual respeaking, and quality assessment.

It has been considered advantageous for trainees to complete a 4-week module on dictation and software management, which to the researcher's knowledge does not currently exist to this extent in respeaker training. Four weeks is a significant amount of time for trainees to be able to create more accurate voice profiles before they begin to respeak, which may result in fewer recognition errors. The trainees for the University of Vigo course spent approximately five hours on dictation practice before they started to respeak, which contributed to them performing well in terms of recognition. It will also give trainees space to explore custom commands which is something that participants and trainees expressed they would have liked to dedicate more time to. The inclusion of a SI module is also considered as a fundamental prerequisite for interlingual respeaking practice. Trainees of the interlingual respeaking module reported that the SI module that they completed alongside intralingual respeaking was highly beneficial. The SI module for the University of Vigo course was simply SI; however, the SI module that has been proposed for the research-informed training course has been adapted to interlingual respeaking.

Kelly (2005) explains that there has been a shift from a teacher-centred (transmissionist) approach to a student-centred (interactionist) approach to knowledge construction and that nowadays a profession-based learner-centred approach is widely used as a basis for approaches to training. For the training course in this research, a task-based approach was adopted, and the training is organised around different tasks concerning respeaking, such as around the different stages of the respeaking process.

The use of real-world authentic tasks (situated learning) allows students to explore what may be expected of them in a professional environment and reflects the pre-, peri-, and post-process stages. A process-centred approach is also taken for pre- and peri-process tasks, as developing the right skills, and understanding how to use them in the different overlapping tasks required to produce interlingual live subtitles, is fundamental. Pre-task activities include researching terminology and preparing the software. Peri-task activities include using longer videos of 15–30 minutes to respeak to reflect the amount of time a respeaker is usually expected to work for at a time. Given the demand for quality in MA products and services, a product-centred approach to translation quality assessment forms an integral part of the post-process of interlingual respeaking training and is where the NTR model takes centre stage.

It has not been possible or desirable to choose only one approach to adopt throughout interlingual respeaking training. The approaches used for the training course complement one another at different stages of the training process and suit the requirements of the competences and skills that each stage intends to help the learner develop.

## **9.2 Limitations of the study**

The use of the research framework, methodology, and methods has highlighted their effectiveness as well as their limitations. The notion of AR, which seeks to improve a situation and empower others, is intertwined with the notion of MA, as it also seeks to improve access to audiovisual texts for a wide audience. The AR methodology means that more stages of AR can be carried out and spiral off into different projects (Neves, 2016) to test the training model and course and improve them where necessary. Although a lack of rigour has not materialised in this project, AR has been criticised for it, which may mean that researchers could favour different methodological frameworks.

The benefit of the 'train, practice and test' approach of the research design is that it brought all participants and trainees up to the same level of respeaking before they were tested. In terms of the practice and test material for the main experiment, the audiovisual material could have been placed in a different order. One option would have been to use videos of increasing speech rates and increasing difficulty of genre; alternatively, all videos could have had the same speech rate and level of difficulty in terms of content so as to better see whether participants were able to achieve higher accuracy rates

week by week with videos of either increasing or the same speech rate, content, etc. The differences in content resulted in Video 4 being the most difficult video in terms of content and topic; a dip in results for this video was seen for all participants, and so these results are not commensurate with participants' levels. The audiovisual material could also have been longer than five minutes in duration to collect more data that could measure other aspects of the interlingual respeaking performance aside from translation and recognition errors. Longer video clips would have allowed for other aspects to be measured, such as whether or not interlingual respeakers experience fatigue at particular points in the respeaking process.

The quality of the data collected for this research is suitable to answer the RQs posed in this thesis. However, not all of the participants from the main experiment and not all of the trainees in the interlingual respeaking module managed to complete the interlingual respeaking tasks; furthermore, not all of the participants answered all of the questions from the questionnaires. This means that the data sets for the main experiment and the interlingual respeaking module are not complete. There is a total of three intralingual and two interlingual respeaking exercises missing in the main experiment. For the University of Vigo module, there are six missing interlingual exercises.

### **9.3 Avenues for further research**

The novelty of interlingual respeaking means that there is an array of topics that still need to be researched. This thesis has tackled the most pressing questions, thereby identifying the task-specific skills required for interlingual respeaking and proposing the first training model and a course proposal for this method of live subtitling. This means that training can be underway and that those involved can start to respond to the demand for this access service that has been outlined in Section 1.1. However, there are still many other potential avenues for future research. First, the material for the training course needs to be produced and its effectiveness needs to be measured. Second, the training must be tested for its scope to provide in-depth training for trainees and for the trainees' output of interlingual live subtitles to meet end users' needs. In other words, a twofold audience-reception study could form the basis of future research. This may include a group of trainees being trained in accordance with the training course or any other course that has been based upon the training model. Data could be collected on trainees' accuracy rates and impressions of the course to see how they performed and

their views on the strengths and weaknesses of the training. Data of the trainees' interlingual respeaking exercises could be used to test a wide audience's reception to the interlingual live subtitles produced. As previously mentioned, a wide audience is likely to be composed of various groups, such as DHOH, hearing, foreigners, people with cognitive impairments, the elderly, children and language learners. The sheer number of groups that the term 'wide audience' refers to may be considered ambitious but it emphasises the importance of audience reception, as the group's preferences and needs are likely to be different from one another. One research project would not be able to cover the ample ground of a wide audience; however, audiences could be addressed in different research projects. The research in this study has provided a comprehensive overview of translation and recognition errors made when producing interlingual live subtitles. However, other factors should also be taken into consideration for future research, such as comparing delay between intralingual and interlingual respeaking, using speed and duration to measure fatigue in interlingual respeaking, and the correlation between error types and the genre, speed, number of speakers, etc. Finally, SMART, the forthcoming international project that aims to further investigate the feasibility of interlingual respeaking, assess quality, and identify competences for skills acquisition, is the logical progression in research in this area. SMART will build upon the results of this doctoral research as the researcher also becomes involved with it.

Although the training course presented in Chapter 8 is extensive, it still has scope for development. A universalist approach to MA has been taken throughout this thesis, and it could also be used to form the basis for future research to extend the notion of MA for interlingual respeaking training and to train a wide audience of interlingual respeakers. For this research, it was too ambitious to create an interlingual respeaking training model that catered for all. The complexity of curriculum design for each potential user and the integration of universal design principles from the very beginning is a challenging task; it is one that requires further research, such as incorporating a wide audience into training.

It is thought that a wide audience could also take part in interlingual respeaking training to create a mirror image *of* a wide audience providing access *for* a wide audience, and therefore, acknowledging the maker-user gap. Greco (2018) argues that access does not mean that an individual solely has an access service at their disposal – it means being able to use it, interact with it, and enjoy the access service. Further theory-based and experimental research could also explore a user-centred approach to the creation and quality assessment of interlingual live subtitles. It is possible that a DHOH audience would not be able to create interlingual live subtitles due to the requirement of listening to the ST. Some

hard-of-hearing viewers or deaf viewers with a cochlear implant may be able to respeak if the appropriate adjustments are made to training. DHOH, hearing and foreign audiences could play an integral part of assessing the quality of interlingual live subtitles to mitigate against poor quality, as they would have a better understanding of what they require and desire from the product, more so than the makers do. Incorporating end users into the process of producing and assessing interlingual respeaking also reflects the belief of the European Disability Forum 'Nothing about us without us' as well as the overall stance of this thesis and interlingual respeaking, which aim to contribute to a shift toward access for all. In terms of creation, extending the universalist stance of MA to interlingual respeaking training would aim to make training as accessible as possible for trainees and would make a space for all to be involved in the training, production, and assessment of interlingual respeaking – including the users.

#### **9.4 Concluding remarks**

To conclude, it appears that a social-constructivist, process-centred, task-based approach to extensive training on dictation, intra- and interlingual respeaking has successfully prepared trainees to deliver accurate interlingual live subtitles via respeaking. It is hoped that the proposed research-informed training model and course presented in Chapter 8 can inform interlingual respeaking training within university education and other vocational courses. Now that the task-specific skills and best-suited professional profile for interlingual respeaking are understood, other areas must be explored in order to integrate interlingual respeaking as a profession in the academic fields of AVT and MA and in industry. Given the similarities that interlingual respeaking has with SI, it is hoped that interlingual respeaking is not just taken up by the AVT community, as was the case with intralingual respeaking, but that it is also considered as a career option by the interpreting community. This may mean that interlingual respeaking is valued (and remunerated) according to its complexity, as touched upon in 8.7.6, which is probably greater than that of SI. After all, interlingual respeaking has the potential to have as much of an impact as SI had when it was first introduced, since it can provide full written access to live events and audiovisual products not only for viewers with hearing loss but for anybody who may need it.



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