University College London

The Didactics of Audiovisual Translation in the Age of Cloud Technologies

ALEJANDRO BOLAÑOS-GARCÍA-ESCRIBANO

Thesis submitted in partial fulfilment of the requirements
for the degree of Doctorate of Philosophy

London, 30th September 2020

Supervisors:

Prof. Jorge DÍAZ-CINTAS

Prof. Frederic CHAUME

You never really understand a person until you consider things from his point of view...
Until you climb inside of his skin and walk around in it.
(Harper LEE, *To Kill a Mockingbird*, 1960)

To my uncle Antonio, who sadly never got to see the printed version of this thesis.

DECLARATION OF AUTHORSHIP

I, Alejandro BOLAÑOS-GARCÍA-ESCRIBANO, confirm that the work presented in this thesis is my own.

Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Alejandro BOLAÑOS-GARCÍA-ESCRIBANO

London, 30th September 2020

DECLARATION OF INTEGRATED PUBLICATIONS

There are passages from some of the sections belonging to this thesis that may have already appear in scholarly publications in the form of edited, or abridged, content. They form part of the author's integrated publications as duly cited and referenced in this work. There are also some parts and results that also been presented in conferences as part of the doctoral training received at UCL.

ABSTRACT

A growing expansion of cloud-based tools has been witnessed in recent years in the audiovisual translation (AVT) industry, leading many stakeholders to embrace and incorporate them into their localisation workflows. Cloud solutions utilise web-based resources and off-site storage to operate, thus enhancing the mobility and flexibility of the workforce among many other benefits. Large media producers distribute localisation work among preferred vendors using cloud-based ecosystems, and so do translation service providers for outsourcing work to their linguists. Higher-education (HE) institutions, however, often lag behind technological advancements and few have incorporated cloud solutions.

In the age of agile cloud technologies, software developers are establishing ever-closer collaborations with both end users and academic institutions in their quest for feedback on user experience. Drawing on this approach, as well as on action research (AR) and descriptive-empirical methods, this thesis proposes user-informed changes to the teaching of AVT, particularly subtitling, with cloud translation technologies.

The main aim of this thesis is to take stock of the far-reaching implications of cloud technologies in the industry and to investigate their potential in the classroom. The ultimate goal is to find ways to exploit them, from a pedagogical perspective, in the teaching and learning of AVT. For this purpose, a series of surveys and experimental sessions were conducted between 2016 and 2019, involving over 300 respondents from a vast array of countries and educational backgrounds.

The participants' responses shed light on the didactic uses and applications of cloud-based AVT tools and suggest possible changes to better cater for the student experience. Finally, this thesis suggests ways in which cloud solutions can be incorporated into the translator training curriculum and proposes a novel model of AVT education that takes into account the cloud and technology turn and is adapted to the needs of the 21st-century translation industry.

IMPACT STATEMENT

This doctoral thesis sets out to explore the uses and applications of cloud-based tools for the learning and teaching of AVT in HE. This research was first conceived as a response to the appearance of both commercial and proprietary cloud-based subtitling systems in the industry. The patent lack of any research on this topic, let alone their application to and impact in HE called for a formal inquiry looking into these new cloud-based ecosystems. Drawing on the assumption that the future of AVT education is inextricably linked to the cloud and online learning technologies, this research takes stock of new developments in cloud technologies applied to AVT and puts them to a test from a pedagogical prism.

This doctoral thesis contributes to expanding applied AVT research with an emphasis on the implications of new translation technologies, with an emphasis on cloud-based tools, on the translator training landscape. Supported by considerable quantitative and qualitative data, and developed in close collaboration with industry partner OOONA, its most significant contribution at a micro-level is the proposal and subsequent application of modifications that have informed improvements to current cloud-based subtitling tools, thus illustrating the many positive results that close collaboration between academia and industry partners can yield.

Based on the feedback provided by participants in the experiments as well as the researcher's experience, the results of the present thesis can potentially be used for the design of a cloud-based educational platform for the learning and teaching of the various AVT and media accessibility practices. It is expected that the results herein will have a considerable impact on how the cloud is considered by the community of practitioners, but most importantly AVT trainees and their trainers. This thesis opens up new avenues of research in the field of AVT didactics in HE and advocates for a greater integration of cloud technologies in the classroom.

ACKNOWLEDGEMENTS

In this section, I would like to say thank-you to the people who have been close and dear to me during the time I was doing this research.

I would like to thank colleagues from different European associations and institutions who kindly offered me the chance to carry out cloud subtitling workshops at their institutions. In doing so, I have been privileged enough to meet hundreds of wonderful people (translation professionals, students, and trainers), who will have to be called “respondents” in this thesis. Thank you all for your invaluable feedback; the workshops/experiments would have never been successful without your kind participation. To my colleague and friend Meike Lindsen, founder-director of Cinema Bioscoop, who deserves particular recognition for giving me the opportunity to run the very first subtitling workshop back in March 2017.

To Obra Social “La Caixa” and UCL HR, for partly contributing to the funding of my doctoral studies. I am equally grateful to CenTraS and SELCS for the conference, project, and training funds that I have received throughout the duration of my doctoral training. To Wayne Garb and Alex Yoffe, from industry partner OOONA, for providing me with access to OOONA Tools and kindly collaborating with me during this research project.

To my colleagues from the UCL’s Spanish language teaching provision team (Dr Adolfo Sánchez, Diego Flores, Haydn Kirnon, Isabel Pérez, Dr Macarena Jiménez, Dr Marga Navarrete, Dr Maria Chiara D’Argenio, and Dr Mazal Oaknín) who made teaching long hours a more enjoyable experience. To Adolfo, Marga and Mazal, for their support as language coordinators, as well as Haydn, for being such a supportive colleague and good friend. Thank you all for being an everyday source of inspiration.

To my colleagues from the UCL Centre for Translation Studies who deserve my deepest gratitude. To Dr Serenella Massidda and Dr Rocío Baños, who have

acted as excellent educators and academic role models. To my former instructors, and now fellow colleagues, Dr Cécile Renaud, Dr Christophe Declercq, Daniela Ford, Dr Emmanouela Patiniotaki, Dr Federico Federici, Dr Louisa Desilla, Dr Louise Fryer, Mara Benetti, and Dr Soledad Zárate. To visiting scholars Dr Agnieszka Szarkowska, Dr Beatriz Cerezo, Dr Irene de Higes, Dr Juan Pedro Rica, and Dr Olivia Gerber, for their stimulating insights, support, and invaluable friendship. To Dr Adrián Fuentes, Dr Mercedes Enríquez, and Dr Nieves Jiménez, who were splendid research advisors in the past and encouraged me to pursue a research degree in audiovisual translation. To Dr Kristijan Nikolić and Dr Sara Ramos Pinto, for kindly reading my thesis and going the extra mile as examiners of my research work.

This thesis would have been impossible were it not for my two supervisors, whose constant and unsurpassable help has been key for the success of this doctoral project. Prof. Frederic Chaume and Prof. Jorge Díaz-Cintas, I will always have the highest admiration, affection, and respect for you both. A particularly heart-felt and well-deserved thank-you goes to Jorge, who has always acted with the greatest kindness, humanity, and honesty as both personal tutor and first supervisor and continues to be an academic role model without parallel.

To my friends who kept asking when I was planning on finishing the PhD since day one. To my colleagues and close friends who are about to finish their PhDs too: Javi, Lydia, Pablo, and Virginia. To Carlos and Lourdes, for their invaluable help to better understand the ins and outs of statistics, including the many intricacies of R and SPSS.

I would like to express my most sincere apologies for not having devoted enough time to my closest friends. To Almu, Dani, Esther, Judit, Laura, Lorena, Lourdes, Ro, and Tiffany. To my fellow cousins Antonio, Bea, Carmen, and Elena, as well as my beloved godmother Carmen and my nephew Olmo, who I wish I could visit more often. A most special thought goes to Carlos. Thank you for your love and support.

Thanks, mum and dad. Nothing would have ever been without you.

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LIST OF ABBREVIATIONS

N.B.: Acronyms of associations, research groups or higher-education institutions have not been included. Please see website links in body text.

Artificial Intelligence	AI
Action Research	AR
Audio Description	AD
Automatic Speech Recognition	ASR
Audiovisual Translation	AVT
British Standard Institute	BSI
Computer-assisted/-aided Translation	CAT
Characters per line	cpl
Characters per second	cps
Descriptive Translation Studies	DTS
European Credit Transfer and Accumulation System	ECTS
European Qualifications Framework	EQF
European Master's in Translation	EMT
Frames per second	fps
Higher Education	HE
Interface as a Service	IaaS
Interpretative Phenomenological Analysis	IPA
International Organization for Standardisation	ISO
Machine Translation	MT
Neural Machine Translation	NMT
Outcomes-based Education	OBE
Over the Top	OTP
Platform as a Service	PaaS
Project Management	PM
Quality Control	QC
Software as a Service	SaaS
Subtitling for the d/Deaf and the hard of hearing	SDH

Statistical Machine Translation	SMT
Translation and Interpreting	T&I
Time Code Reader/Recording	TCR
Translation Memory	TM
Translation Studies	TS
Voiceover	VO
Video on Demand	VoD
Words per minute	wpm

CHAPTER 1

INTRODUCTION

Since the turn of the century, media and communication have undergone deep transformations led by the increasing audiovisualisation, internetisation, and digitalisation of society. The fast-paced creation, distribution, and sharing of audiovisual materials have recently gained even more momentum and have consequently brought about a greater need to localise content to boost international reachability and profitability. Today, audiovisual content represents a much larger proportion of what is being localised and distributed by the language industry than it did some decades ago, particularly because of the impetus lent by on-demand television and video streaming services.

Globalisation, epitomised in the easy and pervasive dissemination of audiovisual productions that need to be translated if they are to reach all corners of the globe, has altered audiences' modes of consumption substantially, promoting greater autonomy on the part of the viewers. Audiovisual translation (AVT) has consequently boomed in the last few decades, reshaping the industry landscape rather rapidly, in an attempt to meet the needs of 21st-century audiences, which seem particularly keen on consuming audiovisual material distributed on the internet, on demand (Barker and Wiatrowski 2017).

For some scholars, the future of the translation and localisation industry is audiovisual and "the ability to handle video source content is becoming a key skill for the translators of the future" (Georgakopoulou 2019*a*:3). Scholarship in the field of AVT has also boomed in recent years, arguably becoming a discipline of its own (Díaz-Cintas and Neves 2015). The learning and teaching of AVT, however, has received much less attention in academic circles, and despite some pioneering works, such as Díaz-Cintas (2008), research on AVT education still has plenty of room for exploration.

AVT has been part of the curricula of a number of training institutions for at least three decades now, but many courses have traditionally been theory oriented and have scarcely incorporated technology, let alone industry-informed conventions and professional practice in the form of situated learning experiences. As scholars become more aware of the paramount importance of technology in AVT (Bywood 2020), a new trend can be witnessed with a (timidly) growing number of specialist, technologically oriented training courses in HE. In an attempt to closely reflect the current industry's landscape and, thus, overcome the perceived theory-practice gap in AVT education, some HE institutions make use of desktop software programs, be they commercial or freeware, so that would-be translators are trained using professional tools. In the age of cloud technologies, AVT courses will have to embrace cloud-based revoicing and subtitling tools if they are to offer up-to-date, pertinent training.

In recent years, cloud-based translation tools have started to be used by large audiovisual media producers and translation companies to carry out AVT and localisation tasks. The ever-more frantic production of audiovisual content compels the localisation industry to reduce time and costs, to increase productivity and to enhance workflow connectivity among professional translators and all the rest of stakeholders involved. The expansion of cloud technologies, as well as artificial intelligence (AI) and automation, in the language and translation industry has been the catalyst for the introduction of substantial changes to the way in which we understand the translator's role in society today (Berns 2018; Massey 2018; van deer Meer 2018). After the technology turn in translation studies (TS) discussed by O'Hagan (2013), and chronicled by scholars like Chaume (2013, 2018*a*) and Díaz-Cintas (2013*a*) in the more specific area of AVT, a new shift seems to be taking place these days, which has been referred by some as the cloud turn (Bolaños-García-Escribano and Díaz-Cintas 2020).

The AVT industry has greatly developed in recent years thanks to a growing demand of localised products and the rapid expansion of new technologies (Díaz-Cintas and Anderman 2009; Georgakopoulou 2012; Baños 2018; Bywood 2020). Most recent trends in the profession have led to a vast increase in the global

workflow handled online and to other technical specificities in this ever-changing landscape (Baños and Díaz-Cintas 2015*a*). In light of these technical developments, the main aim of this research is to investigate the didactic potential offered by these new cloud environments and to find ways in which to exploit them from a pedagogical and educational perspective. As pointed out by Cattrysse (1998:10):

> new technologies involve new types of communication, and therefore new types of translation, adaptation or message processing. New jobs are created as well as new ways of working conditions. These changes imply that research as well as training have to acknowledge the consequences of these evolutions in terms of terminology and method.

Although in some areas of translation, cloud-based tools are open and can be easily bought by freelance practitioners, AVT-specific cloud systems are currently being developed mostly on a proprietary basis in the industry. Some of the largest media distributors and broadcasters, such as Netflix, seem to have consolidated themselves as the new driving forces of a heavily internetised AVT industry. Among their many initiatives, developments on web-based evaluation, translation, and assessment systems, like the Subtitle Originator in the case of Netflix, are of particular interest as they are being instigated in an attempt to improve the overall productivity and quality of their translations. On the other hand, smaller manufacturers and language service providers (LSPs) are engineering their own virtual tools to help professionals to carry out translation commissions, whether as part of their pool of freelancers or as independent practitioners, on a pay-as-you-go basis.

Machine translation (MT) and translation memory (TM) tools are being integrated in this type of ecosystem with the aim of increasing productivity and to ultimately reduce costs. The new translation tools, based on the cloud, tend to share the same functionality as desktop applications, though they seem to be more agile when integrating new developments like corpora. They have also facilitated project management (PM) tasks, with workflows being transferred to web-based environments in order to enhance connectivity and efficiency. These novel ecosystems provide project managers with a more comprehensive overview of

all the steps involved in the projects, from testing and onboarding new subtitlers, to carrying out the translation and the quality control, as well as to issuing invoices. Project managers can see what the translators are doing in real time rather than having to wait until their final submission, thus gaining an advantageous insight into the actual development of the project. Yet, enhancements that could enrich the freelancers' experience of the ecosystem (e.g. communicating among themselves in the cloud) are still to happen.

Developments in information and communication technologies have indeed transformed the way in which international communications are conducted nowadays and are having a great impact in the translation workflow. In addition to immediate communication between the various stakeholders participating in AVT projects, the use of corpora, terminology databases and other data banks within the same subtitling tools and platform interface allow subtitlers and other audiovisual localisers to make the most of language technologies and electronic workbenches to deal with the appropriate use of terminology as well as the transfer of cultural references, intertextual issues, and other translation challenges.

Against this backdrop of a flurry of change in the industry, the educational sector has been more dormant though some pioneer research projects on online learning applications with a strong emphasis on AVT, such as the European funded project ClipFlair (clipflair.net), have set the ground for further research on digital applications that can be maximised for language-related education, including translation.

In HE, keeping up with new technological developments is essential in disciplines like translation and interpreting (T&I) studies. Computer-assisted (or -aided) translation (CAT) tools are not always present at HE institutions, but when they are, they normally take the form of desktop-based solutions. These would include SDL Trados Studio, memoQ and Déjà Vu for TM tools; and the same goes for dubbing tools such as Synchronos, and subtitling editors such as EZTitles, FAB Subtitler, Spot, TEMPO, and Wincaps. Although most of them offer periodical updates, these often need to be purchased again and can end up being rather

expensive. It follows that the use of desktop freeware is still today a common practice in many translator training institutions: OmegaT and Xbench are free tools that integrate features similar to other TM, terminology and quality assessment tools; Aegisub, Subtitle Edit, Subtitle Workshop, and VisualSubSync are used to produce subtitles free of charge; and Audacity, Cappella, DubIt, VideoPad, and Windows Movie Maker constitute free options to practise revoicing in the classroom.

A closer look at the industry shows that more dynamic, cloud-based CAT tools are now emerging, covering all areas of translation, among which are the following: Wordfast Anywhere for TM tools; XTM Cloud, OOONA Manager, and Memsource Cloud for translation management tools; ZOOsubs and OOONA Tools for subtitling; and ZOOdubs and VoiceQ for revoicing.

Among their main characteristics, cloud-based translation solutions have the potential of allowing freelancers and in-house translators to use translation services either for free or at a pay-as-you-go rate rather than having to invest a high amount of money in purchasing their own desktop license and subsequent updates. In this sense, a transition has taken place from capital expenditure, i.e. investing in the purchase of tools, to operating expenditure, whereby users rent a piece of software when and if needed (Díaz-Cintas and Massidda 2019). These tools can also allow for a leaner workflow and have the potential of permitting translators to work synchronically in more ergonomic interfaces.

Today, the integration of professional cloud tools in the translation classroom remains insufficient and their examination by TS scholars is virtually non-existent. When this research started back in 2016, professional web-based subtitling tools had not made it to AVT curricula and were practically unheard of in most educational centres around the globe.

As training institutions seem to have failed to embrace existing cloud tools apace, it comes as no surprise that no dedicated cloud-based platforms have been designed or developed for the teaching of the various AVT practices. The current research project sets out to examine the status quo of cloud-based tools and

explores their didactic applications and potential future impact in the discipline, since, as foregrounded by Tolosa-Igualada and Echeverri (2019:31),

> from a pedagogical point of view, it would not be sound to concentrate uniquely on the present. Translator and interpreter trainers must have one eye put on the present and the other continually scrutinizing the future, although the future is increasingly uncertain.

At a time when a perceived talent crunch seems to have hit media localisation (Estopace 2017), leading market players confess to be in need of expanding their pools of professionals in AVT and new initiatives are being orchestrated, such as The Poool (the-poool.com), a new directory for professionals working in the audiovisual localisation industry. Closer synergies must certainly be established between educational centres and the industry for the wellbeing of the entire profession. Strengthening partnerships with stakeholders and software developers can be instrumental not only in equipping universities with the right workstations, dedicated software and access to the latest cloud-based tools and portals, but also in securing professional careers in the AVT world to would-be translators. The exploitation of situated, socioconstructivist, and project- and task-based learning experiences that showcase cutting-edge technologies is therefore of utmost importance in this scenario, as it helps boosting students' employability and resilience in a mercurial industry heavily driven by technological changes (Díaz-Cintas 2019).

Drawing on previous professional and teaching experience, the key objective of this doctoral project is to investigate the potential uses and applications of professional cloud-based AVT tools in educational settings. Research on this subject is unprecedented and ought to be considered exploratory as well as an academic response to the fast changes that are taking place in the industry. The prime interest of this work is to ascertain the value of these tools among various stakeholders, i.e. trainers, professionals, and students. By testing existing cloud tools, it sets out to explore ways in which they can be better exploited by the aforementioned stakeholders and to identify areas of improvement for their use in AVT education today. The main research questions are thus the following:

- What is the potential held by professional cloud-based AVT tools for the teaching and learning of AVT in HE?
- How can cloud technologies be integrated in AVT education?
- How can user experience inform the analysis and subsequent improvement of such tools?

This research project does not intend to provide answers as to whether cloud-based tools are adequate or inadequate for the learning and teaching of AVT. Since their use in the industry is ever-more prominent and manifest, it is understood that such tools ought to be further integrated in the academic curriculum for would-be translators to enhance their technological skills and become more employable. Neither does this thesis endeavour to establish a comparison between desktop and cloud tools. Instead, it sets out to offer an exploration and in-depth description of the incipient links between cloud technologies and AVT education as well as to analyse how they can be better applied in the classroom.

To answer the research questions, which are further developed in Chapter 5 alongside the methods used, stock has been taken of the literature available on cloud-based technologies and education with an emphasis on AVT. The three chapters discussing the state of the art of AVT, translation technologies, and translation education serve to analyse and challenge ingrained training practices in AVT education, which are bound to be transformed by new technical developments in the age of the cloud (i.e. first research question).

Real, professional cloud tools have to be closely examined to understand how they can be integrated in AVT education (i.e. second research question); however, as previously mentioned, most cloud AVT tools are proprietary. The translation industry being one where technological innovations appear apace, and competition can be extremely fierce, confidentiality can hamper academically oriented collaboration. Despite the many challenges, a partnership was stricken with software developer OOONA (ooona.net).

Collaboration with OOONA has taken place along the whole process, via face-to-face and virtual meetings, email communication, and also in the form of technical reports sent to them with feedback from the experiments. Some of the modifications proposed to industry partner OOONA have been adopted fairly straightaway, whereas others are more complex and have taken longer to be implemented or are still awaiting implementation. This university-industry collaboration is ongoing and prospects for the future are to continue improving the tools and to embark on the development of a potential educational platform. For the tools to be tested, the experiments had to take place with participants who were interested in learning more about cloud technologies in AVT (i.e. third research question). Experiments were conceived as face-to-face cloud subtitling workshops, so suitable study spaces and funding to cover the running costs, along with the right to use audiovisual materials, had to be secured.

Further collaboration agreements were reached with language and film associations (e.g. CinemaBioscoop, cinemabioscoop.eu), as well as international funding bodies (e.g. the Dutch Embassy in Latvia and the UK, www.netherlandsandyou.nl), and a number of host HE institutions, all of which were key to run the experiments. The goal was to lead by example and offer experiments in the form of professional-like workshops that included the latest technologies (i.e. cloud-based subtitling systems) and utilised real materials to achieve, where possible, a tangible output (e.g. a film festival).

As it stands, the core of this research lies in experimentation and user-generated feedback by means of action research (AR). The AR framework, based on continuous cycles of hands-on experimentation that inform the teacher-researcher's practice, is well-known for its capacity to stimulate student-teacher collaboration and social reflection as well as to trigger changes in a considerably short space of time. The experiments took place in Europe from 2017 to 2019 and involved over 300 participants, chiefly undergraduate and postgraduate students but also a few practitioners and several trainers. Experiments constitute an ideal scenario where users can identify issues, glitches, bugs, and any other aspects that detract from the appropriate use of a professional tool. The feedback provided in these experiments has been particularly useful to answer all three

research questions as well as to give industry partner OOONA the means necessary to implement changes to improve the professional tool after each cycle.

The results herein can be of interest to educationists and students alike and are expected to foreground the use of cloud tools in AVT educational environments and the potential they offer to train would-be localisation professionals. An added value of this research project is that it allows to confirm that cloud-based ecosystems constitute a legitimate alternative in HE and can potentially provide a more immersive environment in which innovative educational platforms can be developed so as to integrate professional tools for the teaching of AVT practices in the age of cloud technologies.

This thesis is divided into seven different chapters, including the present introduction (Chapter 1), as well as a list of references and a total of five appendices.

Chapter 2 provides an exhaustive account of AVT as an object of study, including the role played by AVT practices and specialised technologies in both the translation industry and academic circles. The different professional activities subsumed under the so-called umbrella term AVT are those whose linguistic and technical characteristics constrain the work of translators, who normally use specific applications and software to override such technical obstacles. Given the importance of quality in translation education, industry concerns revolving around quality and its impact on AVT assessment are expounded at the end of the chapter.

Chapter 3 examines the many inroads technology has made into the field of AVT, including the more recent developments in TM and MT engines applied to subtitling. The current state of affairs suggests a progressive migration from desktop-based to cloud-based work environments, in which existing desktop-based AVT tools seem to be steadily and systematically being replaced by cloud-based. Some of the reasons behind this evolution are that, contrary to more rigid desktop solutions, cloud systems can potentially make workflows more time- and

resource-efficient, and that translators' workbenches can become more flexible, thus improving mobility and distance collaboration. The chapter also provides a close examination of OOONA Tools, the existing professional cloud-based AVT system used in this research.

Chapter 4 takes stock of the current landscape of translation education and training in higher and further education centres, including the latest research proposals around the acquisition and development of translation competences. Some more recent teaching approaches, such as socioconstructivism, have had a considerable impact on AVT education as we know it today and are duly presented in this chapter too. The focus is subsequently laid on the exponential growth of distance education practices, which is contemporary to the expansion of AVT education provision experienced in HE in the last few decades. More importantly, this chapter contains a thorough discussion on curriculum design for AVT education as well as a reflection on the most essential aspects that should be covered in a specialised course on AVT.

Chapter 5 expounds on the methodology followed in this thesis, presenting its main pillars as well as a discussion on data collection and analytical approaches. The use of an inductive AR methodology that combines descriptive, empirical and experimental methods has proved paramount for the success of this study. The experiments have subsequently informed the application of descriptive and analytical methods to better understand the pedagogical suitability of professional tools and to propose a series of improvements to the existing tool as well as to conceive ways in which they could be integrated in new, innovative educational platforms for AVT education. The premises of AR are briefly exposed and defined as a suitable paradigm to inform current AVT teaching practices. This research has entailed four AR cycles that utilise different methods and instruments, encompassing one electronic survey, a pilot experiment and ten subsequent experiments carried out face to face and followed by an electronic survey, and a summary of informed changes for the improvement of the existing tool that draws on the previous cycles. Empirical research methods and user-centred approaches have facilitated the evaluation and improvement of cloud subtitling solution OOONA Tools. Across the AR cycles, this research pinpoints the

advantages and weaknesses of the tool and ultimately aims to propose innovative ways in which cloud tools can be better weaved into the current AVT education landscape.

Chapter 6 centres on the results obtained during the four cycles of AR experimentation. The first AR cycle consists of an electronic survey that focuses on translator trainers who had taught, or were teaching, subtitling in an e-learning environment. This survey sets the ground for further experimentation on the role played by cloud ecosystems in AVT education. The second AR cycle consists of a hands-on experiment, followed by a survey, involving undergraduate students. This survey offers further insights into the uses and applications of cloud translation solutions in translator training environments from the perspective of novice users of the tool. The third AR cycle, which consists of a series of ten experiments, each followed by a survey, was carried out in the space of two academic years. It culminates the empirical research of this thesis and sheds further light on this area and the results allow for a better understanding of how efficient and usable the tool was perceived to be. Finally, the fourth AR cycle is a summary of proposals and improvements that have been made to the industry partner during the development of this research, which draw from the previous AR cycles.

All authors and researchers referred to in the thesis are included in the final list of references. The five appendices included at the end consist of the questionnaires used in the preliminary study (Appendix 1), the pilot experiment (Appendix 3), and the study experiments (Appendix 4), as well as the various materials that have been used in the experiments (Appendix 2). A table of statistical correlations has also been attached for reference purposes (Appendix 5).

In other words, this research aims to depict current professional practices and conventions in AVT education as well as to explore new pedagogical methodologies in the age of cloud technologies. This doctoral research utilises empirical methods to gauge user experience on translation technologies and thereafter proposes the theoretical foundations for the application of cloud tools

in the AVT classroom. Ultimately, the results of this thesis can rightly point towards the development of innovative educational platforms where cloud tools are integrated with the aim of providing a more immersive experience in AVT education.

CHAPTER 2

CURRENT TRENDS IN AUDIOVISUAL TRANSLATION

In this chapter, the foundations and professional practice of AVT will be chartered. The discussion will focus on the emergence, booming and consolidation of AVT in academia and professional settings, with an emphasis on the role that technologies have played throughout such evolution. A comprehensive analysis of the two main AVT modules (i.e. revoicing and subtitling), pinpointing their similarities and differences, will precede a summary of the main standards applied in AVT in general and subtitling in particular.

2.1. Audiovisual Texts

AVT is an academic discipline and professional field that involves the localisation of audiovisual media content by means of different language transfer practices (Chaume 2018*a*). Localising media content requires awareness of the coexistence of the acoustic and visual communication channels, together with the presence of verbal and nonverbal information. The profession has greatly multiplied and diversified since the advent of digitisation at the end of the 20th century, which in turn led to a growth of academic interest in the complex semiotic texture of audiovisual texts. In the words of Chaume (2016:75):

> an audiovisual text is a semiotic construct woven by a series of signifying codes that operate simultaneously to produce meaning. A film, a cartoon, or a documentary is made up of a series of codified signs, articulated in accordance with conventional editing rules. The way the audiovisual text is organized and the meaning of all its elements results in a semantic structure that the spectator deconstructs in order to understand the meanings of the text. The interest for the translator, and especially for the researcher, lies in disentangling the meaning and functioning of each of these codes and the possible impact of all signs, linguistic and non-linguistic, on translation operations.

Audiovisual texts can also be considered, in simpler terms, acts of communication involving sounds and images (Remael 2001; Zabalbeascoa 2008), in which four different types of signs – i.e. audio-verbal, audio-nonverbal, visual-verbal and

visual-nonverbal – are complementary and equally important in the process of meaning production. Also known under the epithets of multimedia, multisemiotic, multimodal, audiomedial, and multidimensional, audiovisual texts have been theorised within multimodality frameworks by scholars such as Taylor (2003, 2004, 2013, 2016, 2020), Pettit (2004), Pérez-González (2009, 2019), and O'Sullivan (2013). As posited by Díaz-Cintas (2019:182), who draws on Delabastita (1989), the essence of such texts rests on combination of "the acoustic and the visual channels, which together with the verbal and the non-verbal dimensions of communication, results in the four basic elements that define the audiovisual text and validate its semiotic texture." In a nutshell, audiovisual texts are predetermined insofar as they combine two complementary channels and meaning codes whose signs interact and build a semantic composite of a complex nature (Zabalbeascoa 2001; Sokoli 2005). The specificities of audiovisual texts have a direct impact on the different AVT practices, as further discussed in Section 2.4.

2.2. Audiovisual Translation as an Academic Discipline

Auguste and Louis Lumière invented the cinematograph in Lyon, France, in 1895. Despite previous experiments with film rolls in the 1880s, it was in the mid-1890s that the unprecedented history of cinema starts (Nowell-Smith 1996). The first translated instances, in silent films, took the form of filmed, printed texts called intertitles, which "served to contextualize, interpret or elaborate on certain aspects of the visual action" (Pérez-González 2014:42). From the 1920s onwards, early attempts were made to incorporate sound, music and special effects to film, which ultimately led to a major remodelling of the early film industry.

The introduction of the soundtrack brought about a major difficulty for distributing films internationally, as dialogue needed now to be translated into different languages, and companies started to experiment with solutions like multiple-language versions, subtitling, and dubbing (Danan 1991). The first dubbed films were produced in the early 1930s in different dubbing studios, including the renowned Des Reservoirs studio in Joinville-le-Pont, in France (Ávila 1997;

Cornu 2014), which soon became more popular and financially stable than multiple-language films. The translation of cinema, and later TV and internet productions, has grown exponentially ever since, leading to a well-established industry that has played a fundamental role in the distribution of culture and entertainment worldwide.

From an academic perspective, AVT has been theorised since the last quarter of the 20th century (Díaz-Cintas 2008*a*), under many different names, such as film translation, constrained translation, screen translation, and (multi-)media translation, among many others (Gambier and Gottlieb 2001; Pérez-González 2014). The terminological evolution in the field is explained by Gambier (2013:46) as follows:

> the introduction of the term *audiovisual translation* around 20 years ago brought to the forefront the multisemiotic dimension of all broadcast programmes (TV, cinema, radio, DVD). It is today the most commonly used term in the field. […] *Translation for the media* was used sometimes for both AV [audiovisual] and printed media. As for *multimedia translation*, it refers explicitly to the multitude of media and channels now used in global and local communication for different purposes (information, entertainment, education, advertising, etc.).

The scholarly potential of AVT practices such as dubbing was already clear in early works published in *Babel*'s special edition on cinema translation in 1960. However, the foundations are usually attributed to works like Laks's (1957) on subtitling, Fodor's (1976) on dubbing, as well as subsequent discussions on the concept of 'constrained translation' (Titford 1982; Mayoral et al. 1988). Publications such as those written by Luyken et al. (1991), Ivarsson (1992), and Ivarsson and Carroll (1998) were exemplary of how the discipline was booming a few years later and thus progressively becoming more deeply entrenched within academe.

Despite the many challenges encountered for its academic development, arguably because of its core technological dimension, AVT seems to have grown from the margins to the core of translator training programmes in the last three decades (Gambier 2006*a*). Nowadays, AVT seems to be well rooted and stable in academia as testify the vast array of research avenues and existing literature (Pérez-González 2018) as well as the many postgraduate programmes of study

that are currently being offered at European universities and beyond. The first AVT-specific courses appeared in Europe in the late 1980s and early 1990s, such as the Postgraduate Diploma on Film Translation from the Université de Lille (Bréan and Cornu 2014) and the Screen Translation Course offered by the University of Wales (James 1998).

Despite these developments, AVT was still an under-researched area until the mid-1990s, when it boomed into the so-called "golden years of AVT" (Díaz-Cintas 2012:280). In June 1995, the international forum *Audiovisual Communication and Language Transfer* was held in Strasbourg under the auspices of UNESCO, the Council of Europe and the French Ministry of Culture to commemorate the centenary of cinema; and the following year, the first edition of the renowned international conference *Language & the Media* was held in Berlin (Gambier 1998). The first doctoral theses on topics related to AVT also appeared in the 1990s – Zabalbeascoa (1993), Danan (1994), Machado (1996), Díaz-Cintas (1997) –, rapidly leading to a fast-growing community of AVT scholars in the years that followed. The number of doctoral projects produced in this field has since grown exponentially, as the compilation works by Martínez-Sierra (2012, 2017) show.

Contrary to the rather dispiriting landscape depicted by Lambert and Delabastita (1996) at the time, AVT has progressively caught the attention of academics. In one of the early bibliographical overviews conducted by Delgado-Pugés (2011), 169 books, 33 PhD thesis and 697 articles had been published until 2009 on AVT-related issues. A similar quantitative survey was conducted a few years later by Orero et al. (2018:117), who acknowledged that:

> Contributions on AVT have overall grown spectacularly over the years. According to BITRA, until 1980 there were only 78 contributions devoted to AVT (1.3% of the total). The database yields 134 results for the years comprised between 1981 and 1990 (1.8% of the total for that period). The 1991-2000 period represents a turning point in AVT research with 734 outputs (4% of the total). The high productivity (1,789) observed for the first decade of the 21st century (2001–2010) seems to be a symptom of the consolidation of this subfield within TS (taking 6.7% of the cake), while the last period available at the time of writing this article (from 2011 to mid-2016) confirms this exponential growing trend, with already 937 contributions (9.8% of the total for that period).

What is it evident is that AVT is flourishing as well as becoming increasingly interdisciplinary (Szarkowska and Wasylczyk 2018). Today's AVT ecosystem is one of crystallisation of this thriving discipline, and some leading scholars have noted the blossoming importance of AVT in academic circles and even predicted a potential emancipation of the discipline in the future (Gambier 2013; Díaz-Cintas and Neves 2015).

2.3. Audiovisual Translation as a Profession

Referring to the emergence and expansion of the internet, Way (2000:133) stated that "the globalisation of the professional market due to the increased use of technological advances (via modem) now means that we are no longer looking exclusively at a local market." Less than two decades later, translation has indeed been transformed into a completely digitised profession in a similar manner to most liberal professions and arts across the globe.

In the last few decades, translation services, applications, content, and uses have been greatly diversified (Berns 2018:14) while audiovisual consumption has changed significantly. The current state of affairs seems to reinforce the ubiquity of translation, whose societal presence through the screen is more prominent now than ever before (Díaz-Cintas 2019).

One of the main developments that transformed the audiovisual landscape was the introduction and spread of the DVD at the turn of the last century, a storage format that permitted the inclusion of several subtitle and dubbed tracks within the same disc. The internet has also allowed for a rapid transformation of audiovisual distribution and exhibition by those embracing new video-delivery systems. Digital technology has undoubtedly paved the way for a new era of audiovisual consumption and novel distribution methods, such as paid-subscription streaming platforms, whose content is available on demand, hence the term video on demand (VoD). These and other services that formerly depended on cable or satellite now rely exclusively on internet connection, i.e. over the top (OTT) or streaming, and have generally contributed to expanding the

degree of control that audiences have over their viewing experience of audiovisual productions.

As one form of internet-based distribution, VoD “provides users with access to [either] a traditional channel or network’s existing library including new content once it becomes available on the linear schedule” (Wayne 2018:729). VoD services, which encompass the likes of Amazon Prime, Disney+, HBO, and Netflix, *inter alia*, have grown exponentially in the last decade or so, and are expected to continue expanding.

In Europe, VoD usage rates have accelerated steadily from 2012, and sharply from 2014, with consumer revenues in the EU soaring from €919 million in 2010 to €2.5 billion in 2014 (Croce and Grece 2015). More recently, VoD viewing rates have experienced a spike across the board during the COVID-19 pandemic, with the USA, for example, reporting a 32% increase in membership subscriptions in March 2020 and VoD viewership growing up to 57% for some UK providers (Forte 2020). It goes without saying that VoD platforms have stimulated the language industry, too, since content needs to be localised in a myriad of languages and be made accessible to cater for people with sensory impairments.

In the latest official report on the size and wealth of the language industry in Europe, it was found that, back in 2008, the value of the language industry within the EU was €8.4 billion, of which €568 million represented the sector of language technology tools and €633 million the sector of subtitling and dubbing (European Commission 2009). With an estimated annual compounded growth rate of 10% minimum, the European language industry was expected to exceed €16.5–20 billion by 2015. According to a recent press release published by MESA (2019), the total spending on content localisation services in the Europe, the Middle East and Africa (EMEA) market in the television, film and video sector exceeded US$2.3 billion in 2018 and a 5–8% growth was anticipated by 2021. In the most recent global market research on the language industry, Nimdzi (2019, 2020) reinforces its positive estimates from previous years: the size of the global language industry in 2019 was expected to be US$53.5 billion (of which 2.1% accounted for subtitling services), with a predicted five-year growth of 6.8% and

a projection of US$70 billion in 2023; in 2020, the language industry's total value was expected to be US$57 billion worldwide, with an estimated growth of 6.2% and a projection of US$77 billion by 2025. Nimdzi's anticipated growth rate has shrunk in the past few years, from 7.4% in 2018 to 6.2% in 2020 and may even become lower once future market research studies shed light on the impact of the 2020 pandemic.

The latest report published by the LIND Expert Group (2019) expert group, on the results obtained from a survey carried out in Europe in 2019, and completed by 1404 respondents from 55 countries, shows that both independent translators and translation companies expected the industry to continue growing. What is more, almost three quarters of the companies surveyed predicted a relentless growth "clearly fuelled by the uninterrupted industry growth that companies have been reporting since 2014" (LIND Expert Group 2019: online). Nonetheless, it is only reasonable to forecast that the 2020 global pandemic, which has fuelled recession and wrecked the world's economy after businesses around the world were forced to freeze all activity for months, will have a negative impact on the language industry, though its severity still remains to be quantified.

Be that as it may, it is yet true that, today, "the type of content to be localized has changed into fast-consumption digital marketing content which inevitably directed the industry to find better ways to speed up the translation process" (van deer Meer 2018:126), resulting in the expansion of web-based translation systems. As new cloud-based work environments are gaining momentum in the translation industry, the internet does not only serve as a communication channel – i.e. to receive and deliver commissions or projects – but also as an ecosystem where translators can complete the entirety of the translation commission.

In this sense, the evolution of the translation market has run parallel to the emergence of new translation technologies – e.g. TM, MT, corpora banks, quality control (QC) systems, term bases, and other terminology and PM tools (Section 3.2) –, which has been documented in academic works published by Quah (2006), Chan (2014*a*), and O'Hagan (2019), among others. All these technological advances aim at improving the productivity, efficiency and

consistency of the translators' work, although the outcome may not always be positive for all parties involved (Pym, 2011).

The current (r)evolution in the translation industry is also led by the fact that new audiences and readers are also calling for novel ways of translating the products they watch on internet and other media. This is particularly relevant in a globalised world in which "far-reaching technological developments and new forms of communication have given consumers and audiences a great deal of power and autonomy" (Baños and Díaz-Cintas 2015*b*:1). In this sense, not only have audiences changed in terms of their audiovisual consumption habits, but the companies offering AVT have also been forced to evolve and expand their services (Díaz-Cintas 2019). As audiovisual productions have grown in number, and media companies have embarked on more and larger projects, subtitling work has also experienced a hike in commissions. This is in line with the far-reaching changes and continuous transition happening in today's media industry, because:

> digital technologies have accelerated the pace of change not only in film and TV production, but also in audiovisual translation. The industry is facing a turning point in consumer behavior. We are witnessing new approaches to advertising and branding, social networks, the blogosphere and impact of "citizen" journalism, intellectual property rights, digital cinema, video games, etc. (Chaume 2016:68)

From a professional point of view, "the translation phase starts when a company (e.g. a TV channel) sets out to buy an audiovisual text to show in another language; and it ends when such text is shown in the target language for an audience" (Chaume 2004*a*:61). Yet, many internal transformations have occurred in the last few decades and, while AVT practitioners used to liaise directly with clients in the past, now the situation has changed to a large extent:

> production networks have emerged in the wake of economic globalization when lead firms, such as pay-TV providers and privately owned television channels, outsource those activities that were previously performed by in-house or freelance translators working directly with those companies. Today, multinational translation companies serve these lead firms by providing a full package of services, but instead of hiring in-house translators, the turnkey suppliers subcontract translation work (Abdallah 2011:171).

Translation quality and conventions – further explored in Section 2.5 – are inevitably influenced by working conditions and related professional issues experienced by subtitlers. Low rates and abusive working conditions also risk having a negative impact on the overall quality of the translations. As outlined by Arrés-López (2015), and also confirmed by Kuo's (2015) empirical study on subtitling working conditions, while the volume of work is on the increase, rates are stagnating and deadlines becoming tighter.

Generally speaking, subtitlers have traditionally embraced within their professional remit the spotting of clips – that is, inserting timecodes so that subtitles can be in synchrony with the dialogue and the visuals (Section 2.5.1) –, which can be a time-consuming task. As workflows have become increasingly leaner, the use of templates, also known as master files, came to be seen as an answer to cope with the high volume of localisation projects generated by the advent of the DVD at the turn of the century and soon became common practice in the industry (Georgakopoulou 2019*b*), particularly when working with large multilingual projects. Templates are conceived as working documents that contain the already spotted subtitles in the source language and are used in the professional world to maximise resources, save time and cut operational costs (Georgakopoulou 2006), as translators only need to focus on the linguistic side.

As a rule of thumb, template creators produce the text timed file in the original language programme, and the resulting templates are then distributed among translators to be used as a basis for subtitling into their working languages (Kapsaskis 2011). Translators may occasionally be granted permission to change the template's preferences and timecodes.

Although "the prevailing source language of audiovisual media in many countries is English" (Nikolić 2018:80), there is a growing number of productions being created in other languages. At times, it might be intricate to find specialists in certain language combinations, say Korean into Croatian, so it is common in the industry to produce a first translation, which involves spotting, in English that then becomes the pivot text for the production of translations into other languages. As observed by Vermeulen (2011), the original scripts are not usually handed over

to linguists, who only have access to the English template, thus causing quality-related problems, including infelicitous mistranslations and misunderstandings.

This modus operandi has been denounced by some translators and translation associations (ATAA and ATLF 2014) because it constrains the subtitlers' performance and can lead to unnecessary high levels of condensation and linguistic interference (Kapsaskis 2011; Nikolić 2015). Yet, the escalation in the number of multilingual AVT projects has finally imposed their use in most working environments.

Subtitle templates also have a positive impact in the industry's performance. Firstly, they cut costs to the company. Secondly, they allow LSPs to localise audiovisual content more efficiently as they help to minimise distribution delays in different language combinations. Thirdly, the fact that templates tend to share the same timecodes in all languages means that project managers can easily refer to any content whose translation may be problematic; however, many vendors now allow subtitlers to merge subtitles and change timecodes whenever necessary.

From a pedagogical perspective, templates hold great potential inasmuch as they can be used in a plethora of learning activities and have been used in this research work (Section 5.2.2). Not only do they provide an efficient way to teach textual reduction strategies in subtitling, but they can also be used to focus on language transfer rather than instrumental skills, as students do not need to undertake the text timing of the clip. Using templates in the classroom also guarantees that all students are working to the same specifications, which can have its benefits when discussing translation solutions in groups. Templates can be pre-configured, exported and shared with all layout and properties previously set; for instance, the open standard file and data interchange .json format keeps said layout and properties. From a pedagogical perspective, this allows the teacher to customise subtitling tasks and tailor them to specific settings, levels of difficulty and goals. They can also be easily customised to focus on specific learning objectives or outcomes. For instance, verbatim transcriptions can help to practise condensation and the inclusion of blank subtitles – despite the

difficulties they impose – can foster listening comprehension skills, among many other possibilities.

The widespread use of templates, however, has not axed subtitlers' spotting duties for good and all; spotting continues to represent a fundamental aspect of subtitling. As students wanting to enter the profession will certainly have to work with templates and create their own, spotting and origination need to be included in the AVT classroom so that learners become familiar with all types of subtitling tasks before graduation.

2.4. Audiovisual Translation Practices

AVT, as an umbrella term, subsumes a wide range of language transfer modes that differ on the nature of their linguistic output and the translational techniques they imply (Gambier 2003), as well as on how they are ultimately consumed by the target audience. Their inner differences notwithstanding, the common axis across all the modes is the multisemiotic nature of the source and target texts (Orrego-Carmona 2013), in which aural and visual input cohabit. The existence of spatial and temporal constraining factors (Mayoral et al. 1988) justify the utilisation of AVT-specific software tools that allow translators to deal with the technical dimension.

It has traditionally been agreed that there are two main types of AVT practices: revoicing and subtitling (de Linde and Kay 1999). Generally speaking, revoicing consists of substituting the original dialogue soundtrack with a newly recorded or live soundtrack in the target language (Chaume 2006), whereas subtitling operates by displaying written chunks of text that correspond to (condensed), synchronised translations of the original aural utterances as well as some of the visual input contained in the source programme (Gambier 2006*b*). For authors like Becquemont (1996:146; my translation) both modes are perceived rather negatively since "dubbing defaces the sound track (by getting rid of it to replace it with another), [while] subtitling […] defaces the screen slightly" by adding text. In today's mediascape, both revoicing and subtitling encompass accessibility

practices such as audio description (AD) for people who are blind or partially sighted and subtitling for the deaf and the hard of hearing (SDH), whose primary aim is to bridge sensory disabilities that may hinder the reception and enjoyment of audiovisual content.

In broad terms, subtitling is fast, inexpensive, flexible and easy to produce, when compared to revoicing. These are some of the key qualities that make it the perfect translation ally of globalisation and the preferred mode of AVT on the world wide web (Díaz-Cintas 2012*a*). In this sense, subtitling can be said to represent the most successful and economical accomplice of the current processes of internetisation, digitalisation and audiovisualisation of communication (Díaz-Cintas 2015).

The audience's preference for revoicing or subtitling has traditionally been studied – especially in Europe – in terms of nation- and language-bound conventions (Georgakopoulou 2012). This scholarly *idée reçue*, which has been propagated for decades, is described by de Linde and Kay (1999:1) as follows: "subtitling is the favoured form in Portugal, Greece, Wales, Holland, Luxembourg, Ireland, and parts of Belgium. Dubbing is the preferred alternative in France, Germany, Britain, Spain and Italy." However, as posited by Orrego-Carmona (2018:377), "there is emerging evidence that digital technologies and the changing habits of media consumption that digitization has brought about are blurring traditional distinctions between subtitling and dubbing countries", a perception also noted by Chaume (2012). Some examples of the recent changes that have occurred in the localisation of audiovisual programmes are fleshed out by Chaume et al. (2018:11) in the following terms:

> for instance, despite the fact that Portugal has an outstanding subtitling tradition, the audience share for dubbed products is on the rise. Other primarily-subtitling countries, such as Denmark, have recently experimented with dubbed films for younger audiences. A further significant trend can be noticed in subtitling countries such as Greece, Morocco, Egypt, Jordan and other North African countries which are now dubbing Latin American and Turkish soap operas. Furthermore, in Iran, there is a trend of reverse dubbing, that is, the industry has started to dub Persian products into English and Arabic. In Japan, films are dubbed on TV, though the same TV stations also broadcast subtitled films at midnight. In Africa, there have also been some instances of dubbing in the Nollywood scene.

Both revoicing and subtitling encompass many related subtypes, some of which contain a mixture of features found in either two. The following sections offer a depiction of today's most common AVT modes, focusing on the key components that should be borne in mind when developing and implementing purposeful curricula and pedagogical methodologies for training would-be audiovisual translators.

2.4.1. Revoicing

Revoicing is a hypernym that covers different AVT practices, most of which are based on the partial or total replacement of the dialogue contained in the original audio track. The two main practices are (lip-sync) dubbing and voiceover (VO). Whereas the latter is usually inexpensive, the former is more financially onerous as it requires many more resources, including a dubbing studio, sound engineer, director, and voice talents.

There are several revoicing taxonomies, which vary greatly depending on their authorship. For instance, Luyken et al. (1991:63) identify lip-sync dubbing, VO, narration, and free commentary; whereas Karamitroglou (2000:4) differentiates between lip-sync dubbing, VO/narration, and free commentary. In this thesis, the more recent work by Chaume (2012), outlining eight types of revoicing practices, will be discussed below.

2.4.1.1. Dubbing

Dubbing, also known as "lip-sync dubbing" (Luyken et al. 1991:71), consists of replacing the original soundtrack of a film, or any audiovisual production, containing the source language dialogue, with another track on which the translated dialogue exchanges in the target language have been recorded (Chaume 2012). From a strictly technical point of view, dubbing can be defined as an activity in which a new recording of dialogue and sound is integrated into an audiovisual production (Konigsberg 2004), which can entail an interlingual or

intralingual transfer (Baker and Hochel 1998). However, in the field of AVT, dubbing is most often considered an interlingual practice and is frequently observed in so-called dubbing countries like Austria, Brazil, China, France, Germany, Italy, Japan, Spain and Turkey, among others. Even in subtitling countries, dubbing is still frequently used in animation and cartoons (Pageon 2007; Lallo and Wright 2009). More recently, mainstream lip-sync dubbing is becoming more widespread in English-speaking countries, including the UK and the USA, where an increasing number of film and TV productions are being dubbed in English, and "the practice is currently being revamped and going through an experimental phase, finding its feet in the dubbing world among more consolidated dubbing industries" (Hayes forthcoming),

Although dubbing was invented prior to the rise of Western European fascist regimes, the latter did foster its use, which became an effective instrument to censor films by removing inconvenient cultural references and values that clashed with the official doctrine (Danan 1991). Furthermore, as studied by Ballester-Casado (1995, 2001) in the case of Spain, dubbed versions contributed to re-shaping national consumption habits and to promoting linguistic uniformity across a given country, to the detriment of regional dialects and minority languages.

The fact that the dialogue soundtrack is replaced with one in another language has many implications. Firstly, the translated dialogue lines need to be accurately synchronised with the visuals and main soundtrack as synchronisation issues disrupt and detract from the quality of the viewing and can cause frustration. Secondly, the dubbing has to maintain the suspension of disbelief that characterises certain audiovisual productions like films and TV series (Caillé 1960; Martínez-Sierra 2008; Bosseaux 2015; Spiteri-Miggiani 2019), i.e. avoiding any potential detraction from the audience's tolerance towards accepting the fictionality of the audiovisual programme.

One of the key characteristics of dubbing is a threefold synchrony (Luyken et al. 1991; Whitman-Linsen 1992; Agost 1997, 1999; Chaves 2000; Chaume 2004*b*; Spiteri-Miggiani 2019), namely phonetic (matching the translation with the actor's

lip movement), kinetic (matching the translation with the actor's body movement), and isochrony (matching the translation with the duration of the actor's utterance). Respecting these various synchronies plays a core role in the translation and adaptation of the dubbing script, which requires the use of language- and country-bound dubbing symbols, or notations, whose aim is to "help dubbing actors imitate the screen actors' paralinguistic signs: sounds, pitch, tone, volume, primary voice qualities, etc." (Chaume 2014:58). The implementation of these three synchronisations, along with the production of appropriate register, grammar, and diction, "is the result of a conscious agenda to domesticate the translated text, so that viewers do not realise that what they are witnessing on screen is a translation" (Chaume 2020:113).

According to Spiteri-Miggiani (2019:25), the basis of any dubbing commission is the dubbing script, i.e. "the translated, adapted and synchronized target language dialogue list that may encompass additional paratextual features (such as dubbing annotations, time codes, tempo markers, and loop segmentations)." There are three main phases to prepare a dubbing script: translation, adaptation, and loop segmentation. The linguistic transfer that takes place in the translation phase of a dubbing project is only one of the many tasks carried out by the translator, as the dialogue writing, conceived as the "creation of a credible, convincing oral target text" (Chaume 2012:37), is also a key component of the dubbing process because it "implies remoulding a translated dialogue list into one that is to be recited by dubbing actors and that is to act as a working tool in the recording studios" (Spiteri-Miggiani 2019:25).

Once the translation has been completed, it is customary to segment dubbed scripts into takes, also known as loops, which are dialogue lines that have been numbered and allocated a time code of entry. The origins of this practice are further explained by Chaume (2012:47) as follows:

> historically, translations were divided into short portions of text because dubbing actors had to memorize all their dialogue lines, Dialogues were broken up into these dubbing units, known as takes, enabling dubbing actors to concentrate fully on the screen actors' movements and mouths.

Across the many different dubbing countries, take segmentation differs enormously (Chaume 2007). For instance, in Spain, takes comprise of eight to ten lines, of which one voice talent cannot be assigned more than five, whereas in France there is no limit to the number of lines permitted per take and the change of take is triggered by a maximum duration of one minute. On the other hand, in Germany, takes usually contain five lines only, and, in Italy, they can have over twelve. To identify takes, the dialogue writer should include, at least, the in (and out) timecode, the number of take and the name of the character or narrator speaking, though this is not always the case.

Symbols are also used to indicate non-verbal information (e.g. when speakers are on or off screen and when a speaker is shouting). Symbols are often company-specific as well as country- or region-specific (Chaume 2007, 2012), but some of them are common to France, Germany, Italy, Poland, Spain, and the USA. A more recent account of frequently used dubbing symbols can be found in Cerezo-Merchán et al. (2016) and Spiteri-Miggiani (2019).

As discussed by Baños and Chaume (2009), prefabricated orality is a prevalent linguistic phenomenon in most original and dubbed programmes, and is the reason why the script translation task requires a thorough understanding of the main features that characterise spontaneous discourse, both in real life and in audiovisual texts. As straightforward as this may seem, the representation of orality in written (dubbing) scripts poses many linguistic challenges and intricacies (Baños 2009). This is so because, as highlighted by Bartrina and Espasa-Borràs (2005:87), it revolves around "the paradoxical 'ordeal' of having to (re)create realistic, credible *oral* texts, even though the source texts are *written*, as is the translation which is handed to the client." To be able to echo the features of spontaneous oral register requires the sensible exploitation of the flexibility of syntax, colloquial language, word derivation, style, and rhythm, while at the same time producing credible dialogue exchanges and complying with lip-sync constraints (Chaume 2012).

Partial dubbing, also known as half-dubbing, phrase-synching, concise synchronisation (Hendrickx 1984) and semi-sync, or *simil-sync* in Italy (Sileo

2018), has taken different forms across the years. Originally, it consisted in the combined use of lip-sync dubbing for the leading characters, with few voice talents, and narration (Section 2.4.1.2) for the remaining secondary characters (Chaume 2012:3). More recently, scholars seem to agree that this type of VO, also known as Gavrilov translation, follows the Russian tradition of using multiple voices for the translations but remains a case of VO nonetheless (Matamala 2018). Chaume (2013:108) offers a more detailed description, arguing that:

> it is more elaborate than conventional voice-over and is used to translate fictional texts in which a male reader reads the leading male's dialogues in a film or series, a female reader reads the leading female's dialogues, and sometimes a third voice reads the dialogues of other main characters in the film (a child's voice for a boy or girl, for example); all the other characters' dialogues are read by one other voice.

It seems that today's applications of partial dubbing have been subject to multiple transformations, leading to blurrier divides between VO – which Sileo (2018) considers synonymous with half-dubbing – and dubbing. For instance, the use of new VO and dubbing approaches in TV reality in Spain, characterised by flexible synchronicity (Baños 2019*a*:279), is only one of the many and versatile uses of this term, which "has resulted in terminological confusion and nowadays these terms need to be carefully defined as they can lead to different interpretations" (Baños 2019*a*:281).

2.4.1.2. Voiceover and Narration

VO, also known as single-voice translation and *lektoring* in countries like Poland and half-dubbing in Italy (Sileo 2018), is a narrative technique inherited from character narrators and third-person VO narrators or commentators. They used to fill silent gaps by voicing narratives in newsreels, shorts and documentaries, and later on in fiction films (Kozloff 1988). VO is often defined as "the final product we hear when watching a programme where a voice in a different language than that of the original programme is heard on top of the original soundtrack" (Orero 2009:132).

Drawing on previous works by Luyken et al. (1991) and Gambier (1996), VO has been defined as "a faithful, literal and complete version of the original audio"

(Franco et al. 2010:26). The debatable use of terms like ‘faithful’ and ‘literal’ notwithstanding, this statement could be interpreted in the sense that VO traditionally employs foreignising techniques to enhance authenticity.

VO is commonly used for the translation of documentaries, interviews, low-cost reality shows and specialised productions (e.g. medical online courses, technical instructions and tutorials), where synchronicity is laxer than in lip-sync dubbing. In her analysis on the use of VO in TV reality in Spain, Baños (2019*a*:279) remarks that:

> the original and the translation may start at the same time but do not often finish in synchrony; internal pauses are not always maintained; and the duration of both tracks is rarely exactly the same. We are thus dealing with a more flexible type of isochrony, where the duration of the translation has to correspond approximately with that of the original, providing voice talents and sound technicians enough leeway to deliver it in synchrony with the original, or to resort to a slight asynchrony.

The emphasis on the intentional similarity of the initial and final words or phrases between the source and the target narrations, which resemble each other semantically and structurally, is an attempt to create in the audiences the illusion of a faithful rendering (Franco et al. 2010:26). The use of more than one voice depends on the idiosyncrasy of each commission; however, the standard practice in the case of documentaries is for a single male or female voice talent to interpret the narrator.

Narrations, also known as off-screen dubbing (Franco et al. 2010; Matamala 2020), are live or pre-recorded forms of oral transfer that provide abridged renditions of the original speech, which are then timed so as to avoid clashes with the visual syntax of the original programme (Pérez-González 2009:16). In narrations, information is prioritised and then summarised, conveying the most important details from the verbal input of the programme. In this respect, it constitutes a technique almost identical to VO, with the notable difference that the original soundtrack is wiped out.

2.4.1.3. Interpreting

Both simultaneous, and particularly consecutive, interpreting have been rarely used in AVT (Chaume 2013), especially since the invention of electronic subtitles (Section 2.4.2). Nonetheless, they are still practiced to translate certain TV, radio and live programmes, as well as in conferences, theatre and cinema festivals where tight deadlines and funding constraints are very common (Pérez-González 2014; Bartoll 2015). Working conditions seem to vary substantially and whether interpreters have access to the programmes and scripts in advance depends on the commissions. When the interpreter is given a dialogue list or script, the activity should be considered sight translation.

The interpreter translates orally what the different actors and narrators enunciate on screen, which means that the audience can still listen to the original soundtrack. Simultaneous interpreting is a practice most often restricted to film festivals and seems to have been inspired by silent film narrators, known in Japan as *benshi*, "who narrated films and enacted characters while standing or sitting beside the movie screen" (Fujiki 2006:68). Similarly to the Japanese *benshi* are the French and Canadian *bonimenteurs*, the Hispanic *comentadores* or *explicadores* and the sub-Saharan African video-jockeys (Fuentes-Luque 2019), all of whom preceded interpreters in the film industry.

Following Bartoll (2015), sign language interpreting should fall under this category too; a translational practice that is frequently used on TV, especially in informative contexts (e.g. news, interviews, and talk shows), to address the needs of viewers who are d/Deaf or hard of hearing.

2.4.1.4. Audio Description for People Who Are Blind or Partially Sighted

AD, regarded by some authors as a type of mediation (Braun 2007) or adaptation (Heft 2013), consists in "using speech to make AV [audiovisual] material accessible to people who might not perceive the visual element themselves" (Fryer 2016:9) as well as to inform them of the source of some sounds that are

relevant to fully understand what is going on (Orero 2005; Snyder 2005). Perhaps a more accurate definition is the one provided by Whitehead (2005:960):

> an additional narration that fits in between dialogue to describe action, body language, facial expressions, scenery, costumes—anything that will help a person with a sight problem follow the plot of the story. It is a vital service for anyone with a sight problem and is available on television, video, DVD, at cinemas, theatres, sports grounds, and museums.

International, European and nation-specific accessibility laws have allowed for the expansion of AD, especially in the case of public broadcasting services, in an attempt to assuring equal access to media content for visually impaired audiences (Greco 2016, 2018). Relevant examples are the United Nation's *Convention on the Rights of Persons with Disabilities* (2006) and the *European Accessibility Act* (2019), true milestones in the quest for further inclusion and integration of disabilities in the realms of politics and society.[1]

Guidelines for AD projects are "often still led by intuition and convention" (Braun 2008:16) and tend to lack homogeneity at a supranational level, even if some unsuccessful attempts have been made at its systematisation, such as the Pear Tree Project (Mazur and Chmiel 2012).[2] The guidelines created by the American ADC (2007/2009), the British Ofcom (2000), the Spanish AENOR (2005) and the elaboration of cross-national guidelines by Rai et al. (2010) and ADLAB (Audio Description: Lifelong Access for the Blind, 2011–2014, adlabproject.eu) need to be noted as some of the main attempts at unifying current practices in AD. Despite their sharp differences: "the common denominator across all the guidelines is that description should only be added during pauses in a film/ TV programme and at no cost should the description undermine the film/ television programme" (Rai et al. 2010:3).

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[1] Further information on accessibility legislation and conventions around the world may be found on the Media Accessibility Platform (mapaccess.uab.cat).

[2] This project remains an ambitious case study in twelve languages that finally proved to be insufficient for the authors to propose a set of European guidelines, for they admit to have inconclusive results with too much research noise and methodological limitations, arguing that "more research is needed, especially in the form of studies involving eye-tracking methodology, which could yield objective data concerning the perception of visual stimuli" (Mazur and Chmiel 2012:22).

Often incorporated to AD, especially in live performances and the scenic arts, is audio subtitling (AS), which is the oral rendering of subtitles in combination with the audio described scripts or narrations. AS is used to deal with foreign programmes in countries where these programmes are subtitled, since foreign productions in dubbing countries are often audio described on the basis of the dubbed version. The reading-aloud of the subtitles and scripts is usually performed "to make foreign TV programmes more accessible for those who are visually impaired, and also for the elderly and for people with language impairments" (Braun and Orero 2010:173).

2.4.1.5. Amateur Dubbing Practices

Fandubbing is, along with fansubbing (Section 2.4.2.6), a type of translation performed by fans (Wang and Zhang 2015). Also known as amateur and non-professional dubbing, it is a form of user-generated translation that fans do of their favourite programmes, and which can be either intralingual or interlingual. This phenomenon has grown extensively in the last few decades, probably thanks to the democratisation of technology and the improvement of internet connections. Fandubbers most usually work with trailers, cartoons, TV series and other audiovisual productions that have not yet been distributed in their language or country. Their objective is to make them available as soon as possible, almost exclusively online and for free. Fandubbers translate the videos using digital sound editing software to alter the soundtrack of the original version and to then insert a newly dubbed track that has been recorded separately (Chaume 2018*a*).

Fandubs are sometimes created for humoristic purposes, and this phenomenon is known as parodic dubbing, although this term co-exists with *fundubbing*, gag dubbing, dub comedy, and fake dubbing. *Fundubbed* versions are not new and have been produced since "the consolidation of sound film and post-synchronisation techniques, involving a variety of audiovisual genres and in a wide range of contexts" (Baños 2019*b*:3). Furthermore, according to Baños (2020), fandubs in the form of parodic dubbing may as well precede fansubs. Fandubbing traditionally refers to "manifestations of participatory and convergence culture involving the use of dubbing, regardless of whether these

are undertaken by fans, amateurs who do not deem themselves fans, or even dubbing professionals" (Baños 2019*c*:155). This has resulted in a terminological conundrum that, following similar research in subtitling (Díaz-Cintas 2018), has led to a new conceptualisation in order to encompass other forms of dubbing – e.g. activist, altruist, and promotional – under the umbrella term "cyberdubbing", which, as explained by Baños (2019*c*:156), ranges "from the promotion of specific audiovisual material and the altruistic dissemination of dubbed material, to the criticism and instigation of socio-political changes."

2.4.1.6. Free Commentary

Free commentary is an adaptation practice whereby a comedian manipulates the ST to produce a revoiced programme for humoristic purposes. There is no aim to reproduce content faithfully or to create a rigorously synchronised translation; instead, free commentary is more explicit and informal, and it contains more details, as well as jokes and funny comments. In Russia, the film translator Goblin, cognomen of Dimitrii Iur'evich Puchkov, started making parodies of internationally acclaimed blockbusters in 1995, which gained wide distribution at the turn of the century thanks to file-sharing platforms. Despite their poor technical quality, "Goblin's translations reached mass audiences, as his fans were able to copy and distribute extracts or full versions of his works via informal networks or on the internet" (Strukov 2011:238). After decades of producing parodies, Goblin's creations constitute a domesticating practice that utilises translations to re-create humour and disseminate cultural products that are semantically and semiotically far from their original counterparts.

2.4.1.7. Remakes

A remake is a new production or adaptation of a film in a different language. Although this practice does not seem to fit in traditional AVT-specific taxonomies, recent studies have argued that they can be considered "a form of composite translation" (Evans 2014:310). For some authors, remakes are recontextualisations of a film "in accordance with the values, ideology and narrative conventions of the new target culture" (Gambier 2003:174), and they

become “a kind of appropriation by changing the language and also to a certain extent the plot, with all its values and assumptions, the character and the cultural context” (*ibid.*:46). If the first remakes, done between 1930 and 1950, were European adaptations of USA films, the early noughties saw the advent of Hollywood remakes based on European and Asian feature films. At present, major production companies, like Netflix, are shifting towards original films and TV series that are created in languages other than English and then subsequently localised in an array of languages rather than remaking them in English. Hollywood producers and large media distributors like Netflix are also moving away from remakes and favouring the mainstream lip-sync dubbing of international films and TV productions in English (Hayes 2020). Along with the already established subtitling tradition, this new approach to the localisation of audiovisual media has far-reaching implications on the curtailing of USA remakes, which seem to be fading away progressively.

2.4.2. Subtitling

Subtitling, a superordinate term that encompasses different AVT practices, implies the reproduction on screen of original dialogue, sounds and text in the form of “snippets of written text superimposed on visual footage that convey a target language version of the source speech” (Pérez-González 2014:16).

Subtitling can be either interlingual or intralingual, according to whether they are in the same or a different language to the one heard in the audiovisual production, and sub-varieties exist depending on the language combination (e.g. monolingual, bilingual, reverse). Further, subtitles can be closed or open, depending on whether they can be removed or not from the screen. Another distinction is made by Gottlieb (1994:104), for whom “vertical subtitling takes speech down in writing, whereas diagonal subtitling being *two-dimensional*, ‘jaywalks’ (crosses over) from source-language speech to target-language writing.”

When produced in advance for recorded programmes, in what is known in the industry as pre-prepared subtitles, they take the form of pop-on or pop-up text

that “can appear anywhere on the screen as a block and remain visible for a certain time before they disappear to give way to a new subtitle” (Díaz-Cintas 2013*b*:279). As opposed to this way of working offline, subtitles can be produced online for (semi)live or real-time events, in which case they are usually rolled-up or scrolled, thus appearing “from left to right and when the line is filled it scrolls up to make way for a new line, and the top line is erased to give way to a new bottom line” (ibid.:279).

In the 1980s, laser techniques were introduced whereby subtitles were burnt onto celluloid, especially for theatrical releases, therefore allowing for little post-editing changes. Electronic subtitles, which were originally utilised in film festivals, have now become the most common type as they do not require the burning of the subtitles. Instead, the subtitles are projected onto the film copy and can be easily edited if need be.

With the expansion of subtitled material on social media and video games, the very concept of subtitling is now being diluted, as videos can be found without sound that include subtitles, as well as multimedia products that contain textual instructions that resemble standard subtitles. The changes have also had a knock-on effect on the terminology used in the industry with companies like Netflix referring to this activity as text timing (Netflix 2020).

2.4.2.1. Interlingual Subtitling

Interlingual subtitling, long established as one of the main AVT practices, has been defined as a “diamesic translation in polysemiotic media (including films, TV, video, and DVD) in the form of one or more lines of written text presented on the screen in sync with the original verbal content” (Gottlieb 2012:37). Another definition is the one proposed by Díaz-Cintas (2013*b*:274):

> a translation practice that consists of rendering in writing, usually at the bottom of the screen, the translation into a target language of the original dialogue exchanges uttered by different speakers, as well as all other verbal information that appears written on screen (letters, banners, inserts) or is transmitted aurally in the soundtrack (song lyrics, voices off).

Interlingual subtitles have been commonly used in so-called subtitling countries, although their expansion goes beyond geographical and cultural boundaries (Martí-Ferriol 2013). Interlingual subtitles are increasingly being used in the industry inasmuch as DVDs/Blu-rays until recently, and today's OTT and VoD media services, resort to the production of multilingual subtitles to reach a wider audience (Díaz-Cintas 2020*a*).

Subtitles are characterised by a number of spatial and temporal considerations that necessarily have an impact on their linguistic makeup and are fully documented in Section 2.5.2. The other important attribute of subtitling is its close links with technology, discussed in detailed in Section 3.3.

2.4.2.2. Surtitling

Surtitles, also called supertitles in the USA, were originally invented in the 1980s to translate live opera and then spread to other live performances like theatres. They can be either intralingual or interlingual and are normally displayed above the stage (Figure 2.1) by means of projection or presentation software (Burton 2009:59), although nowadays they can also be watched in front of the patron's seat (Figure 2.2), or on mobile phones and tablets.

Figure 2.1. Theatre surtitles (photograph by Daisy Jacobs, Theatreinparis.com)

Figure 2.2. Opera screen surtitles by Figaro Systems, USA

Surtitles convey the "linguistic contents of a theatre play presented to the audience concomitantly to the performance" (Carrillo-Darancet 2020:174). According to Mele-Scorcia (2018), surtitles are unobtrusive but remain condensed and reduced text captions (in the same language as the performance) or translations (in a different language) that need to be synchronised with a live performance. This synchronisation is determined by the unexpected changes that may occur in the delivery of the lines during the show. So, although the surtitles can be produced before the actual event, their timing cannot be predetermined as it will vary depending of the acting (Desblache 2007). In this sense, the work of the surtitlers is substantially different to that of the subtitlers who deal with pre-prepared, interlingual subtitles (Low 2002).

In a similar fashion as with interlingual subtitles, the aim of interlingual surtitles is to convey the overall meaning of what is being enunciated or sung, while still complying with temporal and spatial limitations (Ippoliti 2009; Carrillo-Darancet 2014). Yet, unlike in the case of subtitling, some clarifications may be added to the surtitles so that the audience can follow the plot more easily (e.g. characters' names).

2.4.2.3. Intralingual Subtitling and Captioning for the Deaf and the Hard of Hearing People

Intralingual subtitling, or captioning, has been traditionally done to address the needs of people with hearing impairments (Neves 2008*a*), though this practice is

known to have a very positive impact on foreign language learners too (Caimi 2006; Vanderplank 2016). Captions are widely used nowadays, not only for the teaching of foreign languages, but also to foster a wider distribution of audiovisual programmes on the internet (Talaván 2013), especially since many people acknowledge watching videos without audio. In fact, according to a recent survey by Verizon Media and Publicis Media (2019), 69% of the surveyed people reported to watching videos with no sound in public spaces. Additionally, 80% of subtitles users were not deaf or hard of hearing and, again, 80% claimed that they were more likely to watch a video entirely when captions have been made available.

SDH is a practice used to produce subtitles (or captions) that constitute "a visual representation of the verbal element that is delivered orally, combined with the pictures shown on screen" (Zárate 2014:26). These subtitles do not only render dialogue but also sounds, paralinguistic details and further information that is delivered aurally and is considered essential for the understanding of the diegesis (Szarkowska 2020).

In SDH, subtitlers transfer dialogue, along with 'who said what' key information whenever this is not clear from the images. This can be done by means of identification labels, change of colours or displacement of text to follow the speakers. Moreover, subtitlers ought to identify, and verbally express, how utterances are enunciated (e.g. emphasis, tone, accents and foreign languages, voice noises), and describe the nature of any relevant aural information (e.g. music, sound effects and environmental noise), so that the deaf and hard of hearing are able to pick up all nuances in written form. Spatial and temporal constraints also apply to SDH, although reading speed values tend to be somehow lower than those used in interlingual subtitling (Zárate and Eliahoo 2014), especially in the case of children's programmes (Tamayo-Masero 2016).

As discussed by Bartoll and Martínez-Tejerina (2010:70–71), the d/Deaf community is rather diverse, which makes standardisation:

> a controversial and complex matter since the labels deaf and hard of hearing cover an extremely heterogeneous group, consisting of, for example, deaf children, cochlear implanted people, oralists, sing language users and prelingually and postlingually deaf people. All these individuals have very different needs and requirements.

To better understand the implications of SDH at a practical level, the conventions drafted by Linde and Kay (1999) as well as the set of guidelines proposed by Ofcom (1999) and the BBC (2018) are useful not only for professional but also educational purposes. Subtitles ought to identify speakers and utterances with the use of colours, name tags and/or strategic placement, especially when their location is problematic (e.g. off screen, unknown voices, narrations or groups of people). Upper-case letters are normally used to indicate shouting or screaming and the tone of voice – e.g. irony, contempt or surprise – can be reproduced with the addition, at the end of the statement, of exclamation or question marks withing round brackets. Accents and foreign languages are occasionally transcribed or transliterated with non-standard spellings, or preceded by an explanatory label indicating the speakers' linguistic variety. Humour can be signposted with the use of certain punctuation signs, like inverted commas, to call the viewer's attention on a specific pun or instance of verbally expressed humour. Lyrics are usually transcribed and follow a sign, such as #, ♪, or ♫. Sound effects can be verbally transliterated using descriptive tags in block letters, either with or without brackets. In addition to these recommendations, subtitles ought to keep internal and external redundancy, produce grammatical structures in a simple and easy-to-read fashion, and foster short memory and comprehension by delivering information coherently throughout (Neves 2009).

Similarly to other access services, SDH has known a rapid evolution in the last few decades, particularly from a quantitative perspective, thanks to the enforcement of international and national legislation, such as the EU's *Audiovisual Media Service Directive* (2010). In some countries such as the UK, where SDH has been produced since the early 1980s, the percentage of

captioned programmes currently reaches a 100% for public service television productions (Evans 2003).[3]

2.4.2.4. Live subtitling

Live subtitles, also known as real-time subtitles, are produced at the same time as a programme is being broadcast or screened and therefore are often fast and verbatim (Romero-Fresco 2018*a*). They used to be produced by "stenotyping or a pool of subtitlers working with dual keyboards" (Díaz-Cintas 2013*b*:279), but nowadays respeaking has taken over as the preferred technique in most Western European countries, as it is more cost effective and time efficient that the previous methods. Having said that, there are countries, like Canada and the USA, where stenotypists are still preferred over respeakers by most broadcasters (Romero-Fresco 2018*a*).

Respeaking, also known as speech-based live subtitling or real-time subtitling via speech recognition, is the production of subtitles for live programmes or events by means of speech recognition, whereby a respeaker listens to the original dialogue and 're-speaks' it through a speech recognition piece of software, which is connected to a subtitling editor and then displays the text as subtitles on the screen with the shortest possible delay (Romero-Fresco 2011).

Live subtitles produced by respeakers were traditionally intralingual and conceived in teletext format (Evans 2003) since they targeted hearing-impaired audiences (Arumí-Ribas and Romero-Fresco 2008; Eugeni 2008). In recent times, however, live interlingual subtitling is becoming increasingly common. That is, respeakers not only endeavour to orally reformulate and deliver written captions live, but they do this across languages too. Interlingual respeaking might be perceived as a more complex and cognitively demanding activity than

[3] According to the Ofcom (2019:12), "the BBC channels (excluding BBC Parliament) are required to subtitle 100% of their programme content, audio describe 10% of their programme content (except in the case of BBC News), and sign 5% of their content. The corresponding targets for ITV1 (including both the regional and national licensees) and Channel 4 are 90%, 5% and 10%, and for Five and S4C1 80%, 5% and 10%".

intralingual respeaking, although experimental research has not been able to fully prove this (Szarkowska et al. 2016). Respeaking is often associated with inevitable delays, lapses and infelicities that often remain unsolved due to its synchronous nature. Extensive research has been carried out on how to assess respeaking quality, both intralingually (Romero-Fresco 2011; Romero-Fresco and Martínez 2015) and interlingually (Romero-Fresco and Pöchhacker 2017).

Respeaking is a rather novel activity, and, as accounted by Romero-Fresco (2012, 2018), the profession was introduced in Europe in 2001, whereas the provision of training in this field did not start until 2007. One of the earliest works on respeaking training was by Arumí-Ribas and Romero-Fresco (2008) who established the main differences between respeaking and closely related practices like simultaneous interpreting and subtitling, drafted up a taxonomy of respeaking-specific skills and provided a set of exercises aimed at fostering said skills in the classroom.

2.4.2.5. Integrated (Sub)titles

Integrated (sub)titles are also known as creative subtitles, impact captions, dynamic subtitles, or authorial titles. They override traditional subtitling conventions, especially when it comes to positioning and layout, in an attempt to offer more aesthetically pleasant titles. In so doing, they highlight the visual side of text by utilising moving text (also known as kinetic typography) as one more communicative element and enhance the subtitles creative potential, which prevails over their invisibility (Romero-Fresco 2019). These subtitles are usually placed on different areas of the screen and try to follow the plot as closely as possible (Fox 2018). As posited by McClarty (2012:144), and contrary to traditional subtitling, which is usually defined in terms of constraints and restrictions, creative subtitling "responds to the specific qualities of the individual film text, giving the creative subtitler more freedom to create an aesthetic that matches that of the source text, instead of being bound by standard font types, sizes and positions." Integrated titles, in short, supposedly reduce reading time, by complementing the visuals and minimising the effort required by the viewer (Kruger 2018). Additionally, as claimed by Romero-Fresco and Fryer (2018:13):

> research shows that creative subtitles allow subtitling viewers to spend more time on the images, helping to bridge the gap between the experience of the original viewers and that of the viewers of translated/accessible versions, while at the same time providing an exciting opportunity for collaboration and innovation between filmmakers and translators.

The BBC's TV series *Sherlock* (Mark Gatiss and Steven Moffat, 2010–) has particularly attracted much scholarly attention as the appearance of on-screen text was profuse (Figure 2.3) and, in Dwyer's (2015: online) words, "challenges the presumption that screen media is made to be viewed, not read":

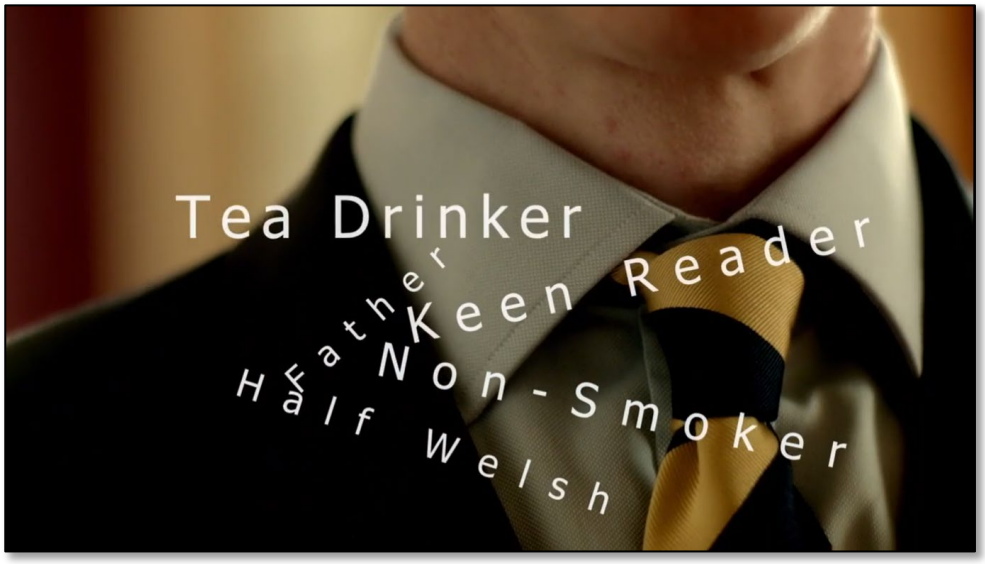

Figure 2.3. Screenshot from BBC's *Sherlock* (2010–2017)

Under the auspices of the BBC, eye-tracking experiments with excerpts from *Sherlock* were carried out to ascertain whether integrated titles were favoured over traditional subtitles by monolingual English speakers (Brown et al. 2015). They concluded that the viewers "were more immersed in the action, and missed less of the video content" (ibid.: online) with integrated titles, which ended up being a less disjointed experience, hence suggesting that their viewing patterns were similar to people who viewed the clip without subtitles. Other eye-tracking studies on the integrated titles used in *Sherlock* have been conducted by Fox (2016, 2017).

Integrated titles can be said to draw from the concepts of abusive (Nornes 1999) and hybrid (Díaz-Cintas and Muñoz-Sánchez 2006) subtitles, which are common

in amateur practices (Section 2.4.2.6). As Fox (2018:69) claims, the benefits of integrated titles over traditional subtitling are many, especially since subtitles with a conventional layout “can cover interesting or plot-relevant image regions and objects” and can hypothetically disrupt the image composition, leading to a potential loss of aesthetic value.

Similarly to the production of 3D subtitles, the placement on screen of integrated titles has to be properly pondered so that they can become an integral part of the aesthetics of the whole production. This, of course, makes this practice rather onerous as the spotter, or subtitling mapper, needs more time to complete the task and each subtitle in each language has to be considered individually, in relation to the plot and the visuals.

Integrated titles can be further automatised utilising a wide range of technologies, which often include face detection and recognition, lip motion analysis, and visual saliency analysis. Hong et al. (2011) have developed a system that can recognise the speaker and uses visual analysis of the scene to identify the potential placement for a subtitle. This is done with the help of a software program that recognises talking faces for each piece of script as well as nonintrusive regions where the subtitles can be placed.

As argued by scholars who have carried out user experience research with the help of eye trackers, including Brown, Jones and Crabb (2015), Fox (2016) and Kruger et al. (2018), this practice has the potential to improve the viewing experience, though, to do so successfully, more resources need to be invested and closer collaboration with film directors and producers is called for (Romero-Fresco 2019). Research on the integration of this new practice in pedagogical environments is still little to none.

2.4.2.6. Amateur Subtitling

Fansubbing, short for fan-subtitling and also called amateur (Bogucki 2009) or non-professional (Orrego-Carmona 2015; Orrego-Carmona and Lee 2017*a*) subtitling, is a translational phenomenon that remained practically untouched by scholars until very recently.

As Orrego-Carmona and Lee (2017:5) put it, fansubbing is a disruptive practice, which:

> was born as a strategy to circulate copyrighted content within an alternative (not completely legal) framework and, as pointed out by the early studies on fansubbing, people creating subtitles for the shows did not take into account the professional standards widely accepted in professional subtitling.

A prime example of "user-generated translation" (Remael 2010:12), it started as an amateur translation movement of people interested in Japanese anime in the United States in the 1980s (Martínez-García 2010). As discussed by Díaz-Cintas and Muñoz-Sánchez (2006), these amateur translations aimed to bridge the gap between the scarce official commercial distribution of anime and the large number of fans eager to consume them in other languages than Japanese.

The phenomenon soon evolved to encompass the translation of any kind of audiovisual programme, especially of TV series from the USA (Massidda 2015). In recent years, fansubbing has grown exponentially and branched out into new activities on the internet, which has led to a whole new conceptualisation of this ecosystem around the umbrella term of "cybersubtitles" (Díaz-Cintas 2018:132). In addition to fansubbing, this concept also encompasses two other main types of subtitles, namely, guerrilla subtitles, which are understood as "a practice that rebels against or resists legal media and translation frameworks" (Dwyer 2017:123), and, altruist subtitles, usually undertaken by individuals with a close affinity to the project on hand, such as Khan Academy and TED Talks (Díaz-Cintas 2018).

Some fansubbing communities provide their volunteers with a set of established guidelines, which, according to Ferrer-Simó (2005), do not conform to the usual standards regulating the practice of commercial subtitling. Given the interconnectedness between these different practices, however, some scholars like Massidda (2012:17) portend "a hybridisation of approaches, merging professional and fansubbing conventions […] to happen in the future." Moreover, the widespread and almost immediate availability of these free amateur subtitles on the internet has skewed consumers' habits so deeply, and visibly, that some media companies, TV channels and VoD platforms have moved to simulcasting, that is, the releasing of programmes simultaneously in various countries so as to counteract fansubbing activities.

Fansubbing has been theorised as a social movement propelled by the fact that "digital technology has empowered mass media by making it a more interactive experience, thus giving individuals the opportunity of being not only information receivers, but also information sources" (Díaz-Cintas 2018:131). Activists and fandom culture collectives utilise subtitles not only to release the most recent episodes of their favourite TV series and shows, but also to share and spread their socio-political agendas. In countries where censorship bodies monitor and filter audiovisual productions prior to their distribution nationally, fansubbing constitutes a subversive practice by means of which viewers can access less biased translations (Wang and Zhang 2017).

The study of fansubbing has focused primarily on the aspects around the para-profession (Orrego-Carmona and Lee 2017*b*), community dynamics (O'Hagan 2009; Pérez-González 2013; Li 2015), nature of the subtitling (Díaz-Cintas and Muñoz-Sánchez 2006), activism (Pérez-González 2016), and geopolitics (Dwyer 2012). Other research avenues that have been opened up are those that examine fakesubs, crowdsubtitles, and volunteer subtitles (Díaz-Cintas 2018). More recently, fansubs have also been studied in terms of their suitability for the learning/teaching of foreign languages (Bolaños-García-Escribano 2015, 2017), which is an area calling for further exploration.

The next section sets out to explore the main characteristics of interlingual subtitling in the industry so that any teaching in the field adheres to professional standards and conventions.

2.5. Standards in Audiovisual Translation

AVT practices have traditionally been governed by standards and protocols, which are conceived as documents to guide practitioners and often contain examples of best practices as well as detailed guidelines on technical and linguistic aspects. Some examples of guidelines for revoicing (including AD) and subtitling (including SDH) can be found in Section 2.4.1 and Section 2.4.2, respectively.

This section will solely focus on the conventions, guidelines and standards that apply to subtitling and will debate the slippery field of quality assessment and evaluation practices vis-à-vis its teaching. It also endeavours to account for the linguistic and technical specificities of the main AVT practice covered in this research project, i.e. interlingual subtitling, which is also the practice with a longer teaching tradition (Bolaños-García-Escribano and Díaz-Cintas 2019).

Since the last term of the 20th century, the Descriptive Translation Studies (DTS) paradigm has been capitalised on by scholars in an attempt to examine translation phenomena, particularly in literary translation (Pym 2001), although inroads were later made in AVT in the early noughties (Díaz-Cintas 2004). Drawing from the polysystem theory (Even-Zohar 1990) and Toury's (1980, 1995/2012) approach to the study of translation norms, DTS is a theoretical framework in which the study of translation (conceived as a function, product, and process) shifts the focus towards the analysis of target texts. One of the main premises is that the socio-cultural context, and not only linguistics, determines how translations are conceived and produced inasmuch as they are the fruit of a norm-governed activity that varies across time, communities, cultures, and languages. In this sense, DTS is articulated around a series of societal concepts,

such as conventions, norms, ideology, and patronage (Díaz-Cintas 2004), that emphasise the sociological dimension of translation.

For many years, studies on AVT focused on the identification of certain patterns of behaviour in the revoicing and subtitling of films as well as on the reasons behind the activation of such norms (Chaume 2018*b*). The concept of norm is particularly useful in AVT studies, since, according to Assis Rosa (2016:199), it "enables the unveiling of the intervention of several agents specific to AVT (laboratories, production and distribution companies, dubbing actors and directors, technicians, adaptors, etc.)" Norms, which do vary across time and space, allow us to better understand the 'rules of the game' that govern AVT at different levels. Indeed, as argued by Díaz-Cintas (2004:26):

> at a macro-structural level, […] norms allow us to determine which are the distinctive characteristics that regulate the delivery of the dubbed or subtitled discourse, bearing in mind the many different constraints imposed by the medium. At a micro-structural level, they help us to observe the translator's behaviour in the linguistic mediation.

In DTS, much attention has traditionally been paid to the so-called "translation crisis points" (Pedersen 2007, 2008), which are those that trigger the conscientious use of translation techniques to overcome specific translation challenges. As a reaction to the traditional prescriptive approach to the study of translation, the descriptive analysis of the linguistic and cultural aspects that characterise translated programmes constitutes a fruitful approach for the study of translation as a product and of translators' agency.

For Díaz-Cintas (2019), some of the main issues that directly impinge on the interlingual transfer that takes place in AVT are: orality and naturalness, wordplay and humour, swearing, censorship and manipulation, cultural references, gender, multilingualism, and linguistic variation. For the purposes of this thesis, the focus falls on the industry-informed linguistic and technical norms that govern subtitling.

A substantial degree of technical and linguistic prescriptivism still prevails in the guidelines, i.e. "the document that sets out the norms that govern the behaviour

of practitioners in a community" (Pedersen 2020:419), proposed by the various industry stakeholders, which can be said to extend to the way in which translations are assessed and evaluated. Subtitling has traditionally been rather dogmatic because, as posited by Díaz-Cintas (2004:29), "the time and spatial constraints in the presentation of subtitles imposed by the medium bring along an inescapable degree of prescriptivism."

The below sub-sections explore the conventions that are traditionally followed in the profession and that tend to also inform the teaching of subtitling. In the same vein as textbooks on this field by authors like Ivarsson and Carroll (1998) and Díaz-Cintas and Remael (2007, 2020), this thesis will make a clear distinction between two main dimensions: linguistic and technical. In fact, it is understood that consistency, both in linguistic and technical terms, adds value to translated audiovisual programmes and is directly linked to its quality, which is the reason why prescriptive guidelines often focus on both dimensions.

2.5.1. In Search of Norms in Interlingual Subtitling

LSPs are usually reluctant to release subtitling guidelines to the public and prefer to share them exclusively with their pools of translators, who are subject to strict confidentiality agreements, ultimately imposed by the end clients. This has been the traditional attitude, which can be seen as detrimental to the study (and teaching) of professional conventions in HE, though more recently some companies have decide to make their subtitling guidelines freely available to the public, e.g. Netflix (2020).

In the professional subtitling industry, "in-house guidelines are the most common product-oriented quality tools that many companies have" (Pedersen 2017:213–214). In most cases, the recommendations differ from one to the other, irrespective of whether they have been created in academic or commercial circles. The rules of the game do not always follow logic or general consensus and, in the words of Díaz-Cintas and Remael (2007:104):

many are probably applied arbitrarily and may be difficult to justify over others. In addition, the conventions applied in the profession are not homogeneous, and many major subtitling companies maintain their own, unique in-house guides of punctuation rules which they apply as part of their stylebooks and which are sometimes diametrically opposed to the conventions applied by competing companies. Any attempt to draw up a list of conventions that can be applied universally could even be considered conceited and presumptuous.

Table 2.1 below contains a list of some of the main subtitling guidelines that are publicly available today:[4]

SUBTITLING GUIDELINES	
ACADEMIC	Torralba-Miralles et al. (2019) Díaz-Cintas and Remael (2007, 2020) Diaz-Cintas (2001, 2003*b*) Karamitroglou (1998, 2000) Ivarsson and Carroll (1998) Ivarsson (1992) Luyken et al. (1991) Laks (1957)
PROFESSIONAL	Netflix (2020)

Table 2.1. Academic and professional guidelines for subtitling

The application of national and company-bound conventions is directly related to subtitling quality, which is clearly important in the training of future practitioners. Being aware of industry practices in the AVT classroom helps the trainer to keep a professionally oriented approach and abide by authentic guidelines that students will follow upon completion of their studies.

The following sub-sections offer a brief summary of the principal linguistic and technical parameters that ought to be borne in mind when teaching interlingual subtitling. These are the standards that have been carefully followed when designing and conducting the experiments discussed in Chapter 5.

[4] AVTEUROPE (avteurope.eu/what-is-av-translation/standards) is currently in the process of constructing a directory of national conventions in Europe.

2.5.1.1. Technical Dimension

Technical considerations in the context of subtitling refer to those aspects that define this professional practice and which usually derive from the multisemiotic nature of audiovisual texts (e.g. synchronising text with soundtrack and visuals) and the technological component (e.g. subtitling software). The two main technical dimensions of subtitling relate to spatial and temporal features.

With regards to spatial considerations, subtitles should be displayed in the least distracting manner so that they do not detract from the visuals in general and the plot in particular. The spatial dimension is usually studied in terms of visibility (i.e. subtitles appear in a given on-screen location), legibility (i.e. subtitles can be read against the background), and readability (i.e. subtitles are well segmented and inviting to read). As Fox (2018:30) argues, "problems with contrast, collisions, and interference seem to be widely accepted as unpleasant, but unavoidable features of subtitles." New research methods and tools, like eye trackers, permit to test how the audience perceive and receive subtitled programmes in order to shed light on the audience's overall experience (Romero-Fresco 2013, 2015).

Subtitles traditionally comprise of one or two lines, although it is common to come across three-liners, and even four-liners, on programmes captioned for people who are d/Deaf and hard-or-hearing, as illustrated in Figure 2.4:

Figure 2.4. Snapshot from J. Lynn's *Clue* (1985)

The traditional way of displaying interlingual subtitles – centred, both horizontally and vertically, and placed at the bottom of the screen – can be seen in Figure 2.5, which shows a two-line subtitle of the English subtitled version of Giuseppe Tornatore's *Cinema Paradiso* (1988):

Figure 2.5. Snapshot from G. Tornatore's *Cinema Paradiso* (1988)

Subtitles ought to be placed at the top of the screen when they risk being illegible because the background is too light at the bottom or whenever important action or essential data appears in the said position, as displayed in Figure 2.6:

Figure 2.6. Snapshot from W. Wenders's *Buena Vista Social Club* (1999)

Other practices like integrated titles (Section 2.4.2.5) and fansubbing (Section 2.4.2.6) allow for more wriggle room in the positioning of subtitles insofar as the subtitler can place subtitles more creatively to draw the viewer's attention to particular parts of the screen where the action is happening, as shown in Figure 2.7:

Figure 2.7. Snapshot from P. Middleton and J. Spinney's *Notes on Blindness* (2016)

Laser subtitles are always white, as they have been burnt onto the celluloid, whereas electronic subtitles can be of different colours, for they are projected onto the images. Depending on the commission, colours can vary, though yellow and particularly white are preferred in interlingual subtitling.

The font should be non-serif (often Arial or Helvetica) and although the size varies across different pieces of software, the range is between 25 and 40 points, the most common being 30. Subtitle characters are almost always shadowed or black contoured so that they stand up against the images. Should there be legibility problems with very light backgrounds, they may be encased in a grey or black box, as seen in Figure 2.8:

Figure 2.8. Snapshot from J. Lubman's *Rebuilding Notre-Dame* (2020)

It is common practice to leave a 10% safe area at the top, bottom, right-hand side and left-hand side of the screen. Figure 2.9 below illustrates the configuration of the safe area on OOONA Tools:

Figure 2.9. Safe area menu on OOONA Tools

The pixels occupied by subtitles have a direct implication on the number of characters, including spaces, that any of the two lines can accommodate. In light of the aforementioned safe area, and as explained by Díaz-Cintas and Remael (2007:84):

> for the Roman alphabet the maximum number of characters allowed on a one line TV subtitle is usually 37, including blank spaces and typographical signs, which all take up one space. Occasionally, clients will ask for a maximum of 33 or 35 characters per line, or allow up to 39 to 41 characters depending on their guidelines and software used. Exceptionally, some film festivals will go as high as 43 characters per line. For cinema and DVD a maximum of 40 characters seems to be the norm, whereas for VHS this used to be between 33 and 35.

More recently, Díaz-Cintas and Remael (2020) argue that, with the arrival of digital media, subtitling editors have been enhanced and have started working with proportional lettering or variable-width fonts, thus allowing for greater rationalisation of the space available. Therefore, subtitlers can today write as much text as possible as long as the output is contained within the limits of the safe area. Today's guidelines, however, still impose maximum character-per-line (CPL) values to subtitlers; for instance, Netflix (2020) advocates for 42-character lines (i.e. two-line subtitles comprising of up to 84 spaces) across their whole range of languages, except for some like Chinese (16), Korean (16), Japanese (16 horizontal and 11 vertical), and Russian (39).

With regards to temporal parameters, one key element is, first and foremost, understanding how the timing of a clip is calculated. Each single frame of a given clip can be identified with a unique reference number, called timecode, which is a sequence of numeric codes generated at regular intervals by a timing synchronisation system and recorded by the Time Code Reader or Recording (TCR) display.

The TCR assigns an 8-digit figure (hours, minutes, seconds, and frames)[5] to every single frame of any given clip and is available in most video players and subtitling programs. Each subtitle therefore has two timecodes that indicate when they start (00:00:01:14) and when they end (00:00:03:11), as illustrated in Figure 2.10:

[5] Milliseconds are rarely used in the industry but are common when working with free open-source cross-platform subtitle editing tools like Aegisub, Subtitle Workshop, Subtitle Edit, Sub Station Alpha, Sabbu, and JacoSub, all of them very popular among fansubbers.

Figure 2.10. View of subtitle timecodes in OOONA Tools

Frames therefore represent the smallest unit of measurement of a video and calculations vary from one country to another depending on their distribution and encoding system. In cinema, for instance, the standard is 24 frames per second (fps), whereas in television the three main analogue encoding systems, used until the late 2010s, were PAL (25 fps), SECAM (25 fps), and NTSC (29.97 fps). Digital terrestrial television, introduced since 2001, has progressively replaced analogue television and introduced four main broadcasting systems: ATSC, DVB, ISDB, and DTMB. The three standard frames-per-second rates have been maintained, depending on the region (McGregor 2020).

Spotting, also known as authoring, mastering, text timing, or cueing, consists of setting the in and out times of the subtitles so that they appear and disappear in synchrony with the spoken dialogue and what is being shown on screen as well as in a visually appealing fashion that does not detract from the visuals. As explained by Díaz-Cintas and Remael (2007:90):

> temporal synchronization between subtitle and soundtrack is arguably the main factor affecting the viewer's appreciation of the quality of a translated programme. Poor timing, with subtitles that come in too early or too late, or leave the screen without following the original soundtrack are confusing, detract from enjoying a programme, and have the potential of ruining what may otherwise be an excellent linguistic transfer. Accurate timing is crucial for optimal subtitling since it reinforces the internal cohesion of the translated programme and plays the essential role of helping the viewer identify who is saying what in the programme.

The spotting ought to mirror the rhythm of the film and the performance of the actors, and be mindful of pauses, interruptions, and other prosodic features of the original speech, all with the aim of allowing for the smooth reading of the subtitles. Close attention must also be paid to particular factors, such as leading-in and lagging-out times. Some scholars, like Karamitroglou (1998), recommend that subtitles be cued a few frames after an utterance starts to avoid confusion, and

that subtitles must not linger on screen more than two seconds after the end of an utterance. By today's standards, such recommendation would constitute an infelicitously long delay and ought to be avoided since synchronicity issues are discomforting for the viewer and can have a negative impact on readability.

Subtitles ought to have a minimum duration of one second (i.e. 24, 25, or 30 frames) and a maximum duration of five to seven seconds. The so-called six second rule, however, posits that subtitles ought to stay on screen for a maximum of six seconds and is considered to be "the rule of thumb in most TV stations" (d'Ydewalle et al. 1987, in Brondeel 1994:28) and is still widely used in subtitling textbooks today (Gerber-Morón and Szarkowska 2018).

The reading speed, also known as subtitle speed or display or presentation rate (Pedersen 2011; Sandford 2015), is understood as the relationship that exists between the quantity of text contained in a subtitle and the time that it remains on screen (Díaz-Cintas and Remael 2020) and is calculated by dividing the total number of characters by the time they remain on screen. Generally speaking, the fewer characters a subtitle contains, the lower the reading speed, whereas the more characters it contains, the higher the display rate will be.

The reading speed is calculated in words per minute (wpm) or characters per second (cps); the latter quickly becoming more common in the industry for all languages, as seen in professional guidelines such as the ones distributed by Netflix. Subtitling systems use algorithms to calculate reading speed values, which are usually displayed on each subtitle along with its duration as well as the start and end timecodes (Figure 2.10). Nonetheless, as not all subtitling systems use the exact same algorithms, reading speed values can differ when exporting subtitle files from one tool and importing them into a different one (González-Iglesias 2011). Furthermore, the calculation of the display rate value depends on whether or not the blank spaces that separate words are counted.

Being aware of the maximum amount of text that can be included in a given subtitle is crucial in order to guarantee that it adheres to an acceptable reading speed value and can thus be read comfortably by viewers. In the industry, subtitle

display rates differ depending on the type of audience targeted and the conventions used, and their values range from 150 to 200 wpm (ca. 12 to 17 cps), though there is a tendency to produce subtitles that make use of the higher display rates (Netflix 2020).

Consecutive subtitles that are not separated by a few clean frames can potentially hinder readability, particularly when they share a similar layout (Díaz-Cintas and Remael 2020). For the viewer to be able to perceive that a subtitle is different from the next, and hence register that a change of written material has occurred, the two subtitles should be separated by a minimum gap consisting of at least 2 to 4 frames. When subtitles are separated by a small number of frames, usually 12 or less, a spotting strategy is to chain them, i.e. to spot them close to each other and maintaining only the minimum gap of 2 frames rather than, say, 5 or 9 frames.

Subtitles can end up being less legible in the presence of camera movements caused by the editing of the programme, such as scene and shot changes, since it has traditionally been considered that when a subtitle crosses over a shot change, the eye goes to the start of the subtitle and reads it again. Research conducted on this front has determined that it is only a significantly low number of viewers who are disturbed by subtitles that cross over shot changes; furthermore, the latter do not necessarily read the subtitle again but immediately jump back to wherever they were reading prior to the shot change (Krejtz et al. 2013). Yet, standard practice in the industry is for subtitles to be cued in and out in a manner that they do not cross over shot and scene changes, or that they do so in a less perceptible fashion.[6]

2.5.1.2. Linguistic Dimension

According to Díaz-Cintas and Remael (2007), the main linguistic parameters that affect interlingual subtitling are text reduction, cohesion and coherence, and

[6] Netflix (2020) establishes clear guidelines on how and when can subtitlers cross over shot changes whenever this is unavoidable.

segmentation and line breaks. In a less structured fashion, Ivarsson and Carroll (1998) also make reference to linguistically related good subtitling practices, which regard grammar, word order, condensation, coherence and consistency.

Subtitles "are expected to provide a semantically adequate account of the original dialogue" (Díaz-Cintas 2013*b*:277), which is usually obstructed by a number of spatial and temporal constraints as discussed in Section 2.5.2.2. Subtitles must afford viewers not only enough time to read and understand what is written at the bottom of the screen but also to watch and listen to what is happening. As a rule of thumb, subtitles ought to be syntactically and grammatically self-contained and flawless, as they serve as a model for literacy, by reflecting idiomaticity, culture and register.

The inscription of the original dialogue in the form of written subtitles in the target language is usually accompanied by the deployment of reduction techniques, which may be total (i.e. omission) or partial (i.e. condensation). As Georgakopoulou (2003:75) explains, "it would never be possible to fit the same amount of text in the two lines available at the bottom of the screen as actors may utter in the voicetrack in the same amount of time." For this reason, subtitles can never be a quantitatively complete and detailed translation of the original dialogue, as accounted by Díaz-Cintas and Remael (2007:145):

> the written version of speech in subtitles is nearly always a reduced form of the oral ST. Indeed, subtitling can never be a complete and detailed rendering. And neither should it, for that matter. Since the verbal subtitle sign interacts with the visual and oral signs and codes of the film, a complete translation is, in fact, not required.

There are many ways to reduce information, although "no rules can be given as to when to condense and reformulate, or when to omit" (Díaz-Cintas and Remael 2007:149) on account of the many technical constraints and conventions. In an attempt to teach subtitlers-to-be how to reformulate information adequately and purposefully, trainers may resort to the works of TS scholars on translation strategies and techniques (Catford 1965; Vázquez-Ayora 1977; Newmark 1988; Delisle 1993; Hurtado-Albir 2001), which often include numerous examples.

Similar resources focusing on interlingual subtitling are those produced by Luyken et al. (1991), Ivarsson (1992), Gottlieb (1992), Lambert and Delabastita (1996), Díaz-Cintas (2003), and Díaz-Cintas and Remael (2007, 2020).

At word level, some of the condensation procedures include the following: simplifying verbal periphrases, generalising enumerations, using a shorter near-synonym or equivalent expression, using simple rather than compound tenses, changing word classes, and exploiting short forms and contractions.

At clause or sentence level, some of the most frequent procedures encountered in subtitling encompass: changing negations or questions into affirmative sentences or assertions, transforming indirect questions into direct ones, simplifying modal verbs, turning direct speech into indirect speech, changing the subject of a sentence or phrase, manipulating the theme and rheme, turning long or compound sentences into simple sentences, switching from active to passive voice or vice versa, using pronouns and other deictics to replace substantives or noun phrases, and merging two or more phrases or sentences into one.

When dividing dialogue, narrations and other content that needs to be translated into subtitles, the ensuing target text can be ideally written over the two available lines of a subtitle as one of the golden rules in the profession is that each subtitle should contain a complete idea. If too long, the target text can spread over several subtitles. The line breaking within subtitles and the segmentation across subtitles ought to be done according to syntactic and grammatical considerations rather than aesthetic rules, since the ultimate objective is to facilitate the reading and understanding of the message in the little time available. Appendix 2 contains a list of line-breaking recommendations for the teaching of subtitling that draw on Díaz-Cintas and Remael (2007) and which were used to inform students before taking part in the experiments.

Although product analyses are beyond the reach of this thesis, it seems pedagogically sound to offer an example of a commercialised localised programmes, which contains food for thought for the teaching of reduction techniques in subtitling, and which was used with students taking part in the

subtitling experiments. Netflix (2020) establishes that interlingual subtitles, from languages like French into English, ought to strictly abide by the following conventions: (1) a maximum duration of seven seconds; (2) a minimum duration of 5/6 of a second, i.e. 20 frames (or 25 frames in NTSC); (3) a maximum number of two lines; (4) a maximum length of 42 cpl including spaces and punctuation; and (5) a maximum reading speed of 17 cps.

As previously mentioned, each commission has the potential of changing the translator's agency and margin of action, depending on the nature of the programme, the expected target audience and the instructions received from the client. The subtitlers' ability to produce their translations will be impacted by technical parameters like the assumed reading speed of the viewers, the presence of shot changes, the use of punctuation conventions, and the maximum number of characters allowed per line, among others. The deployment of condensation and omission techniques is therefore subject to technical constraints, which are further discussed in Section 2.5.1, as well as to linguistic and cultural considerations, as explained in this section.

In subtitling, as in other types of written text, punctuation signs are utilised to convey paralinguistic information and to contribute to the readability of the message as they inform about the prosody of the speech, e.g. rhythm, tone, pauses, hesitations, orality markers, and intonation. Yet, the traditional approach rests on the assumption that the fewer punctuation signs are used the better since they take up space on screen, which could be used for the actual message. All signs ought to be used following the rules of the target language grammar although exceptions may be made in cases where signs acquire a particular expressive role in subtitling, like the use of hyphens discussed below.

The main punctuation conventions that ought to be taught in the subtitling classroom have been extracted from Díaz-Cintas and Remael (2007, 2020) and Netflix (2020) for the English language and are fleshed out in the following paragraphs.

Commas (,) are used to structure sentences and to provide rhetorical nuance. Some authors consider that commas are not necessary at the end of a subtitle if the sentence continues in the next subtitle event because they may be confused with a full stop and lead the viewers to believe that the sentence has finished (Díaz-Cintas and Remael 2007).

As in standard practice, full stops (.) should be used to finish a self-contained sentence. They always need to be followed by a word in upper-case letters at the beginning of the following sentence.

The colon (:) is used to introduce an announcement, a quotation or direct speech. It is usually followed by upper case in American English and lower case in British English, except for elements that need to be capitalised, such as titles, proper names, or literal citations.

Quotation marks or double inverted commas (“ ”) are used to render literal quotations, to signal ungrammatical terms, and to draw attention to nicknames and wordplay that could otherwise be hard for the viewer to understand.

Exclamation (!) and question (?) marks can express a plethora of feelings and moods, such as irony, anger, scorn, surprise, and disgust. It is discouraged, however, to overuse either two when the visuals and soundtrack convey such paralinguistic information.

Hyphens (-), also called dashes by some authors, are used to link compound words but should not be used to hyphenate words at the end of a line. When the utterances belonging to two different speakers are presented in the same subtitle, the convention is to employ a hyphen at the beginning of each of the two lines making up the subtitle. Each line thus represents one speaker’s turn and the hyphen may, or may not, be followed by a blank space.

Ellipses or triple dots (…) can be used to express suspense, pauses, stutters, interruptions, incomplete lists, or hesitations. In contemporary subtitling practice,

they should not be used to connect unfinished sentences that span across consecutive subtitles. En-dashes, which are often understood as hyphens (Díaz-Cintas and Remael 2007), can sometimes be used in pairs, instead of an em-dash, to replace ellipses.

In addition to the above, other stylistic and font conventions are also activated to convey information on how the message is being delivered on screen. Capital letters are normally used to translate text that appears on screen, inserts, or the title of the audiovisual production. Italics fulfil various objectives and are normally used to reflect off-screen narrations and dialogue, to indicate the foreign nature of words, to translate song lyrics and to highlight intertextual references to book and film titles, as well as to signal voices that are heard through devices like telephones, TV sets and the like. Currency symbols (£, $, €…), percentages (%), and cardinal numbers are widely used in interlingual subtitling (Netflix 2020), and so are asterisks (*), for bleeped swearwords, and ampersands (&), for titles. Nonetheless, these are sometimes not recommended as viewers may not be familiar enough with them. In recent times, and due to the spread of social media, the at sign (@) and hashtags (#) are also finding their way into conventional interlingual subtitling.

Some exceptions notwithstanding, certain punctuation signs are very rarely used in interlingual subtitling: parentheses or round brackets ( ), solidi or slashes (/), em-dashes (—), mathematical symbols (+), semicolons (;), square brackets ([ ]), and verticals (|) are virtually inexistent in commercial subtitling and ought to be avoided. Colours and music symbols are not used in interlingual subtitling as they constitute features typical of SDH.

The below paragraphs offer an illustrative example of the linguistic and technical challenges posed by a random clip in interlingual subtitling. This type of analysis, which can be used in class to help students realise the inner difficulties of subtitling a certain programme as well as the role played by segmentation and punctuation in the delivery of the original message, pursues the reinforcement of the previous theoretical discussion.

The below example has been extracted from the first episode of the first season of French Netflix original series *Marseille* (Dan Franck, 2016–2018), an acclaimed drama series revolving around corruption and politics in the French city of Marseille (Figure 2.11). The original dialogue is in French and the episode has been dubbed, subtitled, and closed captioned in English. There is no text on screen or any other visual information that ought to have been subtitled in this particular scene.

Figure 2.11. Snapshot from D. Franck's *Marseille* (2016–2018)

Table 2.2 below contains an excerpt where three main characters – Robert Taro (the mayor of Marseille), Rachel Taro (the mayor's wife), and Lucas Barrès (the mayor's protégé) – along with a local journalist are attending a football match at the Vélodrome stadium in Marseille. The press asks questions to the mayor, and he then sits down to chat with his wife, Rachel. Lucas is sitting one row in front of them and joins the conversation.

***Marseille*, Season 1, Episode 1 (00:03:00:840 – 00:03:26:520)**	
Original dialogue in French	**Literal Back Translation in English**
Robert: Oh, il est beau celui-là, il est magnifique !	Robert: He's great that one! He's fantastic!
Lucas: Il est beau, eh ?	Lucas: That was great, right?
Robert: Ah, oui, magnifique.	Robert: Oh, yes, fantastic.

Journalist: L'O.M. gagne, Monsieur le Maire, c'est bon pour la Mairie ?	Journalist: OM is winning, Mr Mayor. Is that good for the City Council?
Robert: Vous avez toujours été le roi des passes, ah ? Merci quand même.	Robert: You've always been the king of passes, haven't you? Thanks anyway.
Rachel: Tu rentres avec moi ou est-ce qu'on se retrouve à la maison ?	Rachel: Are you coming back with me or will we see each other at home?
Robert: Non, Fred te déposera. C'est le grand jour pour le casino.	Robert: No, Fred will drop you off. It's the big day for the casino.
Rachel: Et toi aussi, tu es de corvée pour le casino ?	Rachel: What about you? Are you on casino duty as well?
Lucas: Robert et moi, seuls contre tous.	Lucas: Robert and I, alone against all.
(91 words; 456 characters including spaces)	

SUBTITLES IN ENGLISH

1 00:03:00,840 --> 00:03:03,640
-Wasn't that beautiful?
-Fantastic.

2 00:03:04,240 --> 00:03:06,200
Marseille is winning.
Any comment?

3 00:03:07,320 --> 00:03:10,080
You never miss a pass, do you?
No comment.

4 00:03:16,120 --> 00:03:18,200
Are you coming home with me or not?

5 00:03:18,960 --> 00:03:22,560
No, Fred will drop you off.
Today's the big day for the casino.

6 00:03:23,320 --> 00:03:26,520

-Are you on casino duty, too? -Where Robert goes, I go! (58 words; 302 characters, including spaces)
Table 2.2. Passage from D. Franck's *Marseille* (2016–2018)

As is usually the case with interlingual subtitling, the number of words, and characters, in the original dialogue has decreased considerably in the target subtitles. The original dialogue had 91 words (456 characters, including spaces), whereas the target subtitles had 58 words (302 characters, including spaces). This reflects the condensation that has been done on account of the linguistic and technical constraints posed by the video; more specifically, the resulting translation has been reduced to around two thirds of the original word and character counts, which is typical of this type of subtitling (Gottlieb 2001).

Subtitle no. 1 is a two-liner containing the dialogue exchange between Robert and Lucas, in which the first two sentences uttered by Robert, *Oh, il est beau celui-là, il est magnifique !* [He's great that one! He's fantastic!], have been completely removed. This is because the said subtitle stays on screen for 2 seconds and 800 milliseconds (20 frames), so the text has been condensed into 34 characters so as not to exceed the maximum subtitle display rate. This subtitle could have accommodated up to 49 subtitles with a 180 wpm display rate; however, this verbal exchange would have required an additional subtitle since there were two sentences uttered by Robert and one by Lucas. As previously discussed, meaningless repetitions have to be avoided and subtitles can only accommodate up to two hyphenated utterances (one per file); furthermore, there would be no room for yet another subtitle. As a consequence, these three interventions, which take place in less than three seconds, have been merged into two, and Lucas's reaction to Robert's exclamation, *Ah, oui, magnifique* [Oh yes, fantastic] has been reduced to 'Fantastic', which reproduces the orality of the original by removing the subject and the conjugated verb.

Subtitle no. 2 summarises a considerable amount of the original information, as the text can only remain on screen for a rather short space of time – 1 second

and 960 milliseconds (24 frames) – and can only accommodate a maximum of 30 characters to have a display rate of 180 wpm. As it stands, the current subtitle contains 33 characters. To comply with the technical limitations, a single metonymic word, i.e. 'Marseille', has been provided to translate the original cultural reference *O.M.*, which stands for the *Olympique de Marseille* football club. A literal translation as 'O.M.' risks being too cryptic for the target audience and the full name, 'Olympique de Marseille', would not have been viable because it is too long. To facilitate the reception of the cultural reference and avoid any confusion with the name of the city, the subtitler has decided to add the gerund verb 'winning', firmly setting the context in a sport competition. Also constraint by the technical dimension, the vocative, *Monsieur le Maire* [Mr Mayor], has been omitted because the viewer can easily infer that the journalist is addressing the mayor, who has already been introduced in a previous scene in the series. Finally, the journalist interrogates how the results of the match might benefit the city hall's popularity: *C'est bon pour la Mairie ?* [Is that good for the City Council?], which has been removed so as to render a more general meaning: 'Any comment?'. The same reduction strategy had to be applied since a longer sentence would have not fitted in such a short-lasting subtitle.

The mayor's response in subtitle no. 3, which lasts 2 seconds and 760 milliseconds (19 frames), contains a much shorter version of the dialogue. First, 'No comment' is used instead of the original's *Merci quand même* [Thank you anyway] in the second line. This unequivocal response reinforces the previous subtitle but also neutralises the political reference of the original and characterises Robert as being abruptly categorical. In this subtitle, the metaphor, *Être le roi des passes* [To be the kind of passes], that Robert uses ironically to refer to the journalist's opportunist questions and flattery has been condensed by converting the present perfect form into a negative sentence ('You never miss a pass'); furthermore, the interjection, *ah ?*, is turned into a question tag to set the ironic tone. This subtitle cannot possibly accommodate a few more characters, since the display rate is 15 cps with 50 characters as it is, but the cohesion established between these two chained subtitles would risk being compromised if a different solution had been applied, nonetheless.

Rachel subsequently asks Robert, *Tu rentres avec moi ou est-ce qu'on se retrouve à la maison ?* [Are you coming back with me or will we see each other at home?]. This has not been translated literally as it would be too long for subtitle no. 4, which stays on screen for only 2 seconds and 80 milliseconds (2 frames). According to Netflix' parameters, this subtitle could fit a maximum of around 40 characters. Therefore, the two options that Rachel offers are chunked up into one ('Are you coming home with me or not?'), which has 35 characters and constitutes a more straightforward sentence that fits in one line.

Subtitle no. 6 contains a dialogue exchange between Rachel and Lucas in a rather short space of time: 3 seconds and 200 milliseconds (5 frames). Rachel asks Lucas whether he has also been assigned a certain unpleasant task that has to do with a casino, so she uses the expression, *Être de corvée* [To be on duty], which has been modulated to the much shorter and idiomatic phrase 'To be con casino duty' in subtitle no. 6. Lucas's reply, *Seuls contre tous* [Alone against all], implies that this task is opposing Robert and him against a vast majority of people and it may remind the viewer of Gaspar Noé's 1998 film *Seul contre Tous* (distributed in English-speaking countries as *I Stand Alone*). The meaning of this idiomatic expression has been slightly modified, and thus manipulated, in the last subtitle so as to convey the idea that Lucas backs and supports Robert unconditionally ('Where Robert goes, I go!'). The exclamation mark reinforces the intended tone, and the reader can easily grasp that Lucas is very closely attached to Robert professionally speaking. The display rate of this subtitle is as high as 17 cps, which comes to explain why the conversation needs to be less verbose and better weaved to fit in two short lines.

Overall, these subtitles are exemplary of the reduction strategies that need to be applied in interlingual subtitling on account of the linguistic and technical constraints. Also, they demonstrate how some punctuation signs, such as hyphens, can have particular uses in subtitling, whereas others, such as commas and exclamation marks, can be essential to convey the tone of the speech and add an overall sense of orality to the resulting written snippets of text.

2.5.2. Audiovisual Translation Quality and Evaluation

The study of quality in the AVT industry is, and has been, of great importance in both academia and the industry, which is why it ought to be embedded also in AVT training. To become rounded professionals, trainees need to enhance their awareness about the importance of revision and of delivering translations, and subtitles, of the highest quality.

According to the British Standards Institute (BSI 1995:5) quality is "the totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs", where an entity represents textual products of any nature. Evaluating the quality of a translation, irrespective of its type, depends on internal and external factors that go undeniably far beyond mere words. Furthermore, "there is no such thing as absolute quality. Different jobs will have different quality criteria because the texts are meeting different needs" (Mossop 2001:7).

Research on translation quality, however, has almost solely focused on the linguistic aspects of rendering texts from one language to another, thus obliterating the paratextual and paralinguistic dimension of certain translation types like AVT (Kuo 2020).

From a purely linguistic point of view, translation quality is related to translation errors and the reviser's own understanding of what a translation should look like. It follows that "any statement about the quality of a translation implies a conception of the nature and goals of translation, in other words it presupposes a theory of translation" (House 2014:241). To define translation, following House (2015), one needs a concrete understanding of how a relationship is established between the source and the target texts. Also, one has to examine the rapport between the various features of the texts and how they are perceived by the author, the translator, and the recipients. Finally, one should acknowledge the distinction between a translated text and other types of multilingual text production.

Because of its multimodal nature, AVT challenges traditional approaches to the study of translation quality, which tend to focus on the linguistic dimension only. Quality evaluation models, such as House (1977, 2015), are of limited use in AVT, where the multisemiotic nature of the translated texts calls for alternative assessment methods. Neither do proofreading and revision guidelines (Mossop 2001) help much, as translations for subtitling and other AVT modes are often curtailed and consciously handled to abide by the given technical constraints, as per the guidelines and protocols explained in Section 2.5. As foregrounded by Pedersen (2017:212):

> the main problem with general translation quality assessment models when applied to subtitling is that they are difficult to adapt to the special conditions of the medium. They thus often see e.g. omissions and paraphrases as errors. This is very rarely the case in subtitling, where these are necessary and useful strategies for handling the condensation that is almost inevitable […], or which may be a necessary feature when going from speech to writing.

The synchronisation between utterances and soundtrack as well as the interconnectedness between text and image have an impact on quality that is not acknowledged in generalist quality models. The 1990s, however, witnessed the publication of the *Code of Good Subtitling Practice* (Carroll and Ivarsson 1998), also adopted by ESIST (esist.org/resources/code-of-good-subtitling-practice) and thus giving it greater projection in both academia and the profession.

The concept of translation quality is intrinsically related to the teaching of translation practice in HE. The concept of translation quality has traditionally been considered one guiding the parameters used to evaluate student' work in T&I curricula, and AVT is no exception. Although now outdated, the University of Wales published the marking criteria for their Certificate in Screen Translation, whose categories fell under linguistic skills (portrayal, language quality, grammar, spelling and punctuation) and technical skills (time-coding, synchronisation, positioning, use of colour, and respect of gaps between consecutive subtitles) (James et al. 1996). Today, most AVT courses have ad hoc marking criteria to evaluate students' AVT assessments, although they are rarely made available outside of the institution.

Until the turn of the century, the academic study of subtitle quality, for instance, was often carried out with a primary focus on the linguistic dimension, which ended up having little or no application beyond scholarly inquiry. The rather subjective nature of those studies led authors like Mayoral (2001*a*) and Chaume (2005) to raise the issue that to explore translation quality evaluation and assessment the audience ought to be at the core and to propose that more reception studies be carried out on the topic. A few years later, empirical and experimental methods have started to be more widely applied in AVT research (Orero et al. 2018) and it seems that more projects have expanded their remit beyond the linguistic aspects to consider other parameters that affect quality.

Quality has inevitably been at the centre of AVT-specific scholarly research and training since the very origins of the discipline (Section 2.2). From a rather hermeneutic stand, Lambert (1998:27) highlighted that:

> quality is urgently needed, apparently much more than ever. This does not mean that there is or could be any quality as such. […] The highest technical or technological quality in communication does not guarantee the success of any enterprise, given the fact that partners may be accustomed to very different technical standards.

Twenty years later, whereas technological advancements have been rapid and ground-breaking, the questions over quality have somehow remained static and the lack of AVT quality taxonomies is patent. Historically, audiovisual content used to be exhibited only in traditional cinema houses and later broadcast on TV, but nowadays its provision has expanded to VoD and streaming platforms (Section 2.3), having also known formats like the VHS tape, the DVD and the Blu-ray. The nature of the programmes that are localised at present has also evolved from chiefly films to a myriad of formats, such as news, documentaries, educational videos, and sports events, among others. In fact, the continuous spread of audiovisual programmes over the internet has raised awareness about the quality of their translation, especially when observing how commercial subtitling practices compare to amateur activism (Pérez-González and Susam-Saraeva 2012). As accounted by Massidda (2012, 2015), fansubbing

communities also have their own sets of guidelines, which may, or may not, adhere to industry-informed norms.

Despite being a late newcomer to the AVT mediascape, respeaking quality seems to have received more detailed academic attention than other practices like interlingual subtitling (Romero-Fresco 2020); what is more, “many countries are considering the introduction of measures to assess the quality of live subtitling” (Romero-Fresco and Eugeni 2020). Being a live subtitling practice, respeaking is well known for the presence of (almost) inevitable delay and errors that may detract from the quality of the products. Two assessment models, i.e. NER (Romero-Fresco and Martínez 2015) and NTR (Romero-Fresco and Pöchhacker 2017), have been developed in an attempt to assess the quality of intralingual and interlingual respeaking. Although they draw on word error rate models, traditionally used to evaluate accuracy in speech recognition, they also acknowledge human intervention and incorporate two types of errors that account for the technical and linguistic dimensions: recognition and edition (or translation).

When it comes to interlingual subtitling, companies have their own in-house quality processes but information about them is scarce as LSPs tend to be zealous guardians of their own workflows and QC models. Nonetheless, there are some exceptions with large media providers, such as Netflix (partnerhelp.netflixstudios.com/hc/en-us/articles/115000353211-Introduction-to-Netflix-Quality-Control-QC-), offering comprehensive documents underlining QC workflows and conventions, from which trainers and students can benefit.

From an academic perspective, however, few theoretical constructs are available, and the FAR model proposed by Pedersen (2017) is arguably the only subtitling quality model available as such. Drawing heavily on Romero-Fresco's (2009) NER model, the FAR proposal constitutes a fairly comprehensive attempt to categorise pre-prepared, interlingual subtitling errors. The author identifies three main error categories, whose initials give name to the FAR model: functional equivalence, acceptability, and readability.

Functional equivalence errors can be semantic (e.g. mistranslations, false friends, inaccuracies) or stylistic (e.g. inappropriate register). When defining this category, Pedersen (ibid.:218) argues that:

> a subtitle would convey both what is said and what is meant. If neither what is said nor what is meant is rendered, the result would be an obvious error. If only what is meant is conveyed, this is not an error; it is just standard subtitling practice, and could be preferred to verbatim renderings. If only what is said is rendered (and not what is meant), that would be counted as an error too, because that would be misleading.

Acceptability errors are those that affect grammar, spelling, and naturalness. Generally speaking, acceptability refers to:

> how well the target text conforms to target language norms. The errors in this area are those that make the subtitles sound foreign or otherwise unnatural. These errors also upset the contract of illusion as they draw attention to the subtitles (ibid.:220).

Readability includes errors closely related to the technical dimension and have to do with spotting, synchronisation, segmentation, line breaking, line lengths, punctuation, as well as display rates.

Whereas the functional and acceptability types of errors could potentially be extrapolated to other translation domains because they concentrate primarily on the linguistic dimension, the readability classification can be said to be unique to subtitling as it focuses on the technical dimension that characterises the production of subtitles.

Pedersen (ibid.:224) acknowledges the many limitations of putting forward a scholarly model and concludes that:

> there are several weaknesses in the model. One weakness is that it is based on error analysis, which means that it does not reward excellent solutions. Another is that it has a strong fluency bias, as it is based on the contract of illusion. The greatest weakness is probably subjectivity when it comes to judging equivalence and idiomaticity errors […]. There is also a degree of fuzziness when it comes to judging the severity of the errors and assigning them a numerical penalty score.

In addition to its potential in the industry – some companies like SDL claim to have adopted the FAR model as a component for their subtitling application –, the model can also prove relevant and useful for the didactics of subtitling, particularly when it comes to the assessment of students' coursework as it taps into all the main parameters that define the practice of subtitling. Moreover, students can use this model to hone their revision skills by gauging the quality of the subtitles produced by other peers or the ones found in productions that have been commercialised.

To ensure that high-standard quality is achieved in AVT, many companies have developed their own selection processes in an attempt to guarantee that outsourced work is delivered by professional practitioners that care about quality. To test newcomers, companies often arrange translation tests, either on paper or online. Some major multimedia companies have resorted to cloud-based testing platforms, such as Netflix (Hermes, tests.hermes.nflx.io), Sfera Studios (sferastudios.com), and Deluxe (bydeluxe.com), among many others, and it makes sense that educational centres embrace cloud-based ecosystems to train future practitioners and to expose them to the environments in which they will be tested by the companies.

Technologies also help to further integrate QC throughout all the translation phases from production to finalisation. Subtitling systems, for instance, often include automatic error recognition tools, which work on the basis of the properties that have been set for a particular project and is further discussed in Section 3.5.3.

Such automation tools can be utilised by all agents involved in a localisation commission. Thus, the project manager can set up file properties; the spotter can tailor the template to said properties when text timing the video material; the subtitler can benefit from automatic alerts when mastering or translating the template; and the project manager can assist revisers to perform a tailor-made linguistic and technical QC of the finalised subtitles. Ideally, AVT education tools ought to include comprehensive error-checking and QC functionalities too.

The future of the discipline points towards a more solid integration of automation, including AI and CAT tools, in AVT projects, particularly subtitling (Section 3.2). This will inevitably trigger changes in QC as well as the overall assessment of subtitles as we know them, so it only follows that the AVT classroom will be impacted too. To be future-proof, students ought to be trained in the role that automation and CAT tools play in subtitling as well as their unfolding potential.

CHAPTER 3

TECHNOLOGIES IN (AUDIOVISUAL) TRANSLATION

The evolution of translation as a discipline is inextricably related to technological advances. Translation has overgrown rudimentary translation methods and ergonomics, leading to more versatile and dynamic work environments brought about by digital technologies. Ever since parchment glosses translated by monks in medieval scriptoria were replaced by modern printing in Modern Europe, the translation profession never underwent a transformation as dramatic as the one triggered by the invention of modern computing in the mid-20th century. Translation progressively evolved from prints and typewriters to computer text editors and started to make the most of new dedicated specialist software.

The upsurge of new technologies, especially the internet, has historically permitted to expand the domains in which translating processes can occur. According to Folaron (2013), AVT and localisation demand has skyrocketed in a panoply of world, regional, and local languages, as well as a wide variety of domains, thanks to technology. For Cronin (2013), these profound changes, in the age of digital technologies, have shaped and re-shaped the variable nature of translation, which indeed resembles very little the interlingual renderings of written text accomplished in the pre-computer era. In a matter of decades, translation experienced a twofold exponential growth: not only did the volume and nature of translations widened (e.g. localisation of films, video games, websites and software), the proliferation of translation tools and resources also allowed for a significant improvement of translators' efficiency, materialised in higher number of words translated per day, immediate communication and speedier job delivery to clients.

At the turn of the century, tool developers were urged to fine-tune text editors and other tools so that translators could cope with greater volumes of work in shorter spans of time (Matamala 2005; van deer Meer 2018). As discussed by O'Hagan (2016), globalisation, spearheaded by the seemingly never-ending advances of

the internet, has henceforth accommodated new common practices, expectations and experiences in interlingual communication, and, consequently, the translation industry.

After the consolidation of desktop CAT tools in the industry (Section 3.2), the next evolutionary step seems to be the migration of workbenches and other applications to the cloud, thanks to the use of servers in data macro-centres (Garcia 2009). Translators no longer need to work from static offices and handle file storage in hard disks; instead, the whole translation process and workflows – including file sharing, storage, processing, and delivery – are today being migrated onto cloud-based environments (Section 3.4). Working with web-based tools allows for greater flexibility in terms of both geographical and temporal spaces.

As is the case in many other liberal professionals, translators are expected to undertake continuous training and professional development so as to keep up with fast-paced technological advancements. Given this changing environment in the industry, it seems legitimate to expect that updates on translator training methods are also needed to ensure that future translators are familiar with new technologies. Although it seems that many tertiary institutions offering programmes of study on T&I embraced the teaching of CAT tools long ago (Scherf 1992; Kenny 1999), the relentless pace of change in the industry forces trainers to keep also evolving since:

> future translators will, to a greater degree than before, have to become masters of those technologies rather than the other way around. They will have to learn both with and about them, developing procedural and declarative knowledge of how and when to use them to the greatest effect; but they will also have to know, and be able to advise others, about when and how to rely on high-quality human translation instead (Massey 2018:48).

Along with software and website localisation (Esselink 2000), AVT is one of the translation specialties that relies the most on technology. Indeed, as argued by Díaz-Cintas and Nikolić (2017:4):

> to a large extent, AVT has been at the mercy of the twists and turns of technology and it is thanks to the instrumental role played by technology that subtitles can today be successfully produced live with minimal latency, that subtitlers can work in cloud-based environments, usually from the comfort of their own home, that subtitlers' productivity has been enhanced thanks to the development of user-friendly software that enables professionals to work at a faster pace than before, and that audio-described content for the blind and subtitles for the deaf and the hard-of-hearing have become a common occurrence on our screens.

Although both subtitling and revoicing have always been closely linked to technology, with the use of specialist software (e.g. subtitling solutions) and equipment (e.g. dubbing studios), the introduction and spread of DVDs at the turn of the century can be hailed as one of the main developments that changed the AVT landscape across the globe (Díaz-Cintas 2007), permitting the inclusion of several subtitled and dubbed tracks in the same disk. Technological milestones in more recent years are the arrival of streaming and the wider application of CAT tools in the AVT ecosystem (Georgakopoulou 2012).

As professional translation is, nowadays, more technologically driven than ever before, it can be argued that "the use of technology by translators is no longer a luxury but a necessity if they are to meet rising market demands for the quick delivery of high-quality texts in many languages" (Bowker and Corpas-Pastor 2015: online). It is imperative, therefore, that HE institutions keep up with technological advancements and embed them into their curricula.

3.1. Desktop Tools in Audiovisual Translation

Without question, the use of software is inextricably linked to AVT in general, and subtitling in particular (Bywood 2020). One of the reasons why technological advances have been much slower in revoicing is perhaps because translators have traditionally focused on the linguistic transfer without taking care of the dialogue adaptation done, in many countries, by the dubbing director. Another one is that technical components concerning the recording and editing of the new soundtrack tend to be outside the translators' remit. Be that as it may, script translations and dubbing projects still tend to rely on basic technology, such as text editors, and tools remain scarce (Cerezo-Merchán et al. 2016).

In France, revoicing has always been done in an idiosyncratic manner, whereby translators also take care of the adaptation of the lines (*détection*) as well as the synchronisation of the visuals with the translated script (*repérage*). This is the reason why most commercial dubbing software, including Synchronos (synchronos.fr) and Mosaic (www.noblurway.com/fr/solutions/doublage), are commonly used in France.

An open-source equivalent is Cappella (cappella.tv), a dialogue writing tool that synchronises translated dubbing scripts and video, though it only exists in French and has not been updated since 2008. In Spain, Zio Audio's Dialog Spotting, and its newest version iDoblaje (zioaudio.com), are professional tools that allow users, normally employed by dubbing studios, to work with dubbing scripts, video recordings, timecodes, dialogue lists, and takes within the same interface. Dubbing post-synchronisation programs also exist to record the voice actors' interpretations and to mix the soundtracks, but they lie beyond the boundaries of this thesis.

As seen in Section 2.5, the subtitling of audiovisual content has always required tools to overcome technical challenges, such as rendering video while being able to process text, synchronising dialogue and subtitles, inserting timecodes and simulating the subtitles against the images, among many other tasks. Indeed, Kuo's (2015) survey on the professional aspects of the subtitling industry demonstrates that three quarters out of 465 translators that took part in the survey used subtitling software on a regular basis.

As opposed to revoicing, a profuse number of paid, proprietary, and free or open-source software has been developed for the practice of subtitling. All desktop solutions involve the installation of a setup package within a specific operating system, be it Windows, Mac, or Linux. Table 3.1 below offers a list of some of the most popular editors:

DESKTOP-BASED SUBTITLING EDITORS		
PAID	FREE	PROPRIETARY
Annotation Edit	Aegisub	Global Titling System
Cavena TEMPO	AHD Subtitles Maker Professional	EddiePlus
EZTitles	DivxLand Media Subtitler	
FAB Subtitler Pro	Jubler Subtitle Editor	
InqScribe	Open Subtitle Editor	
iSubtitle	LvS	
SubBits	SubMagic	
Softel Swift Creator	SubStation Alpha	
SoftNI Subtitler Suite	Subtitle Edit (Nikse)	
Spot 5	Subtitle Processor	
Sub Machine	Subtitle Workshop	
Subtitle Editor	VisualSubSync	
Titlevision Sub Machine		
Wincaps Qu4ntum 4		

Table 3.1. Desktop subtitling systems

Paid subtitling systems, also known as commercial packages, started to be developed in the late 1970s and have greatly evolved over the last five decades. They require a monetary compensation through a single purchase (CD/DVD, license key, or electronic file) or, much more recently, rental fees. In this respect, a transition has taken place from a capital expenditure model, i.e. investing in the purchase of tools, to an operating expenditure one, i.e. renting a piece of software on a pay-as-you-go basis, which spares freelancers having to invest a large sum of money up-front.

The democratisation of technology has led to the development of free tools that are ever-more present on the internet and are used in commercial and cybersubtitling activities (Díaz-Cintas 2018). Other subtitling programs, known as proprietary subtitling solutions, are tailor made, internally developed by translation agencies or vendors and commonly offered without charge to freelance translators in their databases. They have the potential of reducing costs

by competing against more expensive commercial solutions. Examples are SDI Media's Global Titling System (GTS) and Deluxe's EddiePlus.

When it comes to HE institutions, purchasing commercial software licenses may sometimes be out of the question for some of them as they may not have enough economic resources, even though some of the developers offer educational discounts. When they acquire such technology, students are often limited to working in the PCs available in the classroom, where the licences are usually installed, because they have no access to the software at home (Roales-Ruiz 2014). Given these financial and availability issues, some universities prefer to use open-source software in the classroom (Bolaños-García-Escribano 2016), even though it may not meet the demands of the real AVT market.

When commercial subtitling software is employed, subtitling trainers may have to schedule homework, team projects, individual portfolios and other activities so that students have enough time to carry them out in the classroom apace, unless students are given 24/7 classroom access, software dongles or remote-desktop tools. The first option can have far-reaching managerial implications, e.g. security and access to campus, and may be deemed inappropriate in certain circumstances, e.g. in light of the 2020's global pandemic that forced HE institutions to shut down completely. Software dongles and remote-desktop tools may seem useful alternative solutions, but the former need to be handled with extra care (in case they go missing or wear out) and the latter often require the use of private network connections and are considerably slower, even when broadband is fast.

The next section delves into CAT tools, which have had a considerable impact on translation but have taken longer to enter the AVT ecosystem.

3.2. Computer-aided Tools and Automation

Technological advances, and CAT tools in particular, have led to a gradual transformation of tasks carried out by translators, localisers, revisers,

terminologists, and project managers. This section explores CAT tools and automation from a general perspective to later focus on their applications to AVT.

According to Bowker and Fisher (2010:60), CAT is a term "typically reserved for software designed specifically with the translation task proper in mind, rather than tools intended for general applications (e.g., word processors, spelling checkers, e-mail)", though they are also more generally understood as any computerised tool that help translators do their job (Bowker 2002; Garcia 2012; Chan 2014*b*). As posited by Garcia (2014:68), CAT tools are "created with the specific purpose of facilitating the speed and consistency of human translators, thus reducing the overall costs of translation projects while maintaining the earnings of the contracted translators and an acceptable level of quality."

Following Bowker (2002:7), there are three main types of translation tools:

- Human translation tools: text editors and word processors, spelling and grammar checkers, electronic resources, internet and email;
- CAT tools: data-capture programs (e.g. speech and optical character recognition), corpus-analysis software, terminology-management systems, translation memories, localisation and website localisation tools, and diagnostic tools; and
- MT tools: machine-translation systems.

The aforementioned taxonomy, however, becomes too limiting in the age of digital and cloud technologies, and Bowker and Corpas-Pastor's (2015) updated five categories are more fruitful: TM and terminology management systems, term extractors, concordancers, localisation tools, and MT systems. For the purposes of this research, only the first and the last categories will be devoted further attention since they are the ones being applied to AVT more widely (Díaz-Cintas 2013*a*; Burchardt et al. 2016; Baños 2018; Díaz-Cintas and Massidda 2019).

To carry out their job, translators resort to the use of translation workbenches or workstations, which are understood as the set of tools a translator needs to carry

out professional work. With the passing of time, these have progressively incorporated an increasing number of automation tools (Poirier 2018). In general terms, a translation workbench is:

> a single integrated system that is made up of a number of translation tools and resources such as a translation memory, an alignment tool, a tag filter, electronic dictionaries, terminology databases, a terminology management system and spell and grammar-checkers. (Quah 2006:93–94)

Today, TM systems are commonly integrated in translator's workstations. They work on a segment level basis and, contrary to MT, are not fully automated, which means that they still necessitate action from human translators to operate. As Kenny (1999:74) explains:

> the basic technology employs a database to store segments of a source text as it is being translated, and the corresponding segments of the target text as input by a human translator. Should an identical or a similar source segment arise in a subsequent source text, or even further on in the same source text, then the translation that is already in memory is offered as a potential translation to the human user, who may then accept, partly accept or reject the suggestion.

TM tools store and prompt the translator to re-use sets of previously translated segments that are synchronously aligned as the translator works. TM tools operate on a segment-pairing basis, allowing for the creation of large data and term banks that can be exported and used across different workbenches. In general terms, the use of TM permits to work faster and more consistently, contributing to greater coherence in translations, particularly when it comes to the use of repeated terminology. They usually take the form of paid software, such as memoQ, SDL Trados Studio, and Wordfast, but there are also open-source solutions such as OmegaT.

MT systems produce (almost) instant translations of large volumes of textual content, from one language to another. Contrary to TM tools, they do aim to replace part of the human's agency in the translation process, transforming their role and prompting them to carry out new tasks like pre-editing and PE, which are different from traditional translation and revision. MT tools can be easily incorporated to existing CAT tools nowadays.

Developments in MT can be traced back to the mid-20th century, when pioneer linguist and language engineer Warren Weaver "proposed the use of cryptographic techniques to mechanise translation" (Quah 2006:59). MT systems have overgrown these early approaches, including first-generation systems that worked on a word-for-word basis with no clear built-in linguistic component, and they take many different forms today. There are three main types of MT systems: knowledge-based, corpus-based, and neural. In corpus-based MT, "previous unseen texts are automatically translated using information gleaned from examples of past translations produced by humans" (Hearne and Way 2011:205). Example-based MT and statistical MT (SMT) are their two primary strategies, but hybrid systems – combining them both – have also been developed over the past few years. Both approaches are based on existing parallel texts, but they differ as follows. As discussed by Sánchez-Martínez (2012), example-based MT is accomplished via analogy – given one or more parallel texts, the system analyses the translatable sentence, divides it into smaller segments whose translations are found in the parallel texts, and combines them to produce a new translation in the target language – whereas SMT is accomplished via statistical models whose parameters are automatically learnt through monolingual and parallel texts and also combine various statistical models.

A decade ago, phrase-based statistical MT was the predominant paradigm (Way 2010), with popular cloud-based MT engines such as Google Translate, which was first launched in 2006 (Le and Schuster 2016). In the mid-2010s, Devlin et al. (2014) and Cho et al. (2014) suggested the application of deep neural network language models in natural language processing (NLP) to existing SMT models. The said studies provided strong empirical evidence that SMT output was considerably improved with the use of conditional probabilities of phrase pairs computed through these new models. Large companies, such as Google, soon echoed these early research studies to develop enhanced neural MT (NMT) engines (Wu et al. 2016).

Since the launch of Google's NMT engine in 2016, the field is virtually dominated by advances in neural networks as well as on the premises of deep learning applied to NLP (Bokka et al. 2019). As accounted by Koehn (2020), neural

networks can be applied to neural language and translation models, whereby the input of linguistic information (i.e. encoding) leads to the prediction of linguistic output (i.e. decoding) by means of association (i.e. attention mechanism) and training (i.e. unrolling).

MT systems have traditionally, if not systematically, raised concerns about the quality of their output (Arnold et al. 1994; Pym 2018; Mellinger 2018). However perfected some hybrid systems may be, there are many factors – including "language distance, text type, definition of quality, the metric used and who the post- editor is, with this last factor perhaps being the most crucial" (Pym 2018:442) – that may prevent any MT system from translating a given text adequately. In the specific case of AVT, the system may not be able to ascertain how the visuals interact with the verbally expressed messages, hence potentially leading to incongruent literal translations that would be out of context.

MT necessarily calls for yet a new understanding of quality as the raw output is generally of a lesser quality than human translations. To comply with (high) quality standards, machine-translated raw output ought to be post-edited. Post-editing (PE) is a task that involves revising MT output (BSI 2015*a*:1), hence overlapping revision, albeit differing in many aspects, such as the type of errors encountered and the final level of quality expected. There are different PE guidelines, both academic and professional, all of which differentiate between two main degrees of PE: (1) light PE, from which an understandable and usable text is produced even if it is not linguistically or stylistically perfect; and (2) full PE, which pursues human-like quality by producing text that is stylistically appropriate and linguistically correct (Hu and Cadwell 2016). As Allen (2005) highlights, PE guidelines in the market tend to be individually elaborated for each institution, thus leading to a general lack of homogeneity.

For scholars like Pym (2011), PE risks undermining professional translators' agency and power, as amateurs and paraprofessionals can post-edit MT output with relatively good success. Others, like Krings and Koby (2001), opine that PE involves highly specialised (extra-)textual processes and, therefore, professional translators with training in the field are better qualified for the task. As Torrejón

and Rico (2012) point out, the competences required for PE are analogous to those of conventional interlingual translation.

When it comes to AVT, workstations have experienced multiple shifts and transformations over the last few decades. The multimedial nature of audiovisual texts has often made it difficult to use TM systems in professional subtitling. As explained in Section 2.1, words, expressions and sentences can undoubtedly take many forms in written texts (e.g. social implications, metaphorical values and implicit meaning, to mention but a few), but the number of possibilities increases quite substantially with the incorporation of image and sound, which has traditionally been a stumbling block in the use of TM tools in the translation of audiovisual texts (Díaz-Cintas 2001). Nowadays, though, TM tools are being timidly integrated in AVT with the aim of increasing AVT productivity and reducing costs. In her study of current practices in the freelance subtitling industry, Athanasiadi (2017) concluded that subtitlers were very eager to utilise subtitling tools with functions like TM and translation databases to improve their efficiency.

In this respect, memoQ launched an add-on in 2018 that allows users to watch a clip when translating in the TM interface. Some months later, in September 2019, SDL also released a similar video plugin that they claim provides features for previewing subtitle captions within the video while translating in the existing editor and includes QC checks for validating subtitle content. Other developers have also followed suit and the cloud-based tool Transifex offers an editor tool that supports video preview to help translate subtitles whilst being able to watch the clip within the same interface. Having said that, no CAT tools in the market allow users to spot clips, which still constitutes a quintessential part of the subtitling process (Section 2.5.1.1). Instead, they rely on the assumption that translators will be working with timed templates, which has become a common trend in the industry (Nikolić 2015; Georgakopoulou 2006, 2012).

Some cloud-based tools are now experimenting with the incorporation of TM (and also MT) into their interfaces. For instance, the Chinese subtitling software tool named YYeTs (shimo.im/docs/AIYgzUxvrXg5QWJs/read), created by the company Yi Shi Jie [Translate – Visual – World] (1sj.tv), is available on the cloud

and combines AI, automatic speech recognition (ASR) for the transcription of dialogue, TM, and MT features within the same interface, alongside a PM tool in which the work can be better distributed among translators. Also in China, the cloud-based platform NetEase Sight (sight.netease.com) claims to be able to automatically produce bilingual subtitles in English and Chinese. OOONA have also developed an interface for MT and TM but is not available to the public yet.

On the MT front, AVT poses a number of challenges, as accounted by Burchardt et al. (2016:212):

> most MT systems have been developed using large databases of translated *written* (vs. originally *spoken*) texts that are grammatically correct, with proper punctuation, capitalization, etc. In addition, MT is used most frequently for technical texts where the vocabulary and structures are highly predictable and often restricted. By contrast, AVT of subtitles and dubbing scripts, by its very nature, deals with written representation of spoken dialogue.

Despite these hurdles, a number of EU-funded research projects have looked into the possibility of merging MT and AVT over the years, among which: MUSA (Multilingual Subtitling of MultimediA content, 2002–2004, sifnos.ilsp.gr/musa/index.html), eTitle (2003–2004, upf.edu/en/web/glicom/e-title), SUMAT (2011–2014, Subtitling by Machine Translation, cordis.europa.eu/fp7/ict/language-technologies/project-sumat_en.html), and EU-BRIDGE (2012–2015, eu-bridge.eu). Originally funded by the EU, TransLectures (Transcription and Translation of Video Lectures, 2011–2014, www.translectures.eu) is a cloud-based tool created by the Universitat Politècnica de València, Spain, that utilises ASR and MT systems for the localisation of academic video lectures.

The potential benefits of using TM and MT applications in the translation and QC of subtitles opens up new academic and professional avenues and makes their inclusion in AVT education highly desirable.

3.3. The Emergence and Consolidation of Cloud Technologies

Starting off in the late 1990s, and spreading over the early noughties, cloud computing has experienced a quick expansion around the globe, leading to a major turn in the way in which we use applications and store information in the age of big data. The average 21st century computer user has progressively become more aware of the many cloud tools that are nowadays at their disposal. Storing files in off-site servers, sharing document links, working with colleagues on the same documents simultaneously and remotely, playing video games and streaming videos online are only some of the many tasks that are commonly accomplished on the cloud.

From an epistemological point of view, pinning down the essence of cloud computing seems to be an arduous task to undertake, especially on account of the many, sometimes even competing definitions that are available (Vaquero et al. 2009). According to Birman et al. (2009), the lack of terminological consensus arises from the diverging positioning that scholars can adopt, as they can explore the cloud in a so-called inward way, i.e. as developers and traders, or in an outward manner, i.e. as end users. The most widely agreed definition of cloud computing is perhaps the one drafted by Mell and Grance (2011:1) for the US National Institute of Standards and Technology:

> a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

From a more business-oriented perspective of the role of cloud applications in working environments, cloud computing can be understood as:

> any IT resource, including storage, database, application development, application services, and so on, that exists outside of the firewall that may be leveraged by enterprise IT over the internet. The core idea behind cloud computing is that it is much cheaper to leverage these resources as services, paying as you go and as you need them, than it is to buy more hardware and software for the data center. (Linthicum 2010: 7)

These systems provide service developers and users with resources that are typically offered on a subscription basis, which can be expanded or contracted, and which include storage services, database services, information services, testing services, security services, and platform services (Linthicum 2010).

One of the main economic benefits of cloud platforms resides in the absence of upfront capital expense (Armbrust et al. 2010) as the pay-as-you-go or pay-per-use scheme allows users to hire the tool for a certain period of time in order to carry out their translation commission. A further advantage of cloud-based solutions is the enhancement of time- and cost-effectiveness in the development and sale of a specific application. By way of illustration, the creation of an on-premise hardware application or platform would entail the purchase of the software and its installation in data centres, followed by integration testing, deployment and acceptance, which could take months. In off-premise or cloud environments, such installation may only take a few hours provided existing public cloud providers are used. Another main advantage, which has undoubtedly propelled its expansion in everyday computing at end-user level, is the delocalisation of file-based data storage. Storing data on the cloud reduces the costs on hardware and facilitates access, as data can be reached from anywhere and any device connected to the net.

As explained by Sriram and Khajeh-Hosseini (2010), to understand how clouds work, one needs to understand the different deployment and service models that govern them. Firstly, five essential characteristics define cloud systems: (1) they are self-services that can be acquired and used by cloud service providers because they are on-demand services; (2) they are accessed over a network from a device; (3) their resources are shared by multiple users by means of multitenancy (also called pooling); (4) they are more quickly acquired by scaling out, i.e. adding components horizontally (linking new servers to an existing server network), rather than vertically (adding memory and storage resources to an existing server); and (5) all usage of the services and resources is metered to determine the payment in which users may incur.

Secondly, clouds began to be marketed according to four different deployment models – public, private, community and hybrid – but, with the passing of time, these systems have also taken the form of computing ecosystems (including cloud management applications) and tools for building private clouds. The main difference between the aforementioned cloud types lies on the ownership, and physical location, of the hardware and software necessary for the deployment, running and use of the applications on the cloud.

Thirdly, there are three main service models depending on the use of resources and the level of abstraction: (1) software as a service (SaaS), which are finalised applications that can be rented and customised on the open internet and are designed to replace information located in data centres; (2) infrastructure as a service (IaaS), which virtually provides servers, storage and network end points through an automated web-based management console and replaces traditional applications so as to access computing resources remotely; and (3) platform as a service (PaaS), which is a complete deployment platform leveraged on demand and is a cloud version of an application that is hosted remotely.

In plain terms, a cloud application instance needs several components to run, mainly the data storage and central processing units, which can be either on premise or off premise. Cloud providers (e.g. Amazon Web Services) supply developers (e.g. OOONA) with the infrastructure necessary to run a specific application and it is up to developers to leverage the technology and resources required and thereafter acquire the cloud services they need – i.e. SaaS, IaaS or PaaS – in a pay-as-you-go basis.

Traditionally, there are three major public cloud providers where applications can be hosted – Amazon Web Services (2006–, aws.amazon.com), Google Cloud (2008–, cloud.google.com) and Microsoft Azure (2010–, azure.microsoft.com). Their point in common is that they offer an IaaS cloud (Shroff 2010). Applications can be initiated on the cloud from scratch, while analogue or legacy software – i.e. applications that are often desktop-based and run on the computer's processing power and memory – can be migrated to the cloud by means of re-configuration, customisation and deployment. Be it as it may, cloud tools are

normally a service (aka utility computing) made available to users via SaaS provision. Figure 3.1 below displays a visual scheme of how the cloud works from the provider's end to the user's end:

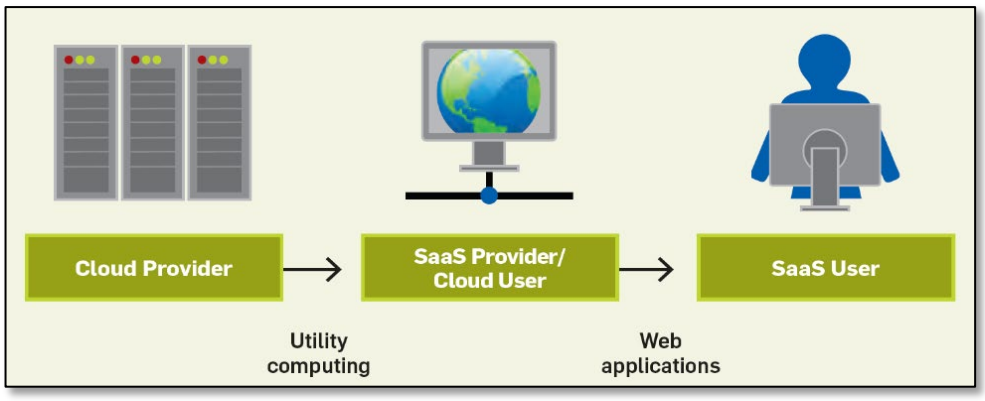

Figure 3.1. Users and providers of cloud computing (Armbrust et al. 2010)

The different components, and sub-components, needed to engineer the power of cloud resources are known as the cloud architecture, which comprises of five main levels: application, network, processing, data and storage. In a nutshell, the application relies on the leverage of the network, processing, data, and storage, to be turned into a solution that aims to solve a specific problem.

One of the main challenges posed by cloud computing is the security factor. In this sense, it is commonly agreed that cloud computing "has changed how organizations should assess and mitigate information security risks because of the significant changes in how computing resources are technically designed, operated and governed" (BSI 2015*b*). Cloud services usually market their infrastructures by putting an emphasis on secure cloud-computing environments, but scholars have systematically pointed out that they can pose additional threats to both developers and end-users (Vaquero et al. 2011) inasmuch as "traditional security mechanisms may not work well in cloud environments because it is a complex architecture that is composed of a combination of different technologies" (Hashizume et al. 2013:11). This is why users need to take extra caution with sensitive data (e.g. copyright material) on account of the multitenancy nature of cloud environments, whereby users can store and share resources. This is highly

relevant in the AVT industry, where materials are usually subject to confidentiality and copyright.

In the so-called fourth industrial revolution, “which creates a world in which virtual and physical systems of manufacturing globally cooperate with each other in a flexible way” (Schwab 2016:13), the cloud has come to be a new ecosystem (Linthicum 2017). Yet, as it occurs with all technological developments, it is expected that cloud systems be followed by yet more innovative systems with which users can share information and handle projects more efficiently. It is just a matter of time that the ways in which we operate in cloud-computing environments experience a new metamorphosis.

3.4. Cloud-based Systems in (Audiovisual) Translation

Cloud-based (audiovisual) translation tools are online solutions that support the management of translation projects fully online (i.e. on the internet via a browser). The translation industry has warmly embraced cloud-based tools, which are being progressively implemented in work environments and replacing desktop-based solutions. The cloud has made major inroads in the industry, especially in PM, TM and MT, but also in the AVT industry.

There are two prominent cloud-based translation PM tools: Transifex (2009–, transifex.com), which is a management and crowdsourcing platform that automates localisation workflows by means of tool integration and was initiated as an open-source project but then commercialised from 2013 onwards; and XTM Cloud (2010–, xtm-cloud.com), which is a translation and localisation management system that also includes a CAT tool.

Among the most popular TM tools (Section 3.2) that operate in the cloud are the following: (1) Wordfast Anywhere (2009–, freetm.com), which is a free web-based version of Wordfast, with a workflow and user interface similar to that of Wordfast Classic; (2) Memsource Cloud (2011–, cloud.memsource.com), which provides a translation environment that supports various file types, as well as real-time

monitoring of the whole translation process; (3) MateCAT (2011–, matecat.com), which is an open-source piece of software resulting from a three-year EU-funded project that also offers pay-as-you go plans for customised interfaces and support; (4) MemoQ Cloud (2014–, memoq.com/cloud), which is the cloud-based version of the TM system memoQ; (5) Smartcat (2015–, smartcat.ai) is an all-in-one platform connecting businesses and translators into a streamlined content delivery loop; and (6) SDL Online Editor (2017–, sdltrados.com/products/language-cloud/online-editor), an online translation and review editor whose interface is similar to SDL Trados Studio and enabling real-time sharing for everyone working on a translation project. More recently, SDL launched Trados Studio 2021 using their cloud system, SDL Trados Live, in a hybrid manner.

Many cloud-based TM tools also feature MT engines or allow for the use of external SMT engines via an application programme interface, e.g. Apertium (apertium.org), Bing Microsoft Translator (bing.com/translator), Google Translate (translate.google.com), Promt (online-translator.com), and Yandex Translate (translate.yandex.com).

Despite some of the EU-funded projects mentioned in Section 3.2, cloud-based MT tools remain somehow scarce but are becoming more widely used in professional settings due to recent developments made in the field of hybrid and NMT systems (Wu et al. 2016), which usually enable a secure environment that can be customised, deployed, and evaluated for translation and localisation purposes. Among the several MT engines that are currently available in the cloud, some of the most popular ones are (1) DeepL (deepl.com/en/translator), (2) KantanMT (kantanmt.com), (3) Language Studio (omniscien.com/language-studio/language-studio-2), (4) Iconic Translation Machines (iconictranslation.com), (5) Pairaphrase (pairaphrase.com), (6) Microsoft Translator (translator.microsoft.com), (7) SmartMATE (smartmate.co), and (8) Systran (systransoft.com).

In the case of the AVT ecosystem, a substantial number of cloud-based translation systems are currently being developed, mostly by private agents,

allowing for subtitling and revoicing work to be handled online. Today's landscape is progressively accommodating a wider variety of cloud-based tools, which can be used for PM or translation proper. An example of the former would be OOONA Manager (ooona.net/ooona-manager), which offers seamless management of localisation, translation, and subtitling workflows in a user-centric, cloud-based interface. The latter, like OOONA Tools (ooona.ooonatools.tv), are also becoming increasingly popular among freelancers and agencies because they can be purchased for a specific period of time and do not require installation packages.

Although cloud-based solutions are being developed not only for the text timing but also the dubbing and VO of audiovisual products (Díaz-Cintas 2015; Matamala 2017), subtitling tools are slightly ahead of the game and are the main topic in these pages. As with desktop tools (Section 3.1), cloud-based solutions can be paid, free, or proprietary. Some examples of cloud-based subtitling editors are shown in Table 3.2:

CLOUD-BASED SUBTITLING EDITORS		
PAID	**FREE**	**PROPRIETARY**
CaptionHub	Amara	Deluxe One
SHIRE	Dotsub	iMediaTrans
Subtitle Editor	Khan Academy	MediaWen
OOONA Tools	Subtitle Edit Online	Netflix Originator
	Viki	Plint
	YouTube Studio	ZOOSubs

Table 3.2. Cloud subtitling systems

Many subtitling initiatives conducted in cloud environments were the fruit of collaborative projects, initiated and powered by specific organisations or teams of volunteers, rather than commercial ones. To avoid having to download and install any specialist programs locally, they provided online tools built for the specific purpose of subtitling, which are relatively easy to learn and use as the contributors are meant to be volunteers with limited subtitling skills rather than professional subtitlers. Some of the free platforms, such as YouTube Studio

(studio.youtube.com) and Amara (amara.org), were developed before paid and proprietary systems, to be used in very specific scenarios, e.g. Amara is used for voluntary localisation commissions for TED Talks.

Back in 2009, the first web-based proprietary subtitling system was launched by ZOO Digital (ZOOsubs, zoosubs.com). Since then, a wide range of cloud-based subtitling tools have been developed by LSPs as shown in Table 3.2 above. Netflix seems to be the only large audiovisual media producers and distributors to have developed a tool to improve the overall productivity and quality of the translation outcome achieved by vendors (i.e. Subtitle Originator and QC 2.0).

Paid tools, such as OOONA Tools, allow freelance professionals to carry out their translation commissions on a pay-as-you-go basis and are becoming increasingly popular in the market (Fernández-Moriano 2019; Salotti 2019). These offer many advantages to professionals and translator trainers alike but require monthly or yearly subscriptions, which would work best for translators who receive subtitling commissions intermittently. These tools hold an enormous potential as they can allow for a leaner workflow whilst permitting translators to work synchronically and help each other, thus leading to more interactive ecosystems if built-in social networking were introduced.

All in all, the cloud has brought about a whole new notion of subtitling through collaboration among people based in different geographical locations (Díaz-Cintas 2015, 2020*b*). Alongside cloud tools, the expansion of social media has also led to greater interactivity and connectivity among the subtitlers and other professionals involved in translation projects in which a substantial number of individuals can work simultaneously, often with different language combinations and in different geographical spaces, as long as the project managers prepare the material and files for this purpose. In fact, current systems do not allow linguists to work on the same file at the same time, so the source files, including templates and other translatable documents, would have to be made available multiple times and the results would have to be collated afterwards under the scrutiny of the project manager. Enabling teams of translators to work on the

same scripts or templates would contribute to a smoother sharing of data and teamwork collaboration.

Irrespective of their nature, most cloud-based subtitling tools offer the possibility of working with templates (Section 2.3), in which the timecodes are often locked to avoid any problems, to maximise resources and to cut costs by sharing the same pre-timed subtitles file with all translators involved in the same project (Díaz-Cintas 2008*b*; Nikolić 2015). The imposition of templates as a common working file in the industry (Georgakopoulou 2012) has legitimised their inclusion in state-of-the-art cloud-based tools too.

Finally, many software developers are usually eager to receive end users' feedback so that they can fine-tune their solutions and customise them to their customers' needs in a more agile way (Gurses and van Hoboken 2018). Cloud-based systems are credited with being quick to react to change, which is manifest in the way in which they can recover and come up with quick updates whenever bugs or missteps might occur, thus promoting a more stable and seamless work environment. These enhancements, nurtured by the hand-in-hand collaboration between the software developers, researchers, and end users, help to reshape newer versions of subtitling systems and are exemplary of the fruits that collaboration among stakeholders can yield (Bolaños-García-Escribano and Díaz-Cintas 2020).

Although cloud-based tools were not very popular among subtitling trainers a few years ago, many have expressed their will to incorporate them into their programmes of study (Bolaños-García-Escribano 2018). In a recent study on the didactics of subtitling, Roales-Ruiz (2018) claimed that one of the technological advances that could be applied to the teaching of subtitling, and therefore AVT, would be the development of an online subtitling tool tailored for educational purposes. Section 4.4.1 contains a more detailed account of existing pedagogical tools.

The next section introduces the main features of a cloud-based subtitling tool, in an attempt to elucidate what trainers can expect from similar tools.

3.5. OOONA Tools

AVT technologies, including subtitling systems, can be examined in terms of their potential for the industry and their ease of use in the classroom. Out-of-the-shelf technologies can be challenging in the classroom, particularly with beginners, because they are not designed for educational purposes but for professional practice (Roales-Ruiz 2014). The use of professional subtitling tools in the classroom, however, allows students to become familiar with standard industry practices and subsequently become more employable too (Bolaños-García-Escribano and Díaz-Cintas 2020). It can also be argued that adapting existing professional subtitling software to make it more pedagogically sound and meet the demands of AVT education in HE institutions can be a sensible solution.

For this doctoral research, OOONA Tools, previously known as the Online Captions and Subtitles Toolkit, is used for examination and experimentation purposes. So, it has been the cloud-based tool used to design, develop and run all experiments undertaken throughout this research (Section 5.2). An ISO 27001:2013 certified commercial tool, OOONA Tools is exclusively supported on Google Chrome at the time of writing this thesis. It offers a wide variety of applications, including text timing, template translation, reviewing, file conversion, and burning and encoding, among many others. Contrary to other cloud-based systems, OOONA Tools is not proprietary – i.e. associated with a specific media distributor or LSP – which means that any user can create an account and purchase a monthly or annual plan. This SaaS application stores all the materials that subtitlers need to text time clips and translate templates, and also allows to import audiovisual resources via cloud storage and web links. It also offers wide application integration with other cloud- and desktop-based systems.

Although originally developed for professional subtitling, OOONA Tools' potential for translator training was established very early on, despite some initial drawbacks. The tool needed to be updated, as well as fine-tuned, so as to satisfy the usability requirements as per international standards (BSI 2008). According to Bolaños-García-Escribano (2016:44):

> three key points make OOONA Tools a very promising tool for subtitler training and future professionals – firstly, it is functionally suitable for subtitling professionals, in the sense that it allows to cover most phases of a subtitling project; secondly, it is fully compatible with other desktop-based software through a very powerful conversion tool; and thirdly, it seems both reliable from a technical point of view and portable from a mobility management perspective.

Several drawbacks, such as the lack of a reading speed viewer, were detected in earlier versions of OOONA Tools, but these have now been resolved. Initial experiments with the tool led to the exchange of feedback with the software developers, who have continued updating the tool ever since. The new developments of OOONA Tools are therefore exemplary of the results that close collaboration between software developers, academics and users can yield.

OOONA Tools is a modular solution that, as seen in Figure 3.2, offers a wide range of tools to perform the cueing or text timing of interlingual (Create, Create Pro), as well as intralingual (Closed Captions) subtitles, to translate from templates (Translate, Translate Pro), to review and proofread other linguists' translations (Review, Review Pro), to convert files into some of the most widespread subtitle formats (Convert, Batch Convert), to transcribe the original utterances with automatic speech recognition (Transcribe), to burn subtitles and images into a single video file (Burn & Encode), to compare subtitle files (Compare), and to view final versions of subtitled videos (View):

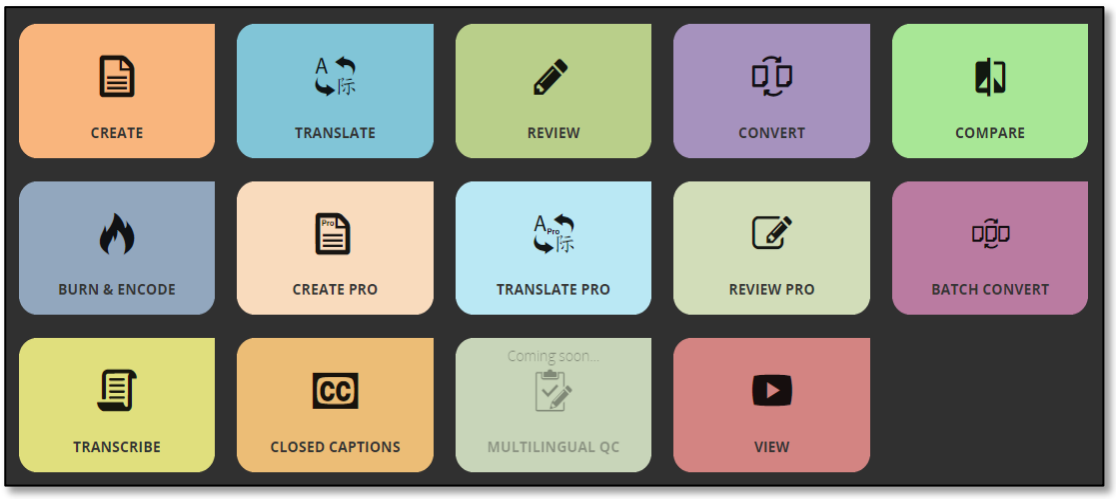

Figure 3.2. Home of OOONA Tools

The main difference between the standard and the Pro versions is that the latter include a waveform display and automatic shot-change recognition functionalities. The professional tools (i.e. Create Pro, Translate Pro, and Review Pro) as well as the Burn & Encode tool require the installation of a separate plugin called OOONA Agent.

Working with OOONA Tools, students and trainers can simulate all subtitling phases on the cloud, from receiving the original materials (video or project file, subtitle template), to spotting and translating, to burning and encoding the video for delivery. In this section, the discussion will centre on the Pro versions of the tools.

The tools look easy to use, intuitive, and flexible and have user-friendly and visually attractive interfaces that can also be customised in terms of layout and outlook (Figure 3.3), thus enhancing its accessibility potential:

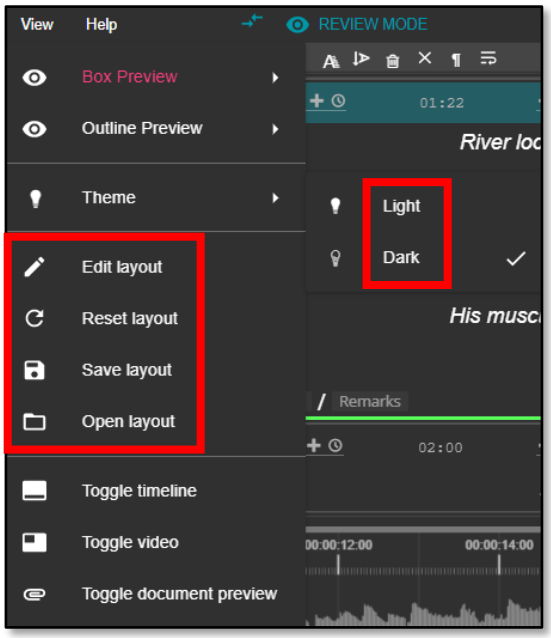

Figure 3.3. View menu

The user can add, remove, or relocate any of the different components of the Create, Translate, and Review tools. In Figure 3.4, the video player, the source text view and target text editor as well as the timeline of the Create Pro tool can be removed by clicking on the cross. All components can also be enlarged or

dwindled down as required. They can also be manually toggled from the menu wherever the user needs to focus greater attention on concrete aspects of the subtitles (e.g. grammatical accuracy and style) and therefore requires a better view of the said component.

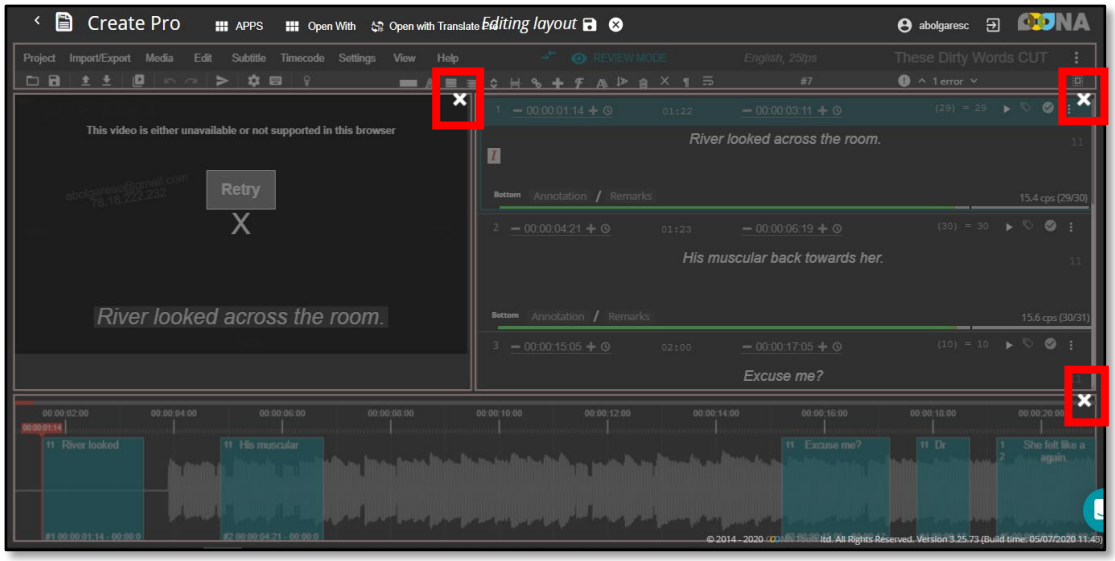

Figure 3.4. Create Pro layout customisation

The tools have a settings menu that allows the subtitler to readjust the file properties at any time, as shown in Figure 3.5:

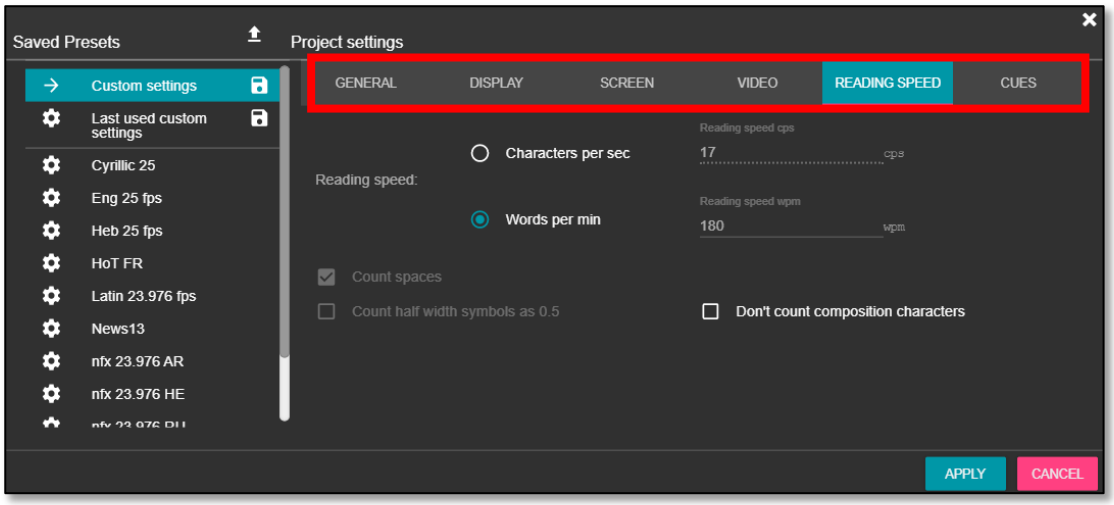

Figure 3.5. Subtitle project settings

The properties encompass six main categories: (1) general (subtitle type, language, and text position, alignment, and direction), (2) display (text size), (3)

screen (safe area, length of subtitle lines, and spacing), (4) video (encoding, frame rate, timecode format, and audio scrubbing), (5) reading speed (display rate and counting method), and (6) cues (subtitle duration, minimum gap, and shot changes). As discussed in Section 2.5.1.1, these need to be adjusted in accordance with the technical particularities of subtitling, which vary depending on the conventions used for each project.

Also relevant is the fact that shortcuts to operate the tools can be fully customised by the user (Figure 3.6), thus promoting a more tailor-made working environment. To edit a pre-set shortcut, it suffices to compose the new shortcut using the dropdown menus on the right-hand side of the menu. Shortcut configurations can also be saved, imported and exported, and shared with third parties.

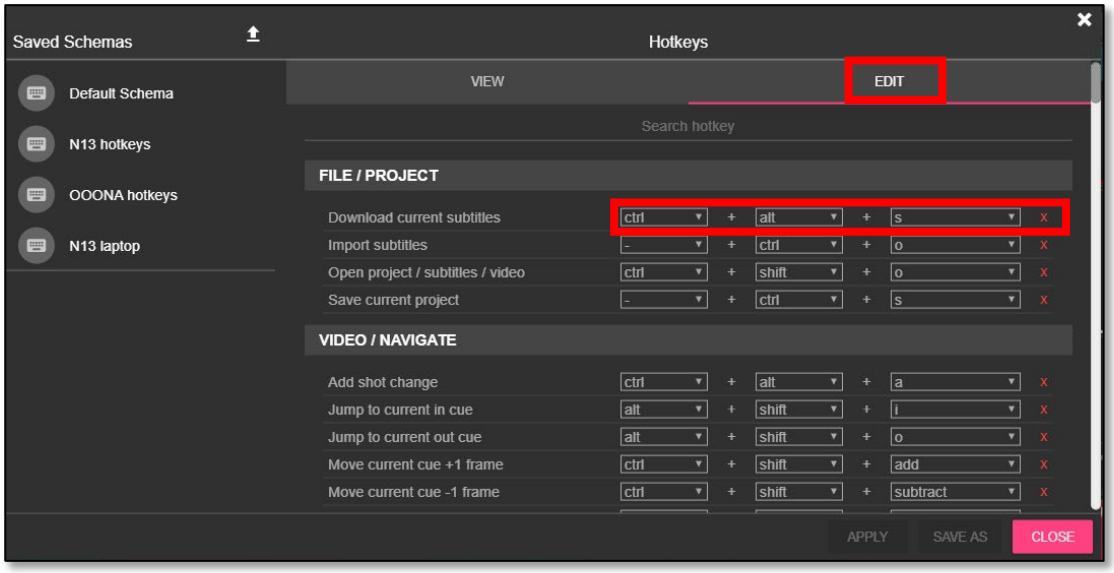

Figure 3.6. Hotkeys customisation menu

From an educational perspective, the comprehensive settings and shortcuts menus offered by OOONA Tools may be employed to develop concrete instrumental skills such as file sharing and PM. On the one hand, adjusting subtitle file properties adequately forms part of the necessary training in pre-spotting file preparation as well as post-production compliance and QC. On the other, customised shortcuts help to make the tools fit for purpose and suitable as well as tailored to everyone's needs and habits. Additionally, students can be

trained in techniques that will help them improve work efficiency as well as flexibility to work across tools.

Once a project has been created, each keystroke is automatically saved, thus ensuring users will not lose their work whilst working online. In those areas where the internet connection may be too slow, intermittent and erratic, the process of spotting might become frustrating: a solution to this downside could be the option of using the tool in offline mode.

The following sections further examine the five OOONA Tools that can be used to teach the multifarious challenges of subtitling (Section 2.5.1).

3.5.1. Create Pro

The Create Pro tool (Figure 3.7) permits to produce subtitles from scratch in any language. Its interface includes the essential features needed to spot a clip as it allows the subtitler to add, remove, and edit subtitles (A) in synchrony with the video player situated at the top left-hand side of the tool (B). The timeline (C), at the bottom of the screen, displays subtitles in the form of blue boxes that can be shortened or enlarged, and dragged from right to left, and vice versa. It shows the soundwave (grey) and the shot cuts (orange vertical lines). When boxes are customised in the timeline, the timecodes change automatically:

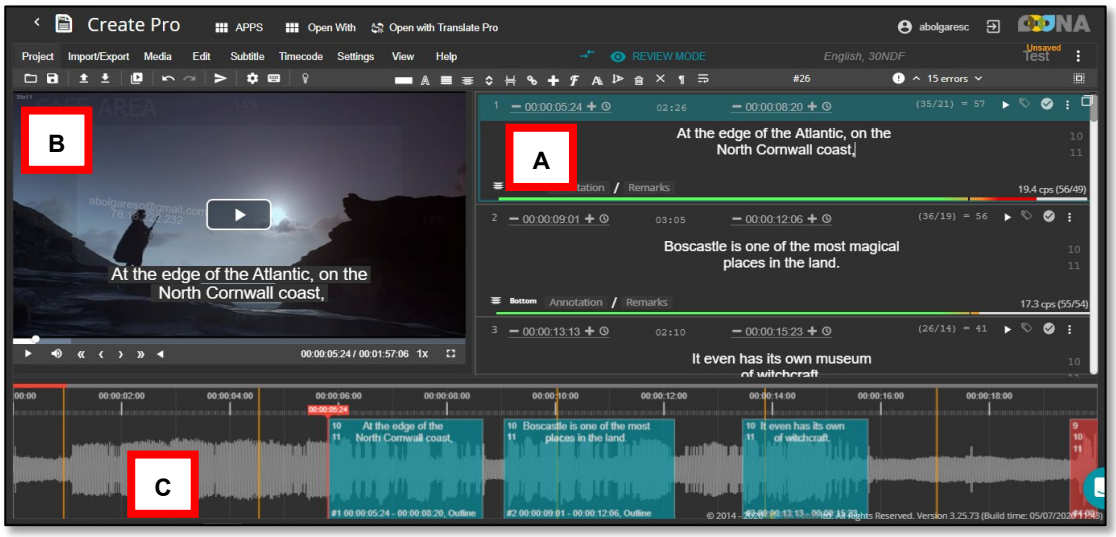

Figure 3.7. Create Pro tool

The text editor, containing the subtitle boxes as illustrated in Figure 3.8, displays subtitles individually and includes key information, such as in and out timecodes, subtitle duration, number of cpl at the top of the box (A), as well as the reading speed (cps or wpm) at the bottom of the box (C). As the target-text editor is filled in with the new subtitles, the coloured bar below each subtitle box will progressively pass from green to orange to red as a way to measure the reading speed (cps or wpm), thus alerting users when the translation needs to be further condensed so that it can be comfortably read by the audience. Any technical errors present (Section 3.5.3) are displayed on the text itself highlighted in red (D) and in the form of a red alert round icon on the top bar of each subtitle box.

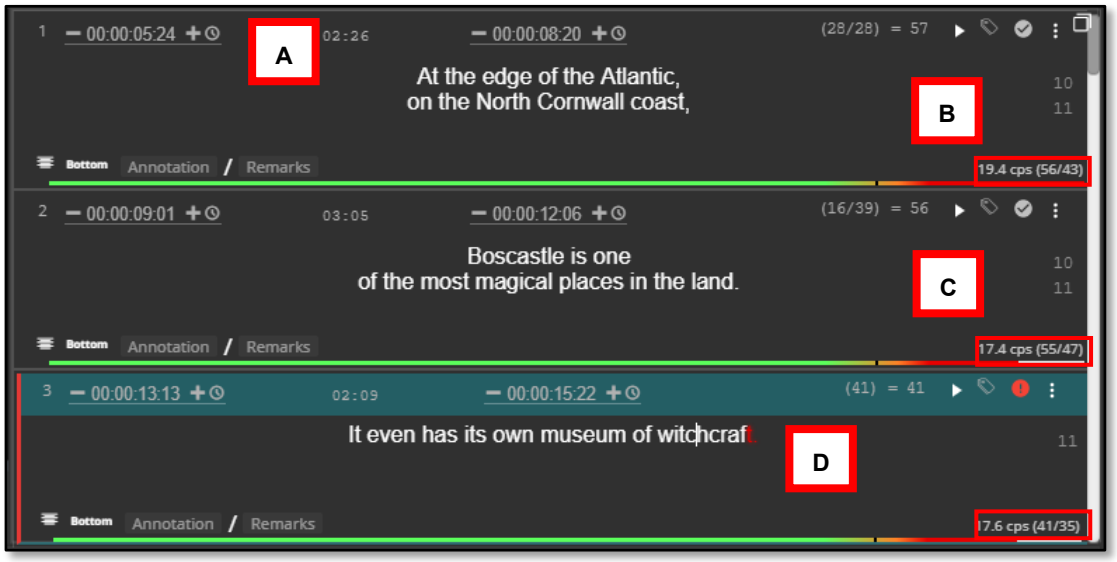

Figure 3.8. Create Pro tool's text editor

Each subtitle can be customised in terms of font, style, position, alignment, background and shadow, colour, among many other aspects by toggling the different options present in the toolbar, as shown in Figure 3.9:

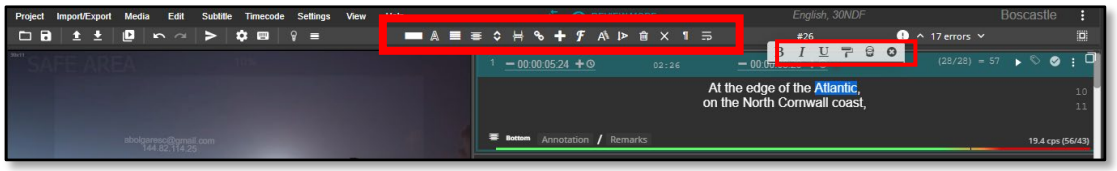

Figure 3.9. Create Pro tool's top toolbar and pop-up font toolbar

To work on a subtitle project, the user can upload videos stored in their local drive or, alternatively, work directly with a video hosted on YouTube, by indicating only the URL as illustrated in Figure 3.10:

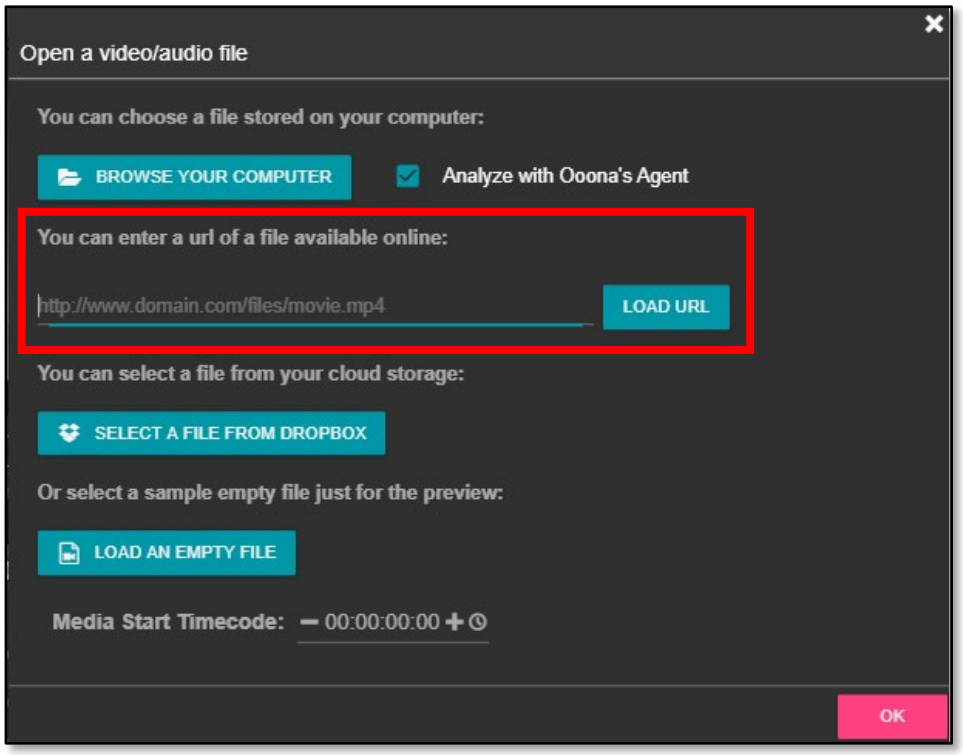

Figure 3.10. Media upload menu

From a pedagogical perspective, the latter is a hassle-free and time-efficient approach to secure video material as neither teachers nor students are required to download, encode, or otherwise edit the video before it can be used. The time and effort spent uploading video files are thereafter zeroed down, and more time can consequently be devoted to the learning of spotting, but also translating and revising, as this feature is present in the Translate and Review tools as well.

Once the task is completed, users can run a series of semi-automated checks to correct any punctuation issues, highlight potential blank spaces and empty subtitles, call attention to any timing or reading speed violations, and warn against potential typos and spelling mistakes (Section 3.5.3).

During the text-timing process, any temporal or spatial discrepancies with the pre-defined parameters set for the project are marked in red and flagged, so that they

can be addressed and amended on the go (Section 3.5.3). In short, the Create and Create Pro tools can be used to produce templates but also to cue and translate, particularly in the case of small projects. The output can be saved as a project (.json), thus retaining more information than a simple subtitle text file, such as spatial and temporal parameters and settings, colours and also the URL link to the video, which is most fruitful when preparing exams and tests that all students have to take. This type of file, can be uploaded by other users, allows the creator of a project to share it with other colleagues. As it stands, the tool does not allow to share a project with other uses within the tool, nonetheless. Alternatively, the material can be downloaded as a subtitle file (e.g. .srt), which in essence contains the timecodes and the text, and can then be used in any other subtitling editors. The tool creates .ooona subtitle files and allows for conversion into a variety of different formats, including .dfxp, .fcpxml, .pac, .rtf, .srt, .stl, .txt, .xml, and .vtt.

3.5.2. Translate Pro

The Translate Pro tool has been conceived to translate pre-timed subtitle templates into another language. Its interface, as shown in Figure 3.11, is very similar to the previous tool, except that the text editor contains two different columns (A), one for the source text and another one for the target text. By no means can the source text be edited, or the timecodes be altered, though the project settings can be readjusted to suit the needs of the target subtitles.

The video player remains in the same place (B) and is operated using the same media bar. The timeline (C), situated at the bottom of the screen, displays both the source (grey) and target (blue) timed text in the form of juxtaposed boxes. Upon creation of a project, both subtitle boxes will coincide, but the translator may decide to readjust the target subtitle boxes so as to better accommodate the translation.

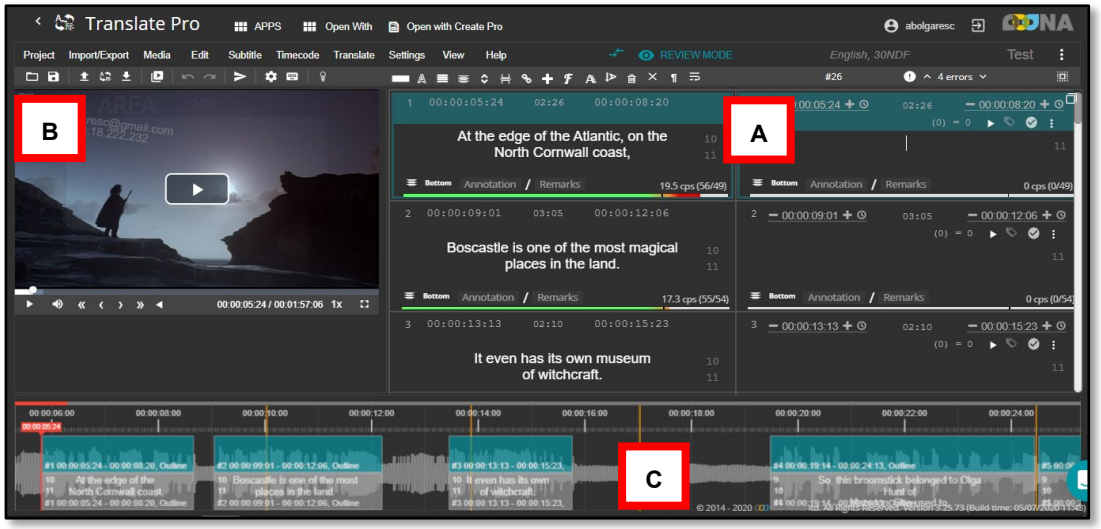

Figure 3.11. Translate Pro tool

Only target subtitles can be shortened or enlarged, or dragged from right to left, and vice versa, whenever timecodes have not been locked in the project settings. If target-subtitle boxes are relocated in the timeline, timing changes are instantly reflected on the right-hand side editor. The trainer may prefer to lock timecodes so that a greater emphasis is put on reduction strategies and do not become too distracted with timing issues. Students can also manipulate the timecodes so that they better adapt to the conventions and linguistic needs of their target language.

In the text editor, the translation is inserted in the right-hand columns, as illustrated in Figure 3.12. Subtitle boxes include the display rate of both the source and the target text, as well as a warning for any errors present in the subtitles. In the below examples, both subtitles' display rates are too high, and the first line of the second subtitle contains too many characters, as duly warned by the red highlight and the red alert round icon.

Figure 3.12. Translate Pro source-text and target-text boxes

Similarly to the Create Pro tool, users can run a series of semi-automated checks and finally save the project online or export and download it as .json, to store it in their devices and share it with other people. Alternatively, the subtitle file can be exported in the preferred format so that it can be opened in other editing tools.

3.5.3. Review Pro

The Review Pro tool is used to revise the subtitles produced by other subtitlers. The interface is very similar to the previous tools (Figure 3.13).

As with the Translate tool, the text editor is broken down into two columns (A); in this case, however, the right-hand column is used to annotate any changes to the translation, which is displayed on the left-hand side. This view can be customised so as to have only one column, as well as to show only those subtitles that have been edited. Ideally, the user should be able to see three columns, i.e. source text, translated text, and revised text, although this view is not available yet. As with the Create Pro and Translate Pro tools, the user will also receive automatic error alerts (D).

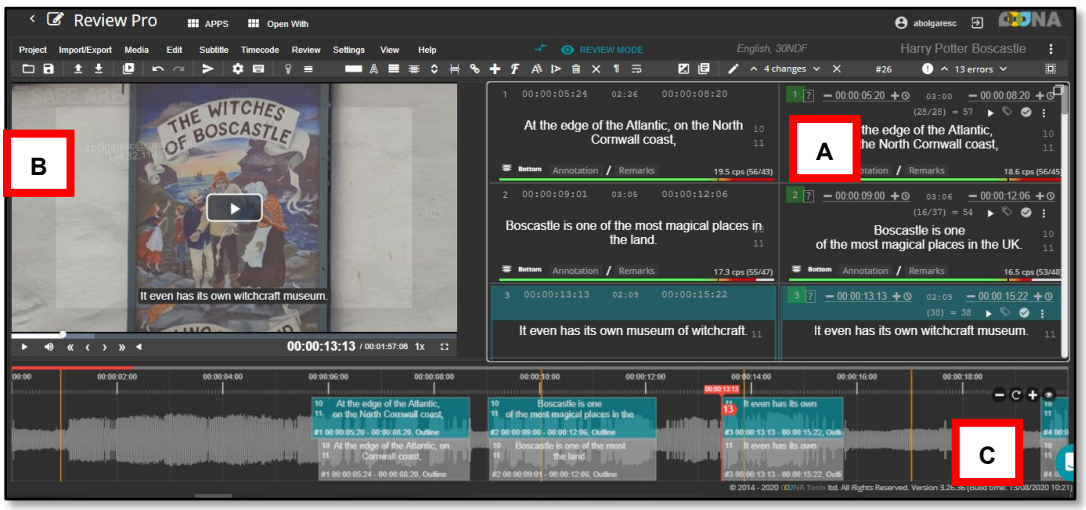

Figure 3.13. Review tool

All changes are tracked by the tool and can then be consulted in the pop-up changes summary window, as illustrated in Figure 3.14. The tool tracks any deletions in red (A) and any additions in green (B). When lines are broken differently and any words are replaced with others, changes are also highlighted

in red and green (B). Newly added subtitles are fully highlighted in green (C), whereas those that have been removed are fully highlighted in red (C). Timing changes are displayed on the left-hand side, where the red highlight shows the former timecode and the green highlight shows the new timecode (D). Newly added subtitles have the in and out timecodes fully highlighted in green (E).

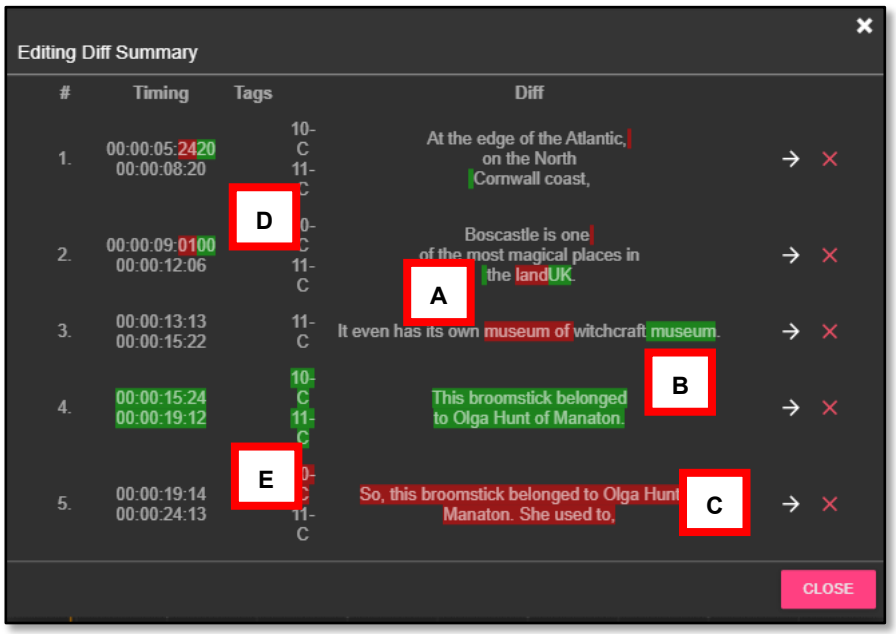

Figure 3.14. Review tool's editing summary

One of the main advantages of Review Pro is the fact that the user can include annotations and remarks at the bottom of each subtitle (Figure 3.15). Remarks are internal notes for the next person working on the project, whereas annotations are mainly used in subtitle template creation to help translators understand certain linguistic features therein. Both can be transferred from the previous Create Pro or Translate Pro tools in the project file (i.e. translator's notes) or can be created from scratch for the attention of other project members (i.e. reviewer's notes). From a pedagogical perspective, the possibility of including comments within the same interface opens up a myriad of possibilities in terms of feedback provision for students and teachers alike.

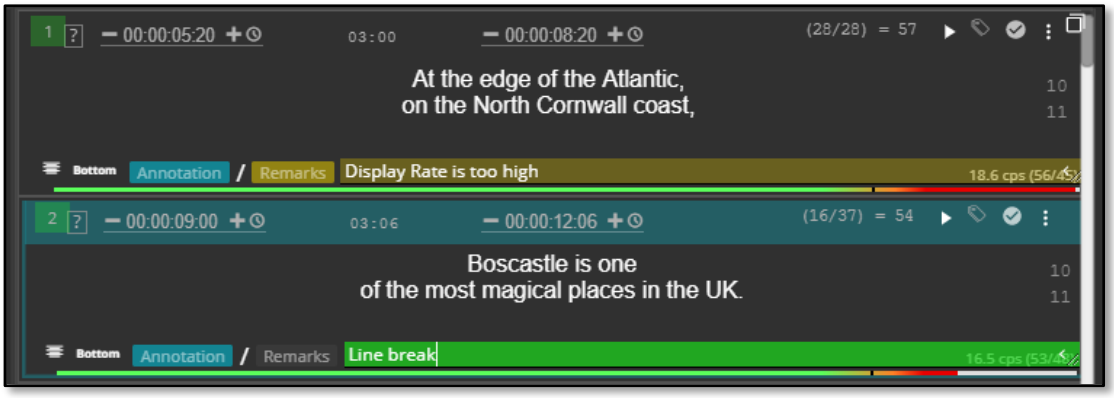

Figure 3.15. Review tool's text editor containing annotations and remarks

As a downside, the editing summary does not reflect real line breaks, which could end up being confusing to the user, and cannot be downloaded in editable format either. Instead, the reviewing project can be exported and downloaded as a text document; however, tracked changes or subtitle formatting are not kept in mainstream text editors, such as Microsoft Word, which instead show a table containing a column for the original subtitles and another one for the revised ones as illustrated in Figure 3.16:

#	Timing	Original Text	Reviewed Text
1	00:00:05:20 - 00:00:08:20	At the edge of the Atlantic, on the North Cornwall coast,	At the edge of the Atlantic, on the North Cornwall coast,
2	00:00:09:00 - 00:00:12:06	Boscastle is one of the most magical places in the land.	Boscastle is one of the most magical places in the UK.
3	00:00:13:13 - 00:00:15:22	It even has its own museum of witchcraft.	It even has its own witchcraft museum.
4	00:00:15:24 - 00:00:19:12		This broomstick belonged to Olga Hunt of Manaton.
5	00:00:19:14 - 00:00:24:13	So, this broomstick belonged to Olga Hunt of Manaton. She used to,	

Figure 3.16. Downloadable text document containing editing summary

From a didactic perspective, teachers can use this tool to assess their students' work, so that they can receive the corrections alongside written feedback in the form of annotations or comments in each subtitle.

Students can greatly benefit from having both files simultaneously displayed to review the work of other students. They can also use it to see what other students, or teachers, think of their translation. The tool can be exploited from many more angles by students and teachers alike to check their own work and identify any linguistic or technical errors that might have gone unnoticed.

Students can be trained to observe, analyse, assess, correct, and comment on their peers' work in this tool. It can equally be used in the context of a project simulation activity in which the work is split among different project members, and students have to revise each other's work in order to achieve a finalised product.

3.5.4. Convert

The Convert tool (Figure 3.17) allows the user to import subtitles from a myriad of file formats and display the subtitles in the text editor (A):

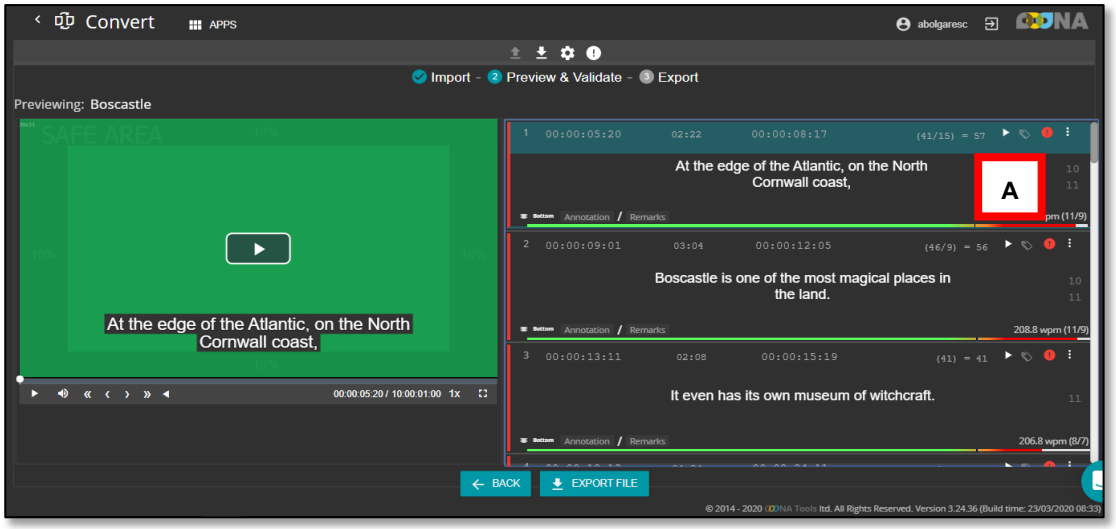

Figure 3.17. Convert tool

Conversely, as seen in Figure 3.18, subtitles can also be exported into manifold subtitle file formats (A),[7] whose settings can also be customised within the tool (B) to, say, keep positioning and layout in certain formats:

[7] The list of compatible formats is found here: https://ooona.ooonatools.tv/Pages/Formats.

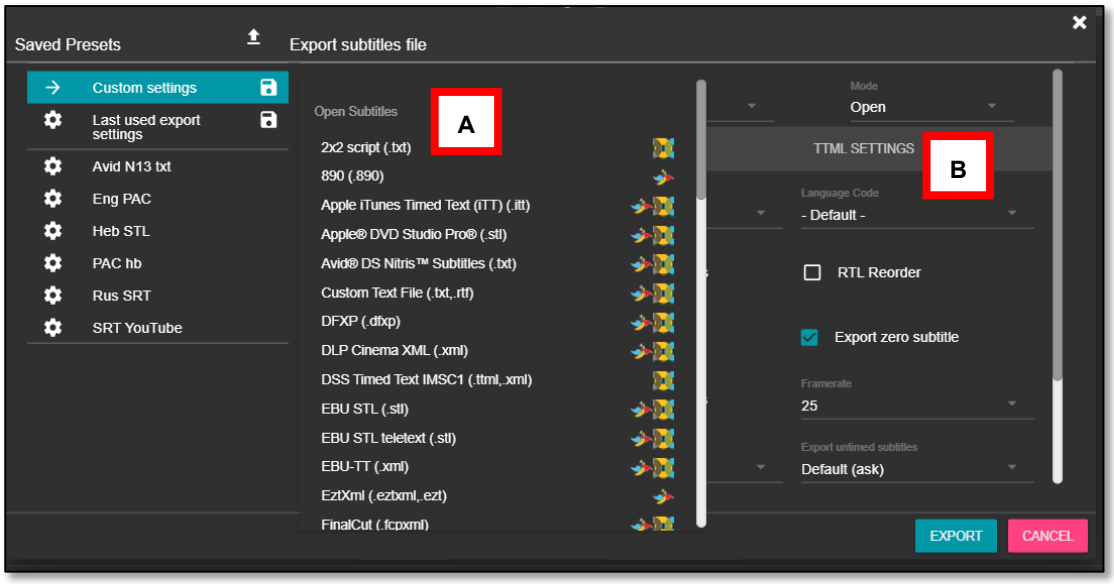

Figure 3.18. Export subtitle file menu

3.5.5. Burn and Encode

The Burn and Encode tool (Figure 3.19) allows the user to create a new video clip with subtitles embedded electronically:

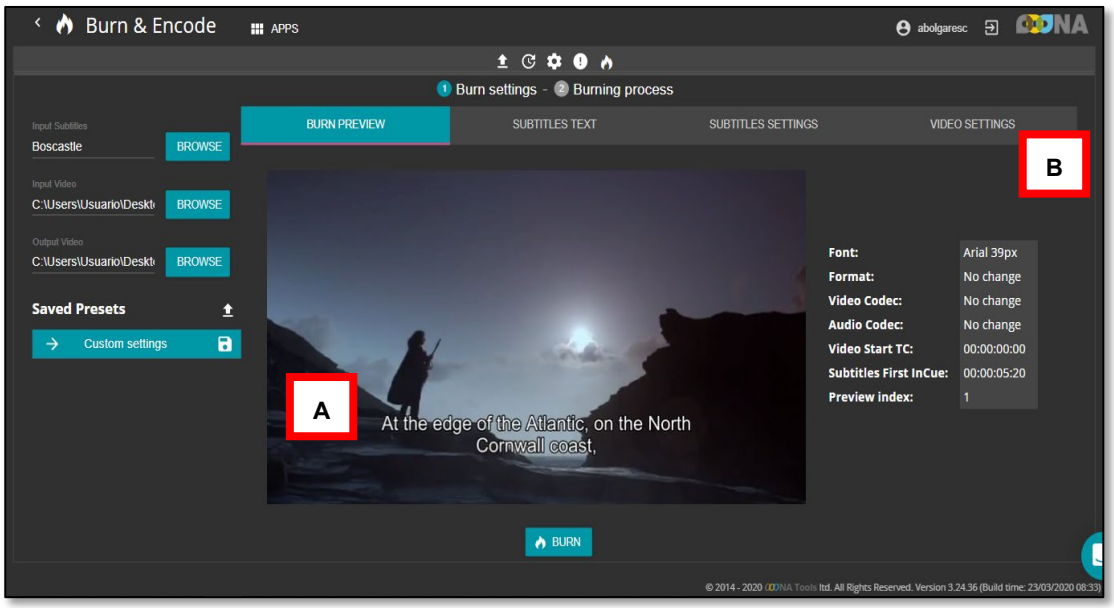

Figure 3.19. Burn and Encode interface

To hardcode the subtitles onto the video, the separate desktop-based plugin OOONA Agent is currently required. Although the subtitles can be customised in terms of outlook (size, safe area, font), they cannot be textually edited at this

stage, making it essential to choose the right file format so that aspects like italics, position, and colours are maintained as intended. The built-in error check function, which will be further examined in the next section, is also active in this tool in the form of a pop-up list. The tool, however, does not allow the user to edit the subtitles, so the file needs to be opened separately and imported again once the errors have been amended. An added function is that users can also encode a clip in a different video format or fps rate.

This tool, still missing in most free and paid subtitling systems, is pedagogically impelling as it allows students to produce a tangible output of their labour. Once the subtitle file is considered final, students can produce a video with embedded subtitles that they can then view using a video player of their choice and share with their friends and fellows.

3.5.6. Tool Switcher

By clicking on 'Open With' (Figure 3.20), at the top of the screen, any subtitle file can be automatically transferred to another tool of the user's choice. This can be particularly useful when a master template needs to be created in the original language to then be subsequently translated into several languages all by keeping both files separately.

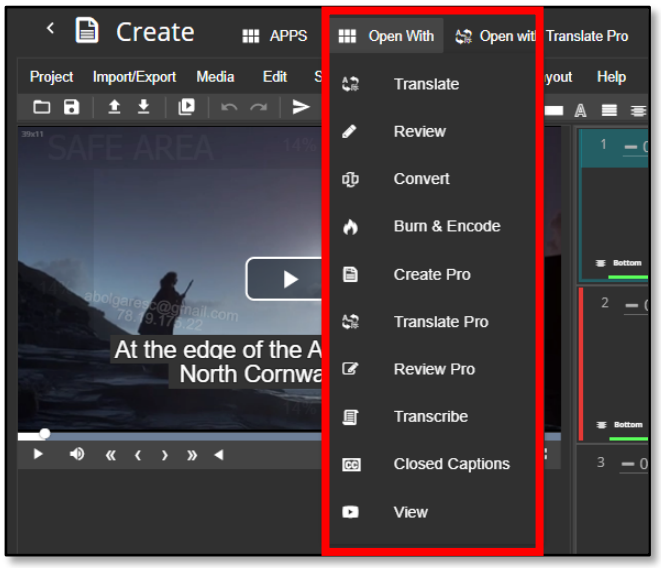

Figure 3.20. Switching between tools

This guarantees not only a leaner transition between subtitling phases (e.g. from spotting to translation and onto conversion and encoding) but also a more efficient workflow on the whole insofar as the user does not have to constantly export and import subtitle files from one application to the next. Instead, the tool switcher transfer a batch file containing all project-related data – i.e. video clip, subtitle file, properties – and prompts the user to start the next task without the need to download any files, thus keeping the necessary data solely on the cloud. Once the user has switched tools, say from Create Pro to Translate Pro, the project disappears from the former tool (i.e. text timing) and is transferred, in its entirety, to the next one (i.e. template translation). The user can still export the source file, say the master template, at any point, nonetheless.

3.5.7. Error Checks

As mentioned in Section 2.5.2, most subtitling software packages are manufactured with technical, linguistic, and format error recognition functionalities. OOONA Tools is no exception and includes an error-checking component that can be used across all tools to enhance automation whilst identifying and amending text-timing-, translation- or language-related errors.

Once the properties have been set, the subtitler will receive automatic alerts in the form of colours and signs. While a spellcheck functionality is available in the Create Pro, Translate Pro, and Review Pro, the standard tools do not incorporate a built-in spellcheck; instead, the software developers recommend that users enable a spellcheck extension or plugin in their browsers.

In Figure 3.21, subtitles 6 and 7 contain various technical errors, of which the subtitler is notified in a number of ways: firstly, all characters and words exceeding the maximum number of cpl are displayed in red (A); secondly, the subtitle box that contains errors automatically becomes red in the timeline (B); thirdly, a red alter round icon  appears at the top right-hand side of the subtitle (C), thus replacing the former grey tick sign  . Fourthly, the top bar displays

the total number of errors present in the subtitle file (D), allowing the user to jump from one to the next.

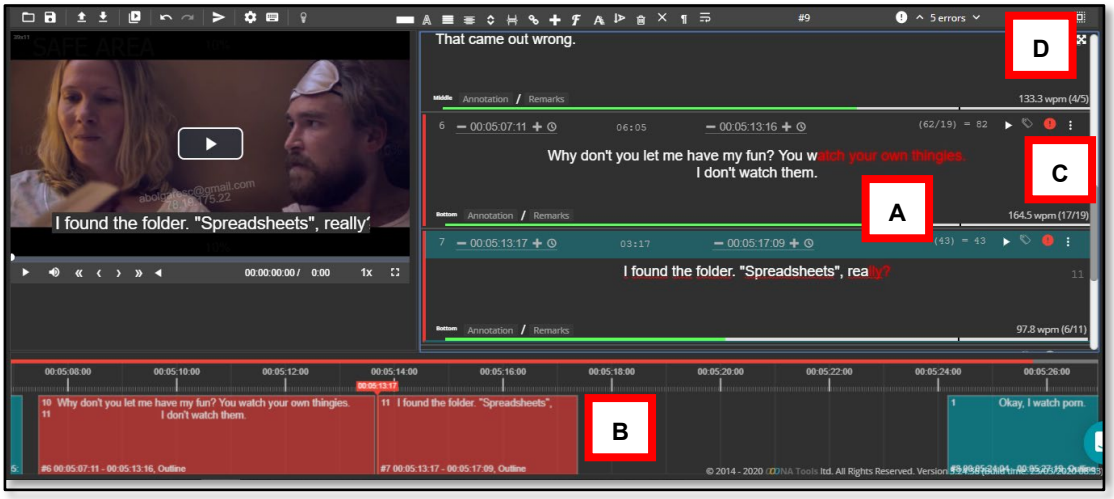

Figure 3.21. Error alerts

At times, the nature of each error may not be easy to recognise at first glance. In such scenarios, the user can drag the pointer to the icon  , so that the error view display is unfolded as seen in Figure 3.22 below:

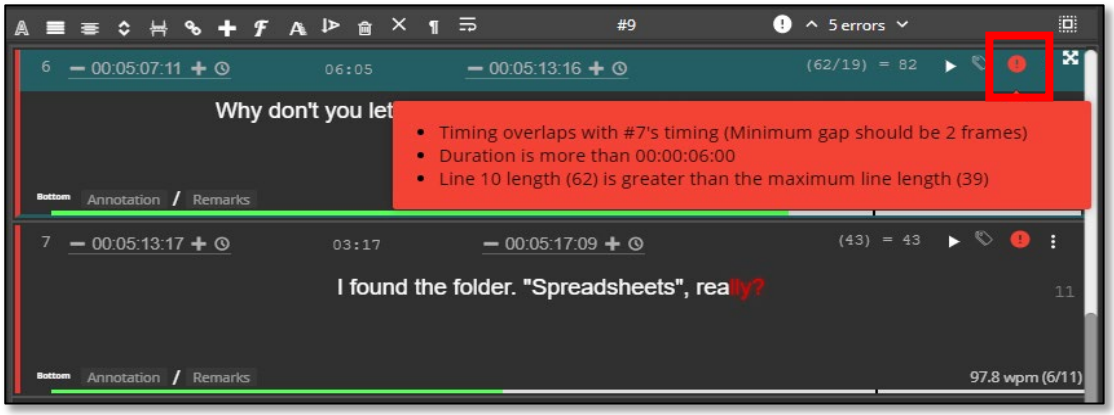

Figure 3.22. Error view display

Each error is verbally explained in the form of a bullet point, signposting the user to the source of the problem and fleshing out the reasons why certain lines or subtitles do not comply with the properties. Drawing on the properties originally set up, the system warns users that a character limitation error has occurred by displaying, in red colour, all characters that exceed the threshold. The coloured

bar at the bottom of each subtitle stands for its reading speed, which contains a black line to indicate the ideal length and turns from green (within the threshold) to yellow, orange, and red (beyond the threshold).

Between the main menu bar and the video display and subtitle boxes there is a grey-shadowed menu, in which a similar warning sign is displayed. By toggling this sign, the user can easily jump to the different errors that are present in their template (Figure 3.23) and edit the contents of the subtitle boxes manually:

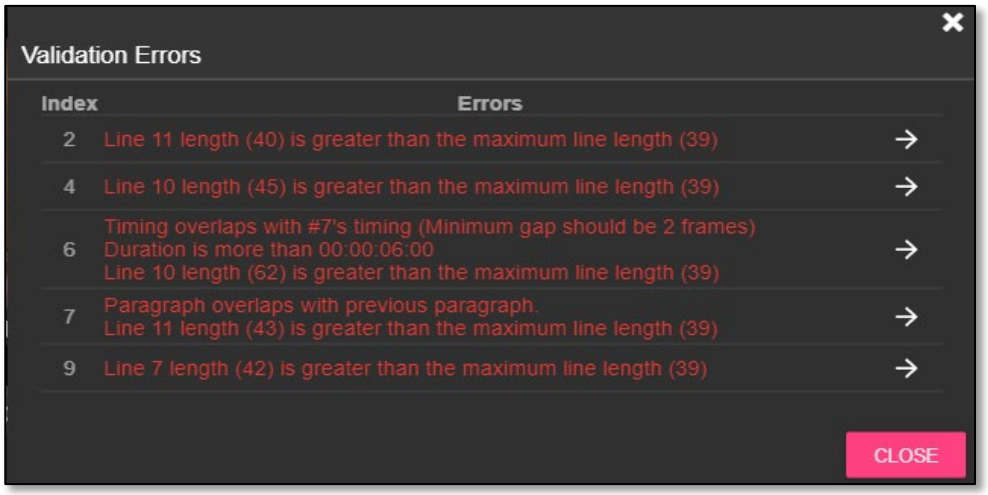

Figure 3.23. OOONA Tools subtitle checks window

Of greater interest, perhaps, are the customisable subtitle checks available in the Create Pro, Translate Pro, and Review Pro tools (Figure 3.24), which allow users to include or exclude common subtitling errors categorised under four main categories: text, technical, styling, and punctuation. Examples of such errors are single word lines, minimum gap abuses, blank spaces, empty lines and subtitles, and time overlaps, to name but a few. In this menu, the user can tick or untick each box, which also includes brief explanations when dragging the mouse on each of them. The ticked elements will be activated in the automatic error checks run by OOONA Tools, which will then alert the user of any divergence present in the template (including an explanation of each error), thereafter allowing the user to fix them automatically or manually.

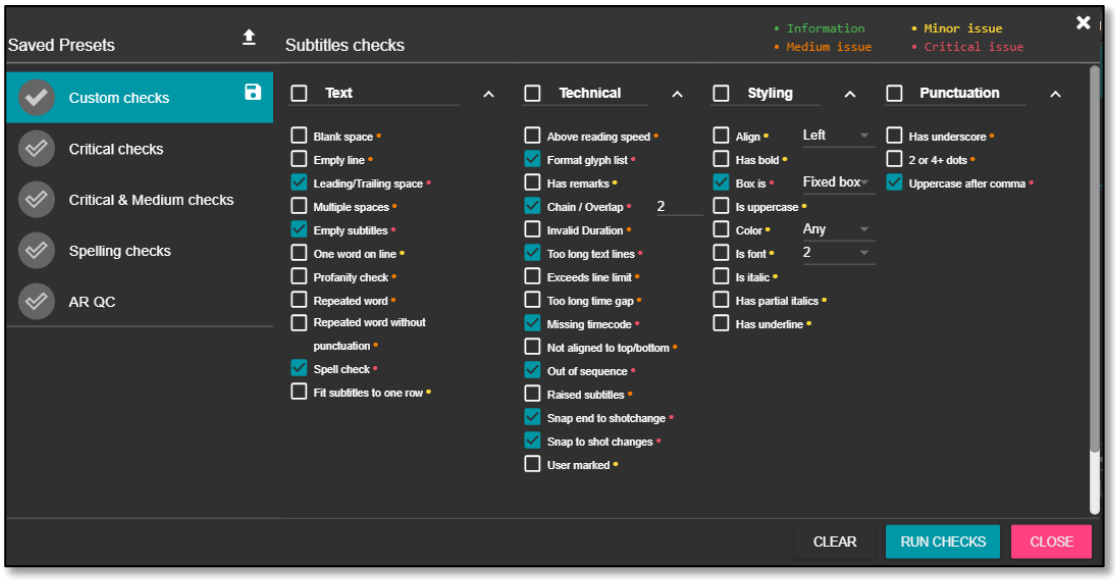

Figure 3.24. OOONA Tools pop-up window to customise subtitle checks

As previously mentioned, OOONA Tools also allows the user to include annotations and remarks in the subtitle files for cross-referencing purposes in team projects.

Embedding further QC tools, be they automated or no, in new AVT technologies is of capital importance to guarantee high-quality standards. AVT being a discipline continuously affected by the latest technological developments, it seems hence imperative that further efforts are made in educational settings, too. Overall, further empirical research is needed to explore the ways in which QC may be best integrated in the teaching and learning of AVT.

3.5.8. Overall Evaluation of OOONA Tools

Little research has been conducted on the quality of cloud-based subtitling tools and what is available tend to be technical reviews found in professional circles, such as Fernández-Moriano (2019) and Salotti (2019).

According to Fernández-Moriano (2019), the efficiency of a specific subtitling system ought to be measured depending on how well it enables users to carry out all processes involved in the subtitling of a video, from initial transcription to final distribution. He offers a comprehensive list of features that should be

examined, including reading speed control; shot change control; frame-by-frame video and time-code handling; styling and formatting options such as the use of italics, positioning, and colour customisation; frame rate support; error checking; and keyboard shortcut customisation, among others. In his brief analysis of cloud-based subtitling solutions, he summarises their advantages and disadvantages as follows:

> **Pros:** There is no need to install software locally. You can work anywhere or from any computer. Some platforms offer clients better control on materials and processes. **Cons:** There is still much room for improvement in the free subtitling platforms, and there is not one single free option that covers all subtitling stages; Ooona does. They require an uninterrupted internet connection, with good download and upload speed. Privacy issues might arise with some clients for storing their material on a cloud service they cannot control (ibid.:12).

Salotti (2019) emphasises the importance of the tool's user-friendliness and affordability as well as its customisability (e.g. keyboard shortcuts). In her opinion, OOONA Tools seems both productive and time efficient. However, there are some drawbacks and:

> security can be one of them. While Ooona Tools does not store your video files on their end, it does store your subtitle files. So users with strict non-disclosure and confidentiality agreements may need to make sure they don't violate terms when using this tool. All accounts are password protected with an optional two-factor authentication. Ooona Tools is ISO/IEC 27001:2013 certified and complies with the latest security techniques and information security management systems requirements. Stability can be another drawback in web-based apps, especially for those whose internet connection is patchy. The software does crash when there's an internet time-out. To try to counteract this, Ooona offers a built-in auto-save feature that may prevent major losses of your progress (ibid.:21).

In a previous unpublished research study (Bolaños-García-Escribano 2016), a brief product-quality analysis of OOONA Tools was carried out in accordance with BS ISO/IEC 205010:2011 and some of its parameters. A systematic approach was followed to cover most of the sub-characteristics of the product quality model, using sub-sections and bullet points. Attention should be drawn to the fact that, as an external user, sensitive data as well as official records of OOONA Tools could not be accessed. These results have now been revisited and updated to reflect some of the changes incorporated in the past four years.

The quality of a system or software is “the degree to which the system satisfies the stated and implied needs of its various stakeholders, and thus provides value” (BSI 2011:2), where the measured quality-related properties are defined in relation to the characteristics of the software. The BSI’s product-quality model (Figure 3.25) provides the means to carry out a descriptive analysis of the tool to better inform its potential uses and applications. More specifically, it enables the researcher to ascertain whether a software program is suitable, efficient, compatible, usable, reliable, secure, maintainable, and portable.

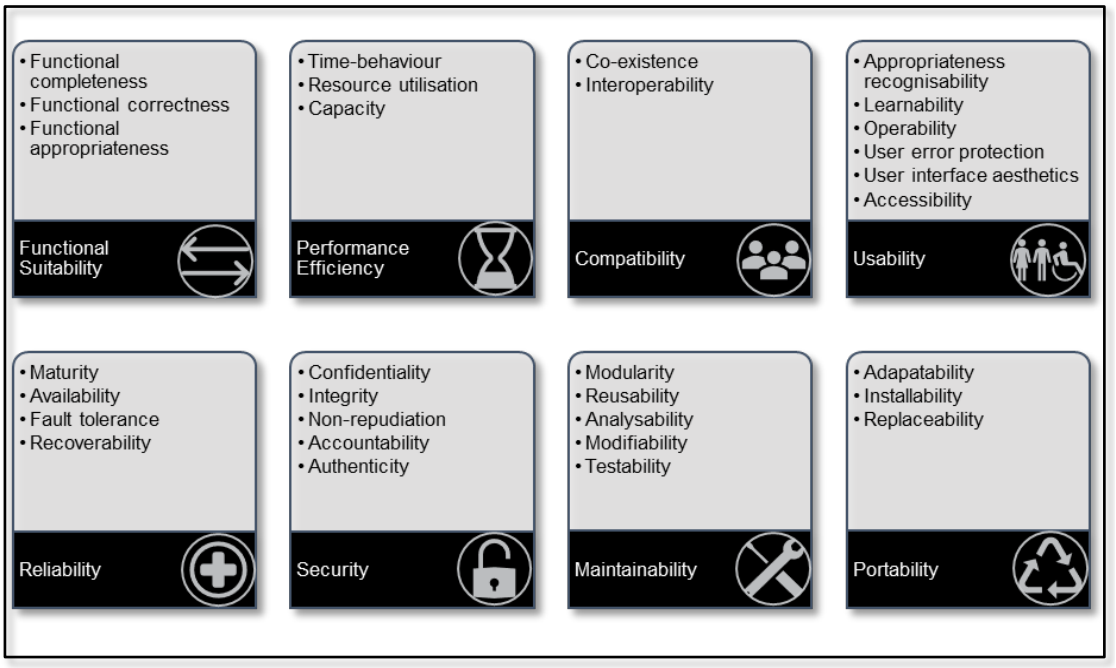

Figure 3.25. Diagram of BS ISO/IEC 205010:2011 parameters

The first parameter is functional suitability, which represents the degree to which OOONA Tools provides functions that meet stated and implied needs used under stated conditions. This parameter is measured through the following components:

- Functional completeness: it covers nine out of twelve specific subtitling phases and aims at satisfying subtitlers’ subtitling related needs, but some functionalities are missing (e.g. visualisation and online delivery);
- functional correctness: it provides the correct results, with the needed degree of precision, but these will also depend on the user’s experience; and

- functional appropriateness: the functions facilitate the accomplishment of specific subtitling phases and objectives, avoiding unnecessary steps (e.g. setup and manual configuration), but the interface does not change much for each task and it does not present specific information for each phase, as illustrated in BSI (2006).

The second parameter is performance efficiency, which refers to the amount of resources used by OOONA Tools under stated conditions. This parameter is measured through the following components:

- Time behaviour: launching of the tool and different applications depends on the user's broadband as well as internal resources (e.g. memory and processor). The uploading of video material is faster in the Create, Translate, and Review tools, as the Create Pro, Translate Pro, and Review Pro tools require an installable plugin called OOONA Agent; and
- resource utilisation: it uses both human and technical resources to operate, but the main technical requirements are having a wifi connection and an updated version of Google Chrome.

The third parameter is compatibility, which assesses the possibility of data exchange of the tool with other products, systems or components while sharing the same hardware or software environment and used under stated conditions. This parameter is measured through the following components:

- Co-existence: there does not seem to be any detrimental impact on any other product or software although some reports point to an exhaustive use of resources the tool needs to operate on Google Chrome; and
- interoperability: data can be exchanged with many systems, products, and components thanks to the file export and conversion functionalities, but no application programme interface seems to be in force yet, so applications are limited to the features included in the present version and cannot incorporate external tools.

The fifth parameter is reliability, which assesses the degree to which the tool performs specified functions under stated conditions for a specified period of time. The previous time period analysed corresponded approximately to April-August 2016 and, for this research, it is September 2016 to June 2020.[8] This parameter is measured through the following components:

- Maturity: it seems to meet the needs for reliability under normal operation;
- availability: it seems to be operational and accessible when required for use under normal operation;
- fault tolerance: it does not seem to operate as intended when a hardware or software fault is present, i.e. some browsers do not seem to be able to launch the application; and
- recoverability: in the event of an interruption or failure, it can recover the data directly affected and re-establish the desired state of the system by launching it again (data is constantly saved, not compromising translation projects in case of poor internet connection and now the system prompts the user to download the project file when internet access is negatively affected).

The seventh parameter is maintainability, which refers to the degree of effectiveness and efficiency with which a product or system can be modified by the intended maintainers. This parameter is measured through the following components:

- Modularity: the tool comprises of several applications, or modules, that are independent to each other but share a similar interface and components;
- reusability: several applications use the same assets, e.g. OOONA Agent, making them highly reusable;

[8] As stated in BSI (2011:297), “wear or aging does not occur in software. Limitations in reliability are due to faults in requirements, design, and implementation. Failures due to these faults depend on the way the software product is used and the program options selected rather than on elapsed time”.

- analysability: the company's mechanisms to diagnose deficiencies or failures are not disclosed to the public;
- modifiability: the modular nature of the tool makes it easily modifiable as proved by the various improvements made to the tool since it was first launched; and
- testability: it is relatively easy to create a specific list of criteria that the tool should meet to be well informed and useful for industry use.

Finally, the eight parameter is portability, which refers to the degree of effectiveness and efficiency with which the tool can be transferred from one hardware, software or other operational or usage environment to another. This parameter is measured through the following components:

- Adaptability: it can be used in different operating systems and environments, albeit only on one browser (Google Chrome);
- installability: the tool's applications cannot be installed, or thereafter uninstalled, because it operates solely in cloud environments, but the Pro versions require an external plugin (OOONA Agent) to be installed; and
- replaceability: it can be easily replaced with other desktop-based subtitling software (Screen Systems and Cavena continue to be their business partners as announced in their triparty agreement),[9] and more cloud-based subtitling solutions are available as vendors and LSPs have been developing cloud-based subtitling tools privately for a number of years now (e.g. ZOO's ZOOsubs, Undertext's Plint, Deluxe's Sfera, and Netflix' Subtitle Originator).

A visual summary of the above results can be seen in Table 3.3:

[9] See: https://subtitling.com/cavena-screen-and-ooona-sign-triparty-agreement.

PRODUCT-QUALITY PARAMETERS		
Parameter	**Sub-characteristic**	**Satisfaction**
Functional suitability	Functional completeness	Yes
	Functional correctness	Yes
	Functional appropriateness	Yes
Performance efficiency	Time behaviour	Yes
	Resource utilisation	Yes
	Capacity	n/a
Compatibility	Co-existence	Yes
	Interoperability	Yes
Usability	Appropriateness recognisability	n/a
	Learnability	n/a
	Operability	n/a
	User error protection	n/a
	User interface aesthetics	n/a
	Accessibility	n/a
Reliability	Maturity	Yes
	Availability	Yes
	Fault tolerance	n/a
	Recoverability	Yes
Security	Confidentiality	n/a
	Integrity	n/a
	Non-repudiation	n/a
	Accountability	n/a
	Authenticity	n/a
Maintainability	Modularity	Yes
	Reusability	Yes
	Analysability	n/a
	Modifiability	Yes
	Testability	Yes
Portability	Adaptability	Yes
	Installability	Yes
	Replaceability	Yes

Table 3.3. Summary of satisfaction of BS ISO/IEC 205010:2011 parameters

The usability parameter has not been analysed because it chiefly requires a specified context of use for the effectiveness, efficiency, and satisfaction of the tool to be assessed. The tool's usability needs to be tested by applying tailor-made user-experience research methods, paying particular attention to how the software caters for the needs of people with a particular range of characteristics and capabilities in a given setting. The experiments in AR cycles 2 and 3 (Section 5.2.2) helped us to have a better understanding of the usability of OOONA Tools in those contexts. Moreover, the results have informed subsequent changes made to the existing tool to make it more easily usable, accessible, and practical.

The security parameter requires access to the architecture of the company's cloud tools, which is not open to the public. Following a recent update of their website, they claim to offer a cloud that is reliable and secure – ISO 27001 certified – as well as high-performing and instantly scalable. The maintainability parameter examines how changes can be done to specific components, or assets, of the software and their impact on other components. As OOONA have recently launched an educational version of the tool, future research should focus on identifying which changes have been implemented and how they may have affected the cloud structure. However, a study of this nature ought to be done from an insider's perspective (i.e. within the company).

All in all, the tool seems to be fit-for-purpose as concerns text timing, origination, and QC for subtitling and captioning projects. It stands out among other subtitling software programs for being a pay-per-use, cloud based tool that is open to all users. Moreover, the modularity and online nature of the tool offer a working ecosystem that allows users to efficiently work in today's subtitling industry.

Several caveats have been mentioned previously, such as the fact that tracked changes cannot be exported as well as the limitations posed by the .json project files. Another drawback that compromises its cloud-based nature is the need to locally install a separate plugin, i.e. OOONA Agent, so that the user can work with some of the applications. This plugin is necessary to create soundwaves and shot cuts as well as to burn and encode videos. Ideally, all tasks ought to be carried out online and a future platform should bear this in mind (Section 6.4).

As discussed, the AVT industry has steadily shifted towards online working environments, thus embracing cloud technologies for the localisation of audiovisual programmes. It then follows that for HE programmes of study to continue to be responsive to industry needs they should also embrace the cloud. The experiments' findings (Sections 6.2 and 6.3) support the introduction of proposals to improve these professional tools so that they can be embedded into a dedicated learning platform.

CHAPTER 4

CURRENT TRENDS IN (AUDIOVISUAL) TRANSLATION EDUCATION

Translation didactics, the pedagogy of translation (Kelly 2019) or the more commonly used translator training (Kelly 2003) and translator education (Way 2020), is an area of research that examines how translation can be taught and has its theoretical foundations in the intersection between didactics and translation theory (la Rocca 2007). Irrespective of the terminological variance, it can be assumed that:

> the aim of the teaching and learning process is to encourage intersubjective communication in a positive atmosphere, mainly through team work, to acquire linguistic, encyclopedic, transfer and professional competence and to learn to learn [sic] about translation. (González-Davies 2004:14)

Pym (2012) establishes a fruitful distinction between translator training, associated with the (mostly linguistic) skills that are required from translators-to-be to produce an acceptable translation, and translator education, recognising the need for students to acquire a wider range of interpersonal skills and attitudes. Whereas the former is often linked with translation competence, the latter is aligned with translator competence. As further explained by Kelly (2019:158), "translator training may be considered the preferred term, although again those closest to the socio-constructivist school of thought prefer translator education, since training is seen as a transmissionist approach, centred on the teacher and leaving only a passive role for the learner." As further clarified by Way (2020:181), "training is the process of accumulating chunks of knowledge in a specific field (such as language learning), whereas education has a much wider scope."

This terminological conundrum is nurtured by a conceptual schism in the TS community as to how teaching translation to translators-to-be is conceived. On the one hand, some scholars defend that teaching translation serves "to prepare our graduates to enter the professional market" (Way 2008:89), hence putting a

clear emphasis on training students with a preconceived or preordained conception of what their prospective career will look like, and ultimately defending the use of the term translator training as well as advocating a profession-bound pathway of the curriculum. On the other hand, some scholars defend that teaching translation means to "train, teach or otherwise to facilitate the education of *students* of translation" (Kearns 2008:207), thus highlighting the importance of training students with an open-minded attitude towards their prospective careers, and ultimately defending the use of the term translator education as well as advocating a vocational and humanistic nature of the curriculum. There is a wide variety of opinions on this matter and the landscape is, therefore, far from being homogenous or even holistically definable (Pym 2000). The current trend, however, is to revert to using "translator education" in HE settings (Way 2020).

The development of research in this field is nothing but the direct consequence of a rapid expansion of T&I undergraduate and postgraduate programmes that has taken place in recent decades worldwide. According to the last report provided by the Translator Training Observatory, formerly provided by the Intercultural Studies Group of the University Rovira i Virgili, Spain, in conjunction with the European Society for Translation Studies (EST) and the International Federation of Translators (FIT), there were over 350 courses on T&I, spread across 67 countries and 433 institutions (Way 2020). The translator training landscape has emerged and overgrown in recent years, particularly in countries where TS has already achieved a firm institutional basis, such as Canada, China, the UK, and Spain. In this respect, Venuti (2017:1) foregrounds that:

> the emergence of the field has coincided with the gradual development of a fairly standard curriculum for teaching translation studies, especially at the master's level, where students are trained to enter the job market as translators or to proceed to doctoral research and academic careers. […] The concepts tend to be derived from varieties of linguistics, from literary and cultural studies, and from sociology; the skills are often taught in relation to specific genres or text types (legal, medical, commercial, literary, and so forth) and according to language pairs (i.e. an assortment of source and translating languages that often reflect the location of the institution).

These rapid developments can also cause institutional antinomies: firstly, teaching staff are sometimes neither professional translators nor academics

conducting research in TS; secondly, certain specialisations such as CAT tools and AVT require the use of cutting-edge technologies, installations and resources that many academic institutions cannot afford to buy or to keep up; and thirdly, it can be challenging to find educators with the right technological expertise. In relation to this booming of translation programmes, Pym (2012:478) observes that:

> it would be rash to assume that training programmes have developed in direct response to social demands for translators. In many cases youth unemployment has also played a role, creating student demand for vocationally oriented instruction programmes even in the absence of rising market demands for well-paid fulltime translators and interpreters. Another stakeholder in training programmes can be the education system itself. In situations where tenured staff in departments of languages other than English are losing students, translation programmes can provide continued employment for those teachers to the extent that translation students are required to develop more than one foreign language.

The study of pedagogy in translation seems to have been considered "the Cinderella of the academic world across disciplines and traditions" (Kelly and Way 2007:5), leading to false assumptions of a supposed lack of scientific rigour and integrity. Pedagogy is often disregarded as a subsidiary dimension that fails to build a sufficient body of research studies, although there is ample evidence that TS scholars have traditionally utilised didactic approaches and academic resources in their study of different types of translation, including AVT (Díaz-Cintas 2008*c*).

Consideration should be given to the fact that AVT has traditionally been taught as part of specialised study programmes, usually at postgraduate level, though many undergraduate programmes have started including AVT-specific modules in recent years. The mushrooming of AVT-specific master's degrees offered throughout Europe is somehow exemplary of the current needs and directions of the translation industry, though it may also point to a lack of solid training in AVT at undergraduate levels of study (Section 4.5).

4.1. Learning and Teaching Approaches in Higher Education

Education scholarship has grown by leaps and bounds since the appearance of pioneering publications such as Hilgard (1948). Following Millwood (2013), learning/teaching theories have traditionally been attached to concrete scientific disciplines, such as Education, Linguistics, Psychology, and Philosophy. In general terms, learning theories and approaches are classified within three broad categories: behavioural, cognitive, and constructivist. Whereas the first of them was developed by Skinner (1938, 1948, 1957), the father of operant conditioning, the second is attributed to Piaget (1936/1952), pioneer of genetic epistemology, and the third was initiated by Vygotsky (1930–34/1980), believed to have inspired Piaget's cognitive constructivist theory (Sjøberg 2007). The main learning/teaching approaches that have traditionally being implemented, studied, and revisited in HE lie under the umbrella of constructivism, which can take several forms – i.e. individual, social, cognitive, and postmodern – although all of them:

> emphasise that the learners construct knowledge with their own activities, building on what they already know. Teaching is not a matter of transmitting but of engaging students in active learning, building their knowledge in terms of what they already understand. (Biggs and Tang 1992/2011:21)

Nowadays, the main trend in academic institutions is the application of an outcomes-based education (OBE) scheme, "a convenient and practical way of maintaining standards and of improving teaching" (Biggs and Tang 1992/2011:5) within the credit transfer curriculum paradigm. Such an approach contributes to benchmarking and increasing accountability in the new agenda of universities, i.e. market-oriented and corporatised public institutions in which chancellors and provosts sell educational packages in exchange for tuition fees. Marketisation of university education aside, OBE is supposed to be a powerful resource for evaluating the quality of the learning/teaching outcomes at training institutions.[10] OBE is rooted in the principles of constructive alignment, which posits that

[10] Learning outcomes are "statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence" (European Commission 2008:11).

students ought to be made aware of the intended learning outcomes before the teaching takes places so as to optimise their chances of achieving those outcomes through engagement. Furthermore, assessment tasks need to be designed to enable clear judgments as to how well those outcomes are understood to have been attained (Biggs 2014). This teaching approach consists of setting aims and learning outcomes that students apprehend as tangible goals, thus eliminating guesswork so as "to ensure that students are not mislead, and to make the learning and assessment process as transparent to them as possible" (Morss and Murray 2005:21). This underlying principle has vastly influenced contemporary approaches to curriculum design (Section 4.5.2), highlighting that the teaching methods and assessment tasks need to align with the intended learning outcomes.

Education quality is evaluated differently in each institution, which makes ascertaining the parameters that apply on each occasion a rather complex task. The following list, albeit not exhaustive, builds on Gibbs's (2010) work and aims to cover the main aspects that have an impact on education as a system: infrastructure, funding, student-staff ratio, quality of teaching staff and students, class composition and contact hours, quality of teaching, research environment, level of intellectual challenge, formative assessment and feedback, reputation and peer ratings, student support, student performance and degree qualification, student retention and persistence, and employability.

Current student-centred trends impose the application of a framework in which students engage more actively and are placed at the core of the learning process and critical inquiry. Teachers are meant to perform close supervision and examination, monitoring the student's progress in terms of aims and learning outcomes satisfaction, and providing them with the resources necessary to build their own knowledge progressively.[11] Support for students can be offered at different levels and stages, as well as in many different forms: financial

[11] Knowledge is "the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study" (European Commission 2008:11).

assistance, psychological services, pastoral care, careers advice, and other types of academic support from personal tutors, course and module convenors, student representatives, as well as alumni networks. From this perspective, teaching staff represent only one of the many support resources and agents that should be available for students at academic institutions.

According to Biggs and Tang (1992/2011), there are two levels of learning/teaching , namely effective (or deep) and surface, depending on the level achieved by the learning activities proposed for the intended learning outcomes. Following the former approach, teachers are required to discard inappropriate methods and encouraged to use high-level learning activities. Another key for successful deep teaching rests on teachers' self-evaluation and reflection, that is, their taking stock of commonly used practices and their effects on the learners' progression. Reflective practices within the framework of learning/teaching theories can be directed as AR or learning, which is described by Biggs and Tang (ibid.:43) as follows:

> [it] involves changing teaching systematically, using whatever on-the-ground evidence that you can that the changes are in the right direction, that your students are now learning better that they used to. The target of action research is the teaching of the individual teacher herself or himself. The 'learning' in action learning refers not only to student learning, or even to learning about teaching, but to learning about oneself as a teacher and learning how to use reflection to become a better teacher. Learning new techniques for teaching is like the fish that provides a meal today; reflective practice is the net that provides meals for the rest of your life.

Figure 4.1 below illustrates how teaching activities are intertwined with the assessment tasks in order to ensure the achievement of the intended goals and learning:

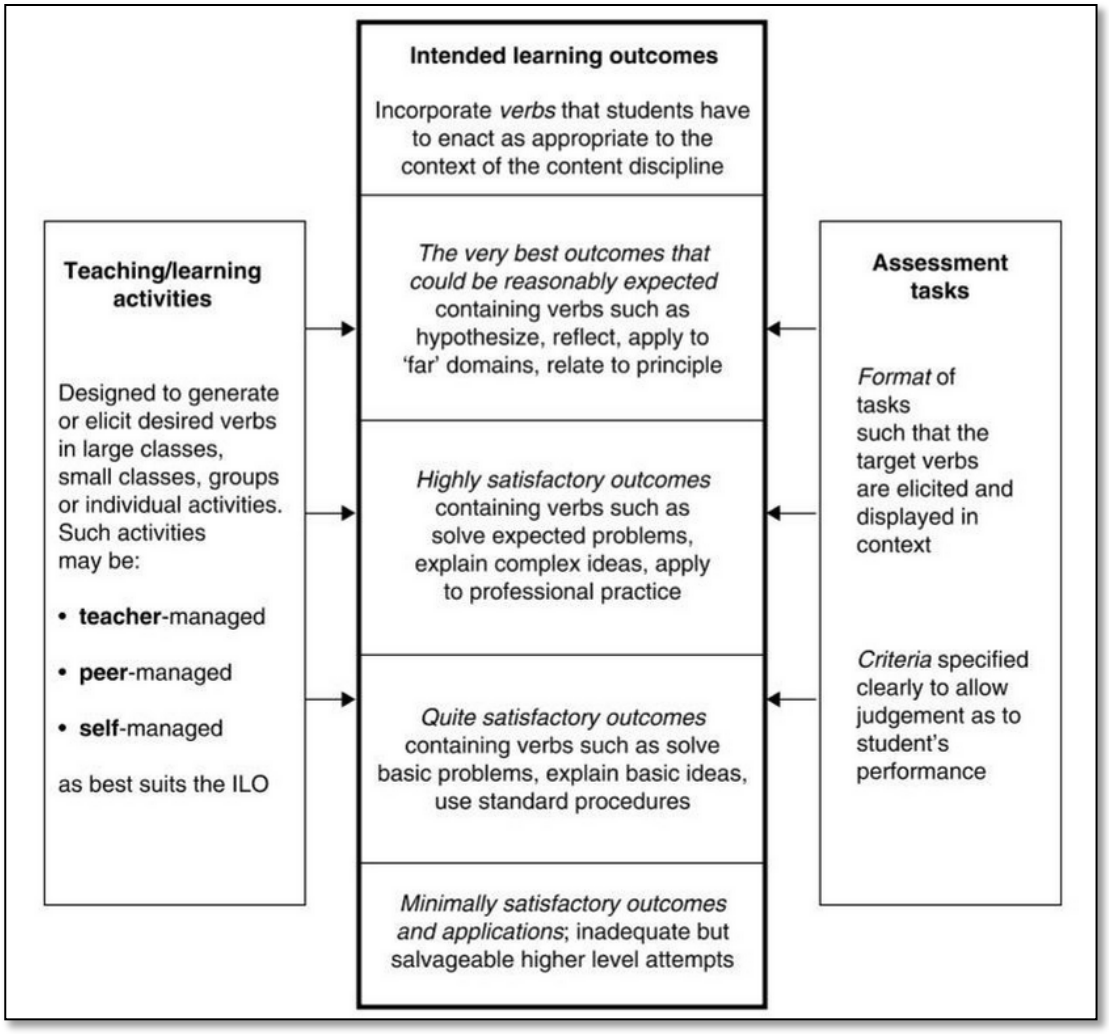

Figure 4.1. Alignment of learning and assessment (Biggs and Tang 1992/2011:59)

While activities should be designed in accordance with the intended learning outcomes, the learning process is achieved through the successful completion of assessment tasks. The degree to which the learning outcomes are proved to be reached establishes the degree of satisfaction and appropriateness of the activities. In this training scenario, teachers are to be considered facilitators, providing the students with the right resources and tasks, as well as monitoring their engagement throughout the learning process.

4.2. Translator Education and Training Theories

The first explorations in this field focused on the curricular content of translator training programmes, shifted to teaching methodologies and, currently, focus on ascertaining how students learn to translate (Kelly and Way 2007). Publications

on translator training and the didactics of TS have grown in number since the 1960s, with the appearance of some seminal works such as Delisle (1980), Nord (1988), Kussmaul (1995), Kiraly (1995), Gile (1995/2009), Robinson (1997/2005), Hurtado-Albir (1999), Kiraly (2000), González-Davies (2004), and Kelly (2005).

From a thematic point of view, Kelly's (2005) manual offers a comprehensive summary of the major approaches to translator training, namely early training, teaching objectives-centred (Delisle 1993), profession-based learner-centred (Nord 1988, 1991/2005), process-centred (Gile 1995/2009), cognitive and psycholinguistic research-based (Kiraly 1995), project-based or situational (Gouadec 1994; Vienne 1994), task-based (Hurtado-Albir 1999; González-Davies 2004), and socioconstructivist (Kiraly 2000).

The three major approaches considered in this thesis – project-based or situational, task-based and socioconstructivist – have been selected because of their inner characteristics and their immediate applicability to the didactics of AVT. In this respect, it can be argued that the skills needed to translate audiovisual and multimedia content may be easily acquired when exposed to semi-real and quasi-professional tasks, as well as to projects that are based on learning outcomes.

Although some translator training approaches, such as project-based and task-based, are often seen as antagonistic, Kelly (2005:116) opines that they are complementary, their difference being "simply a question of level/stage of training, that is of sequencing." Cerezo-Merchán (2012:33) also advocates the compatibility of situational approaches with task-based approaches, in that the former propose "the creation of a series of activities to practice specific aspects of learning."

Furthermore, since AVT is most often than not taught at postgraduate level (Section 2.2), it is assumed that some students may already be professional translators or translators-to-be who have received sufficient training in translation courses at undergraduate level.

4.2.1. Project-based and Situational Learning

Project-based learning aims at emphasising long-term, interdisciplinary and student-centred learning, so that participants learn by doing with the aid of technology, driving questions, group work, in-depth inquiry, feedback, choice decisions, and presentations (Li et al. 2015). In TS, situational approaches were inspired by Nord's (1997) developments on functionalist theory and draw upon the following assumption:

> in response to developments in translation practice, including the increasing *technicalisation* and commercialisation of the process and the increasing number of actors involved in this, teachers have to face the fact that the types of exercise used in translators training used [sic] in the past are no longer adequate to prepare students for working life, [sic] Furthermore, functional approaches to translation clearly suggest that to teach translation of texts without paying attention to the purposes the translation are [sic] to serve and the contexts in which these purposes are to be fulfilled is to deprive students of a major aspect of the tasks which will face them in their future careers. (Vienne 2000:99)

Translator trainers that adhere to this philosophy tend to promote student interaction with the help of situated projects, whose main objective is the emulation of real-life translation commissions within an academic environment. In this regard, it is necessary to define what a project means in the translation classroom:

> projects can be defined as multicompetence assignments that enable the students to engage in pedagogic and professional activities and tasks and work together towards an end product. […] In the case of a pedagogic project, the activities and tasks will mirror the professional outcome and lay the basis and enable practice of the skills necessary for the students to be competent when an authentic translation is commissioned. (González-Davies 2004:28)

Rooted in a project-based learning approach for would-be translators, Calvo-Encinas et al. (2012) point out that, by prompting students to carry out translation projects in teams, the following seven objectives for the honing of translation competences may be attained: (1) acquiring strategic competence (scheduling workload in terms of time management, tasks division, decisions, leadership, responsibilities), (2) enhancing students' adaptability to today's industry, (3) encouraging self-criticism (self-revision and third-party proofreading), (4)

developing online documentation skills, (5) raising awareness about professional conditions by establishing partnerships between academia and the industry, (6) improving communication skills and professional interaction in team work, and (7) making students conscious of the pros and cons of team work.

In Kiraly's (2005:1098) opinion, restricting project-based learning to assigning exercises which are then reviewed in the classroom represents a type of *performance magistrale* (lecture-like performance) that results from "the inertia of the conventional trial-and-error approach to teaching." Along the same lines, Kiraly (2000:43) argues that situating learning for translating purposes would require "the collaborative undertaking of professional translation tasks, in all of their complexity, under the guidance of a professional translator", as well as presenting real or semi-real pieces of work to the students, offering them real praxis inside and outside the classroom. For the scholar, this would be the only method that brings the complex translation profession alive, though it is very unlikely that companies will be eager to outsource projects to inexperienced translators-to-be or that all the T&I courses that exist today across the globe have an adequate number of professional translators as members of staff. In the case of AVT, other legal issues arise when trying to establish a partnership with companies, as the use of authentic audiovisual materials for educational purposes is hardly ever a straightforward operation because of copyright issues. Finally, not only would confidentiality be at stake when working with trainees but monetary retribution for their work on real-life projects would present intricate ethical and administrative challenges.

Adopting a semi-real project-based approach in the subtitling classroom requires, first and foremost, acknowledging the importance of the stages and roles involved in subtitling projects (Section 2.2). Thus, it would be advisable to share the common understanding that subtitling is indeed:

> the end-result of teamwork and students should learn about the different stages that are needed form the commission of the work until the broadcast, screening or distribution of the subtitled programme. Of the professionals involved the figures of the spotter and the subtitler are the most interesting from our perspective […] On occasions, the same professional does both tasks […] The more prepared they leave university, the more employable they will be. (Díaz-Cintas 2008*b*:102)

Attention must be drawn to the fact that evaluating semi-real subtitling projects may have different objectives, and quality can be measured following different models. An integrative model for translation evaluations in interactive, artificial contexts is illustrated by González-Davies (2004), although translation evaluation methods tend to differ among teachers of translation, and there do not seem to be homogenous practices (Gardy 2016). When it comes to AVT, few quality or evaluative methods have been proposed, and most of them are only for subtitling (Section 2.5.2).

4.2.2. Task-based Learning

This approach is broadly based on Delisle's (1993) succinct training theory and Biggs's (1999) systematic approach to aligned curricular design, which advocates "an overall curricular design based on learning outcomes" (Kelly 2005:17). Tasks represent the core of this teaching approach, which is informed by humanistic teaching principles, the communicative approach, cooperative learning and social constructivism (González-Davies 2004:12). As opposed to activities (i.e. concrete and brief exercises aiming to help to practice specific skills) and projects, tasks are defined by González-Davies (ibid.:23) as:

> a chain of activities with the same global aim and a final product. The full completion of a task usually takes up several sessions. In each of these, the activities lead along the same path towards the same end. On the way, both procedural (know *how*) and declarative (know *what*) knowledge are practised and explored.

Another fruitful definition is the one proposed by Hurtado-Albir (2015:263):

> a *translation task* as a unit of work that is representative of translation practice, intentionally aimed at learning to translate, and designed with a specific objective, a structure and a work sequence. [They] are the cornerstone of teaching unit production and curriculum design in translator training.

The task-based approach, which had previously been followed in foreign language learning/teaching, was first applied to translator training by Hurtado-Albir (1999). Within this paradigm, special emphasis is put on curricular design,

by carefully creating, organising, and sequencing tasks that promote the acquisition of translation skills. To be successful, the syllabus or module overview needs to include relevant translation competences, specific aims, expected outcomes, procedures assigned to the students, grading scales and bibliography (González-Davies 2017).

It is primordial that teachers encourage students to familiarise themselves with these module-specific guides, in which the principles, objectives, and goals that regulate the learning/teaching process throughout the duration of the module are stipulated. The module overview would need to be distributed among students and thoroughly discussed between them and the teacher so that the former have a clear understanding of what is required from them to acquire the skills necessary to pass the module and can make the most of the strategies and resources proposed by their teachers.

4.2.3. Socioconstructivism

Kiraly (2000) builds on Vygotsky's (1930–34/1980) social constructivism learning theory and regards translator training programmes as those in which education, i.e. learning/teaching processes, happens in social environments in which knowledge is constructed as a unique process. As opposed to the transmissionist perspective, whereby the learner is a passive listener and consumer of knowledge, the transformationist position sees learning as "a personal, holistic, intrinsically motivating and socially effectuated construction process" (Kiraly 2000:23). That is, learning is not transmitted from the teacher to the students, but rather proactively constructed and transformed in collaborative learning processes.

Under the socioconstructivist approach, learning activities imitate to a certain extent how real-life projects are operationalised in the translation industry, and the classroom is transformed into a forum for guided social and cultural experience. In addition, the different levels of skill acquisition are determined by the student's expertise. As discussed by Hoffmann (1998), there are various stages of expertise (i.e. initiate, apprentice, journeyman, and expert) that reflect

the student's progression on skills acquisition throughout the duration of their studies.

As shown in Figure 4.2, authentic collaborative projects encompass a vast array of activities as well as many different ways in which translations can be tackled by students in the form of de-situated exercises. For instance, instead of proposing the translation of a text in full, students can be encouraged to follow specific guidelines, to select the more accurate options among multiple choices, etc. In addition, there are project-embedded activities that form part of these exercises, such as using parallel texts, paraphrasing, doing library and internet searches, creating small translation groups, analysing the assignment, and editing and proofreading the final results. All of them enhance the authenticity of the projects and aim for greater exhaustiveness in the development of translation skills.

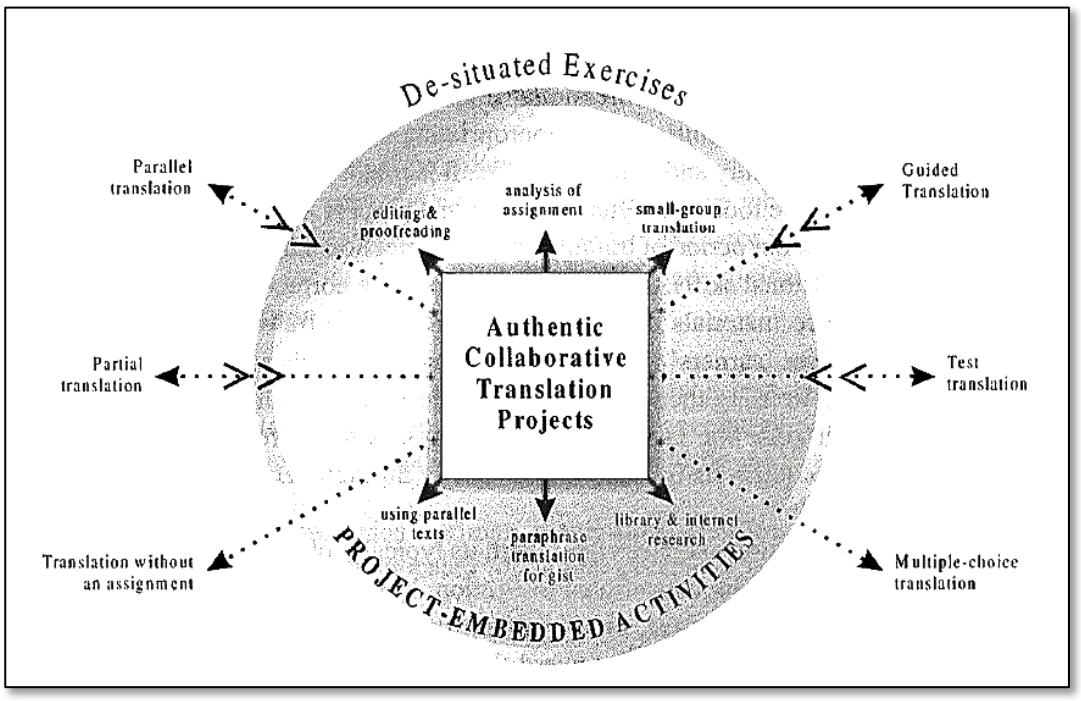

Figure 4.2. Authentic collaborative translation projects (Kiraly 2000:61)

The socioconstructivist assumptions have recently been taken over by González-Davies (2017:71), who proposes a so-called collaborative pedagogy in which:

> learning is viewed mainly as a social act that helps to construct knowledge and takes the form of a collaborative exploration of the translation process and product. The classroom becomes a working environment in which students, guided by the teacher, work together, forming a community of practice that shares responsibility for the learning process and its outcome. Collaborative learning abandons the teacher-centered approach whereby the teacher transmits knowledge, the student memorizes and regurgitates it, and interaction—when allowed to occur—is limited to discussions among relatively few students and the teacher.

The collaborative approach builds on three pedagogical principles: learner autonomy, awareness, and authenticity. Students need to carry out translation activities in teams, whereby they emulate professional contexts that include scaffolding,[12] the production of authentic translations, and discussions on the theoretical and practical aspects of translation. Scholars have discussed the patent mismatch that exists between trainers and students on their perception of group work in the classroom (Hubscher-Davidson 2008). As Prosser and Trigwell (1999) explain, students learn differently because their interactions with the world are different, too, and depend on their perception of the context (i.e. learning world) and the situation (i.e. student's access to the learning world).

Having said that, group work is at the core of socioconstructivist approaches and, as Colina and Venuti (2017) explain, by introducing collaborative work at the expense of teacher intervention, constructivist pedagogies rely greatly on self-learning and may be counterproductive in building basic knowledge. Indeed, a self-critical awareness about the ways in which one translates is acquired not only through real-life experiences but also through critical thinking and reflection on the theory and practice of translation. Yet, the many different specialisations offered in T&I programmes often lead to theoretical disagreement among the different stakeholders, which is exemplary of the need to go beyond prescriptive or normative manuals and allow instead for the voices of would-be translators to be heard.

[12] According to Kiraly (2000:45), scaffolding refers to "the support offered by the teacher to assist learners in the collaborative instruction of their mental models. […] it emphasizes the understanding that the constructivist teacher does not simply give students an activity to complete on their own, at least not as long as support is needed for the students to complete the task competently".

4.3. Translation and Translator Competence

The so-called translation competence and translator competence lie at the core of translator training and education literature. Since translators are trained for the contemporary (and future) needs of the industry, training has been continually transformed to cater for new professional scenarios and generations of would-be translators.

4.3.1. Competence in Translation Studies

The ultimate goal of the didactics of translation is the acquisition of the translation competence in a professional context, which can be defined as the one that enables an individual to carry out the cognitive operations that are required by translation practice (Hurtado-Albir 2001). This process integrates "various types of capabilities and skills (cognitive, affective, psychomotor or social) and declarative knowledge" (Hurtado-Albir 2007:167); that is, *know*, *know how*, and *know how to be* skills.

According to the European Qualifications Framework (EQF), on which the EMT Expert Group (2009, 2017) has drawn to elaborate on their translation competence, the concepts of competence and skills ought to be differentiated. Following the European Commission (2008:11), a skill is "the ability to apply knowledge and use know-how to complete tasks and solve problems", whereas competence is broader in its scope and refers to "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."

According to Kiraly (2000:31), "conventional translator training has focused almost exclusively on the transmission of translational expertise"; professionalism being opposed to expertise,[13] in that the former somehow requires the expertise

[13] According to Kiraly (2000), professionalism refers to "the translator's ability to work within the social and ethical constraints of translation situations in a manner that is consistent with the norms of the profession" (ibid.:31), whereas expertise is "the competence to accomplish translation tasks to the satisfaction of clients and in accordance with the norms and conventions of the profession

to operate to the highest standard in the real market. If the translation competence is to be seen as a combination of several sub-competences, including expertise and professionalism, then translation is a discipline, if not a "craft" (Newmark 1976:21), an "art" (Meschonnic 1999:18), or a "technology" (Mayoral 2001*b*:16), which calls for the successful acquisition and ultimate command of a certain number of specific skills. Yet, for Kussmaul (1995:9) "translation is not only a skill but also a problem-solving process" and, as highlighted by Chesterman (2016:149):

> insofar as translating is seen as a skill, an expert translator is thus someone who works largely on intuition, who has automatized a set of basic routines, and who can draw on deliberative rationality when the need arises, in the solving of unusual problems or in the comparison and justification of possible solutions.

The latter author discusses the development of the translation competence by resorting to the acquisition theory proposed by Dreyfus and Dreyfus (1986) in their critique of AI. Following this line of thought, there are five different stages that lead to the acquisition of any skills, e.g. translation competence: (1) novice, (2) advanced beginner, (3) competence, (4) proficiency and (5) expertise. In Chesterman's (2016:150) own words, the process of skill acquisition is gradually automatised, as "it goes from atomistic to holistic recognition, from conscious to unconscious responses, from analytical to intuitive decision-making, from calculative to deliberative rationality, from detached to involved commitment."

From this perspective, the ultimate acquisition of the translation competence would entail deliberative rationality, intuitive decision-making and holistic recognition when translating. Behind this rationale lies the assumption that translation competence can be acquired, thus justifying its constructive nature in opposition to those who embellish translation as an inner gift or a talent with which one is born and cannot be acquired. This assumption is as inextricable and

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with respect to producing a translated text *per se*. Expertise would include not only the effective utilisation and creation of strategies for dealing with specific translation problems as discussed above, but also the ability to use appropriate computer-based tools, to format text appropriately, to do terminological research in a manner that meets clients' needs for consistency and accuracy, as well as, for example, the ability to research a new subject matter adequately in order to translate a text in a manner acceptable to the client" (ibid.:30-31).

complex as the definition of translation itself and would therefore require further philosophical reflection. Yet to put it simply, this thesis will advocate the following statement: translation/translating is a process, a craft and a skill that can be learnt, requiring the acquisition of the so-called translation competence through specific training. In a nutshell, the translator is made, not born.

There is no evidence of research teams in the UK actively investigating translation competence or AVT didactics; however, the current landscape of research in Spain seems particularly fruitful and prolific as posited by Kelly (2019), who has identified the main research groups that carry out research on translator training.

Among them, the most important, in terms of number of research outputs and far-reaching impact, seem to be Procés d'Adquisició de la Competència Traductora i Avaluació (PACTE, grupsderecerca.uab.cat/pacte/en) at the Universitat Autònoma de Barcelona and Avances en Traducción e Interpretación (AVANTI, ugr.es/~avanti) at the Universidad de Granada.

One of the main results of PACTE's investigations is their integrated definition of translation competence, as opposed to other terms such as expert knowledge and learning processes, within a communicative approach framework (PACTE 2003), and their subsequent holistic model of translation competence (PACTE 2005).

The research team has published a collective volume on translation competence that compiles their research outputs of the last decades (Hurtado-Albir 2017). In this work, they analyse the outcomes and applications of their holistic model of translation competence (Figure 4.3) and conclude that the five translator sub-competences are fundamental for curricular design in TS courses:

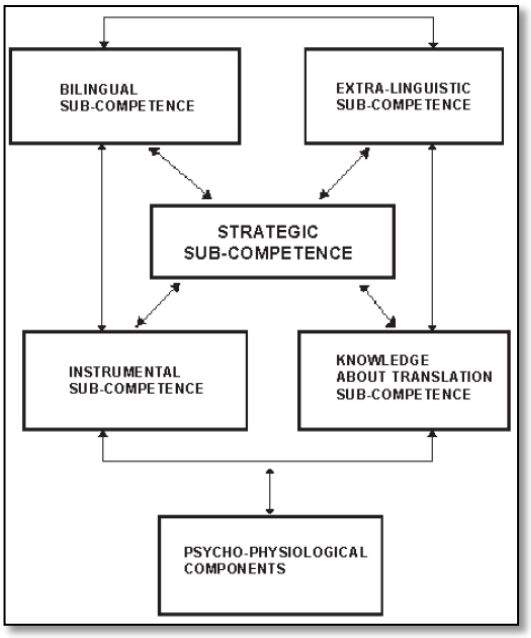

Figure 4.3. PACTE's holistic model of translation competence (PACTE 2003:60)

Kelly's (2002) definition of translation competence has also been instrumental in translation didactics and her model (Figure 4.4) has been used by scholars such as Morón-Martín (2009), Calvo-Encinas (2009), and Cerezo-Merchán (2012). The latter has utilised this model of translation competence to revisit the learning/teaching of AVT in Spain (Section 4.3.2).

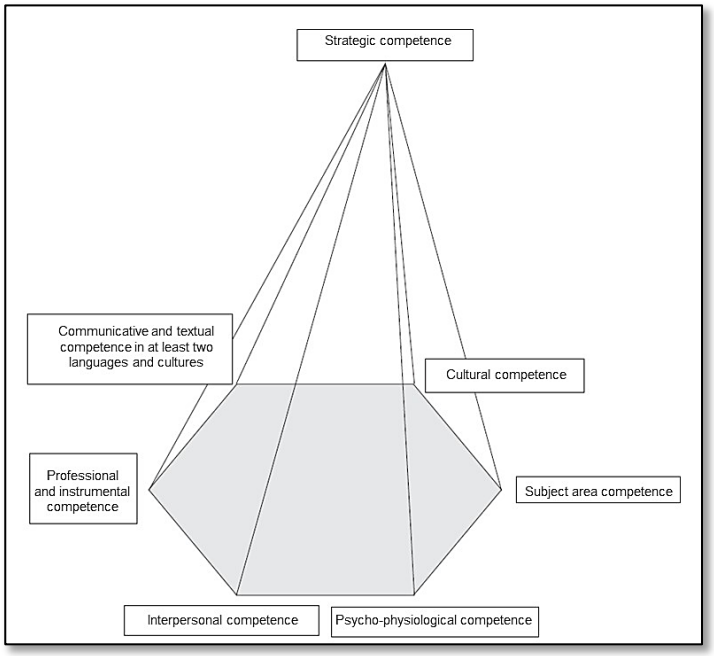

Figure 4.4. Kelly's model of translation competence (Kelly 2002)

Opposing himself to PACTE's holistic model, Pym (2003:489) argues that his minimalist approach to translation competence, outlined as "the ability to generate a series of more than one viable target text (TT1, TT2 … TTn) for a pertinent source text (ST); the ability to select only one viable TT from this series, quickly and with justified confidence", aims at preserving the essence of translating, even though this approach does not seem to elaborate its theoretical assumptions as much as PACTE's and AVANTI's approaches do.

An interesting debate was opened up by Kiraly (2000) when he claims that subtle differences can be found between the so-called translation competence and the actual translator competence that is often demanded from the translation industry. In his attempt to distinguish between the two, he states that:

> becoming a professional translator clearly entails more than learning specific skills that allow one to produce an acceptable target text in one language on the basis of a text written in another. That is what I would call '**translation** competence'. Acquiring '**translator** competence', on the other hand, in addition involved joining a number of new communities such as the group of educated users of several languages, those conversant in specialized technical fields, and proficient users of traditional tools and new technologies for professional interlingual communication purposes. (Kiraly 2000:13)

It can thus be argued that the acquisition of translator competence responds to the premises that there are culture-specific and national norms that govern the practice of professional translation. From this perspective, translator competence:

> means knowing how to work co-operatively within the various overlapping communities of translators and subject matter experts to accomplish work collaboratively; to appropriate knowledge, norms and conventions; and to contribute to the evolving conversation that constitutes those communities. (Kiraly 2000:14)

According to Kelly (2005), students in T&I courses are evermore heterogeneous worldwide, especially thanks to the implementation of many international mobility programmes, such as EU-funded Socrates-Erasmus and Erasmus+.[14] This new

[14] Other EU-funded projects for education and foreign language learning purposes include Eurydice, Comett, Comenius, Lingua, Leonardo and Tempus (Calvo-Encinas 2010:144).

panorama of Erasmus programmes and the potential benefits in translator training curricula has been thoroughly researched by Morón-Martín (2009).

The European Master's in Translation (EMT, ec.europa.eu/info/education /european-masters-translation-emt_en) network, launched by the European Commission's Directorate-General for Translation in 2009, published their own understanding of what translation competence entails in HE, in line with the notions established by the European Commission (2008). According to EMT Expert Group (2009), translation competence encompasses six interdependent sub-competences, namely (1) language, (2) intercultural, (3) information mining, (4) technological, (5) thematic and (6) translation service provision competences, as illustrated in Figure 4.5 below:

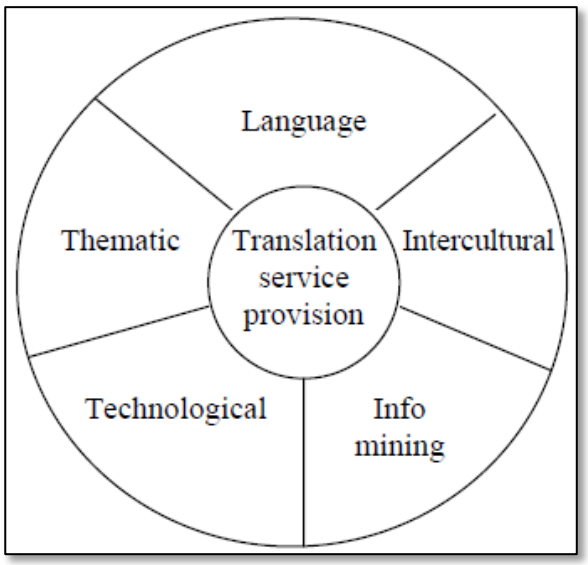

Figure 4.5. Translation competence chart (EMT Expert Group 2009)

A few years later, EMT Expert Group (2017) introduced several changes to the understanding of translation competence. The new framework encompasses 35 competences, skills, and areas of knowledge that lie under five areas of competence and "should be considered as complementary and equally important in providing the translation service, which is the ultimate goal of the translation process" (ibid.:5). As illustrated in Figure 4.6 below, these areas are: (1) language and culture (including transcultural and sociolinguistic awareness, and communicative skills), (2) translation (including strategic, methodological, and

thematic competence), (3) technology (including tools and applications), (4) personal and interpersonal, and (5) service provision:

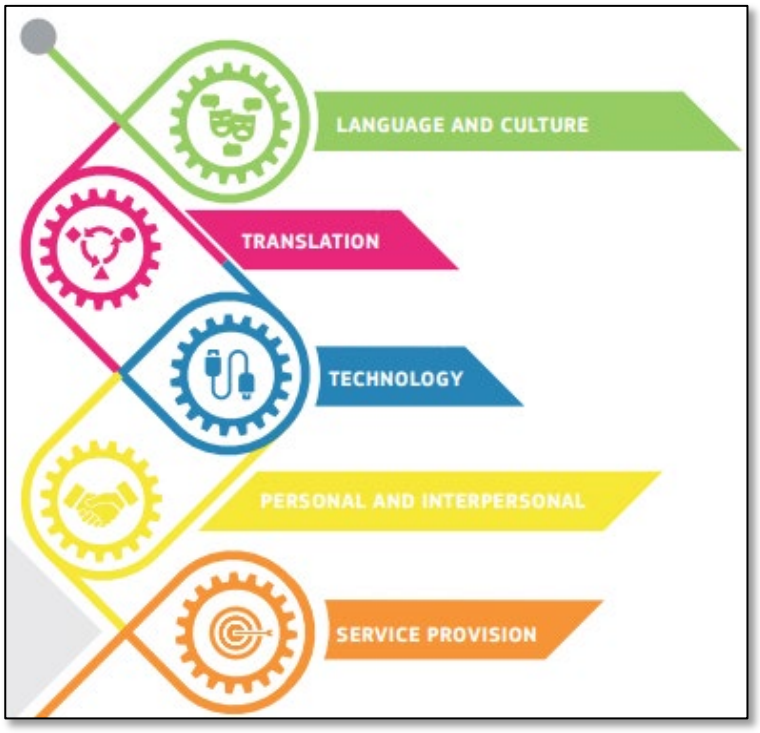

Figure 4.6. Translation competence chart (EMT 2017)

As pointed out by Chodkiewicz (2012), the earlier EMT's classification drew heavily upon previous scholarly works on translation competence. The most substantial sub-competence may well be the so-called service provision, which seems to take PACTE's "strategic competence" (Hurtado-Albir 2017:40) a step further as it outlines the skills necessary to accomplish translation projects under current working conditions. It thus has to do with quality, professionalism, self-evaluation, negotiation and many other business-related aspects of translation understood as a service that is provided by linguists and language experts.

The EMT's most recent taxonomy introduces a major change: translation competence is no longer an umbrella competence but an area of competence that "lies at the heart of the translation service provision competences" and includes "all the strategic, methodological and thematic competences that come into play before, during and following the transfer phase per se – from document analysis to final quality control procedures" (2017:7). The provision of translation

services “covers all the skills relating to the implementation of translation and, more generally, to language services in a professional context – from client awareness and negotiation through to project management and quality assurance” (ibid.:11).

4.3.2. Competence in Audiovisual Translation

As for learning/teaching AVT, one of the most notable differences with other practices such as literary or legal translation lies in its multimodal nature, which calls for transversal skills related to technology and audiovisual literacy (Díaz-Cintas 2008*d*). Many scholars seem to ignore the importance that technology, and instrumental and occupational subcompetences has in the field of AVT (Bolaños-García-Escribano and Díaz-Cintas 2019), which are closely linked to the EMT’s (2017) technology and translation service provision areas of competence.

As discussed in Section 2.4, AVT practices, and particularly subtitling, impose a number of technical constraints, idiosyncratic working conditions, specific linguistic challenges, and cognitive pressure that must be handled by linguists for each commission. Hence, proposing a so-called AVT competence would entail, *inter alia*, advanced image narration understanding, information and communication technologies literacy, and condensation skills, among other abilities and sub-competences. As foregrounded by Gambier (2013:55), the translation of audiovisual productions requires the activation of multiple skills such as:

> the ability to analyse the needs of the intended audience, to match the verbal to the visual; the ability to comply with deadlines, commitments, interpersonal cooperation, team organization; the ability to express oneself concisely and succinctly and to write with a sense of rhythm […]; the ability to adapt to and familiarize oneself with new tools; and the ability to self-evaluate in order to revise and assess the quality of the output.

Furthermore, Pagano et al. (2011:153) remark that when subtitling, “professionals enact a pattern of shorter total time for task execution, longer revision phase, attention to spotting during the end-revision phase and less

concern about condensation." Therefore, in the subtitling classroom, professional working standards ought to be simulated as closely as possible, including the use of authentic materials and relevant specialist software.

When it comes to AVT competences, Cerezo-Merchán (2012) assembles a comprehensive, descriptive case study that draws on previous works by Zabalbeascoa (1997, 2000, 2001), Carroll (1998), James (1998), Kovačič (1998), Agost et al. (1999), Bartrina (2001), Espasa-Boras (2001), Gambier (2001), Izard (2001), Chaume (2003), Díaz-Cintas (2006, 2008), Matamala (2008), Neves (2008*b*), and Granell (2011). Her list is presented in Table 4.1:

AVT COMPETENCES
COMMUNICATIVE AND TEXTUAL COMPETENCES
• Exhaustive knowledge of the target language in all dimensions (spelling, phonetics, morphology, syntax, lexis, phraseology and textuality). • Proficiency in the source language (excellent listening and written comprehension, and register, colloquial varieties and dialect identification, etc.) • Synthesis and paraphrasing skills (knowledge of information reduction and amplification translation techniques) • Linguistic creativity • Text analysis and production skills (discourse mode: fake orality, pretended orality)
CULTURAL COMPETENCES
• Good knowledge of the working cultures and adequacy of the translation to the needs of the target culture
THEMATIC COMPETENCES
• Cinema knowledge • Theatre knowledge • Exhaustive knowledge of the target audiences' specific characteristics • Film language and image semiotics knowledge • Audiovisual genres' characteristics knowledge
INSTRUMENTAL-PROFESSIONAL COMPETENCES
• Command of AVT-specific software (subtitling, dubbing, AD, etc.) • Command of digitalisation, encoding and format conversion software. • Speech recognition knowledge • Willingness and disposition to learning new software and packages • Proficient resource search and documentation strategies • Theoretical knowledge on one or more AVT modes • Basic knowledge on software localisation • Knowledge on VO • Command of sign language techniques • Command of text and image visualisation

• Command of dialogue writing techniques for dubbing and VO (take segmentation, symbols, timecodes, etc.) • Command of text into subtitle segmentation, spotting and reading speed adjustments for the target audience • Knowledge on appropriate translation strategies and techniques for each audiovisual genre • AVT project managing skills (project creation, development and organisation, teamwork) • Knowledge on the profession and the current landscape in the industry

Table 4.1. Audiovisual translation competences (Cerezo-Merchán 2012:128–129)

In the next section, an overview of recent advances in distance education is presented.

4.4. Distance Education Practices

Distance education constitutes a framework that encompasses practices such as distance learning, online learning, internet- or web-based learning, remote learning, as well as blended learning (b-learning) and electronic learning (e-learning). All practices build on the premise that the education does not take place in a physical classroom and there is therefore a certain degree of physical separation between the learner and the teacher. Distance education offers greater flexibility in terms of students' and teaching staff's geographical location and time availability. In recent years, societal, health and technological conditions have led to a greater demand of internet-based academic programmes.

Distance learning practices are not new and, some decades ago, distance learners would enrol on courses for which they would receive materials through the post and then liaise with their teachers and tutors through telephone or email. Traditional distance learning practices have experienced major changes throughout the years, of which the British Open University, established in 1969, and the Universidad Nacional de Educación a Distancia (Spanish National Distance Education University, UNED), established in 1972, are exemplary. In addition to HE institutions that specialise in distance education, many HE institutions have embraced b- and e-learning practices in an attempt to move away from more traditional classrooms and have increasingly incorporated learning technologies. There are many other organisations and associations that

have also embraced such practices and offer independent courses that are fully online or require a very small number of face-to-face teaching hours.

Another example of a successful online education scheme is that of massive online open courses (MOOCs), which have been offered by leading institutions since 2006, although their popularity rose from 2012 onwards, when major education-focused technology companies, such as Coursera (coursera.org) and edX (edx.org), were founded. As accounted by Patiniotaki (2014), many distance learning programmes use audiovisual materials for the teaching of specialised content, which is increasingly being made accessible to learners with sensory impairments.

There are many technologies and tools that can be implemented in remote learning, but one of the best known is undoubtedly the Modular Object-Oriented Dynamic Learning Environment, better known as Moodle (moodle.org). The Moodle-based teaching approach has been utilised and exploited by most universities and vocational institutions worldwide and represents a powerful didactic resource. Along with other forms of online communication, Moodle's private messaging, chat and forum functionalities permit teachers and students to easily establish one-to-one or team conversations through the interface, in a synchronous or asynchronous mode. In Moodle, students can retrieve material, submit assignments, sit tests, give and receive peer feedback, etc. Teachers can share materials, post notifications, create online courses, create and grade assessed coursework, etc.

The use of internet-based tools in HE requires the sharing of material in editable formats and its impact on the intended learning outcomes should be fully acknowledged by teachers and students alike as they may impinge on the forms of assessment. However, it also brings about many advantages, as foregrounded by Kelly (2005:88):

> education technology probably represents a step forward in the assessment of translation simply because it facilitates the submission or delivery of student translations by the same means as used professionally (email, ftp) and because word-processing software functions such as comment and change-tracking allow

> feedback from other students and teachers to be made easily also in electronic format.

In the specific case of T&I courses, translator education programmes experienced deep changes in the early 1990s with the advent of computerised workstations, and their use in the translation industry and at universities (Kiraly 2000). As explained by Ketola and Bolaños-García-Escribano (2018:196), online learning environments differ from traditional face-to-face settings in various ways:

> Firstly, how the teaching and learning of a specific discipline is achieved via online platforms is somewhat determined by social aspects. Online environments, seemingly cold and unwelcoming, may maximise distances between learners and teachers, thus creating obstacles and impeaching the success of the learning experience. Yet online education is expanding as rapidly as ever before and e-learning instructors are finding ways to bridge the gap between social interaction and knowledge building.

After almost two decades, the constructivist computer-based classroom advocated by Kiraly (2000) and his counterparts at the beginning of the 21st century (Section 4.2.3) is starting to become obsolete, considering the reach and breadth of internet-based teaching programmes. The importance of distance education is central today, especially when considering the way in which the industry has resorted to remote and freelance work at a global scale. The funding problems at certain institutions to purchase up-to-date software, which is a key drawback for the teaching of translation technology and AVT, could be addressed by establishing co-operation frameworks between universities and developers.

Many universities and vocational institutions have traditionally fostered international exchanges of both students and staff through programmes like Erasmus (1987–), and other overseas research and teaching partnerships. Embracing digital exchanges by means of practices like telecollaboration can also allow for leaner inter-university partnerships, especially whenever the movement of persons may be disrupted or temporarily interrupted like in the case of the COVID-19 pandemic in 2020. As foretold by James (1998:256):

> distance learning agreements can be set up between institutions; staff and student exchanges can be arranged; the home institution could provide the theoretical knowledge and the host institution could provide the opportunity for practical

> experience. The sharing of resources in these different ways not only brings economic benefits but enriches the student's understanding and appreciation of the other language and culture in question. Teachers can also benefit by an exchange of knowledge and expertise.

Digital technologies can promote online exchanges, as well as the sharing of resources and the creation of international programmes of study. For instance, students who are not able to go abroad as part of an Erasmus+ exchange programme may be encouraged to enrol in online modules and receive distance tuition from partner universities.

No doubt, distance education will continue to be a significant asset in HE for years to come and more online courses can be expected, thus enlarging and boosting the community of distance education students.

4.4.1. B-Learning and E-Learning in (Audiovisual) Translation

The concepts of b-learning and e-learning need to be understood as part of a regeneration process that has been taking place at HE institutions in the last decades, following fresh technological advances and the most recent trends in education (Horvat et al. 2015). As explained by Bartoll and Orero (2008), b- and e-learning must be differentiated from other terms, such as distance learning, in that the former implies online interaction as well as the use of multimedia technologies and the internet to facilitate access with the tutor, whereas distance learning may not. E-learning implies the use of a computer to deliver part, or the whole, of a course offered by an educational institution. In the present HE context, where students are placed at the centre of the formative action (QAA 2008), monitored by teachers who design competence-based training models, b-learning can then be understood as "the combination of classroom based sessions with non-classroom based sessions, in which much use is made of technology with the goal of optimising learning" (Galán-Mañas and Hurtado-Albir 2010:199).

B- and e-learning have many similarities, but the most important one is the use of virtual learning environments or online learning tools, which can be

asynchronous and synchronous, such as the already mentioned Moodle or Blackboard (blackboard.com). In addition to Moodle, there are online platforms that have been designed for T&I training specifically, as discussed below. E-learning and online environments may now be the testing ground of current didactical applications for translator training (Kiraly et al. 2015), as they have proved to "hold great potential for translator training, both in national and international educational contexts" (Ketola and Bolaños-García-Escribano 2018:197). As Kim (2013) explains, however, these new educational approaches need to be carefully selected and monitored, so that they respond to a pedagogical action plan without being counterproductive.

In the following paragraphs, an overview of five academic projects on e-learning applied to the teaching of T&I is given, the last one being the project that is closest aligned with the main aims of this research.

Tercedor-Sánchez et al. (2005) explore the use of e-learning platforms in courses on audiovisual, scientific and technical translation in T&I curricula in Spain and offer a series of frame activities to tackle corpora, audiovisual content and website accessibility. The project seems to be limited to the publication of an academic article and no actual platform was developed.

Álvarez-Álvarez and López-Arroyo's (2011) use of the WebQuest model (webquest.org) to teach translation at an undergraduate level is exemplary of TS-specific pedagogical tools. Developed originally by Bernie Dodge at San Diego State University in 1995, WebQuest is an inquiry-oriented lesson format in which most or all the information that learners work with comes from the web. These ad hoc webs can be created within a Moodle-based educational approach and are beneficial for honing translation competence and expanding language and project-specific learning through the web.

Subtitle Project (subtitleproject.net) is a didactic resource that includes a list of bibliographical references on AVT, online resources, a news section and a list of subtitling firms operating in Italy (Rundle 2008). Although conceived as a

repository rather than a proper online platform for the teaching of AVT, this project was pioneering at its time and has now evolved to focus primarily on SDH.

Members of the Universitat Autònoma de Barcelona developed an AVT-specific online learning platform called 'Audiovisual Translation Learning Platform' (AVT-Lp), which has been used by their own students only. As discussed by Arumí-Ribas et al. (2010), this platform includes manually designed exercises for students to practise different AVT modes without having to be physically present on campus (Figure 4.7), and allows for greater student-teacher interaction (Igareda-González and Matamala 2011).

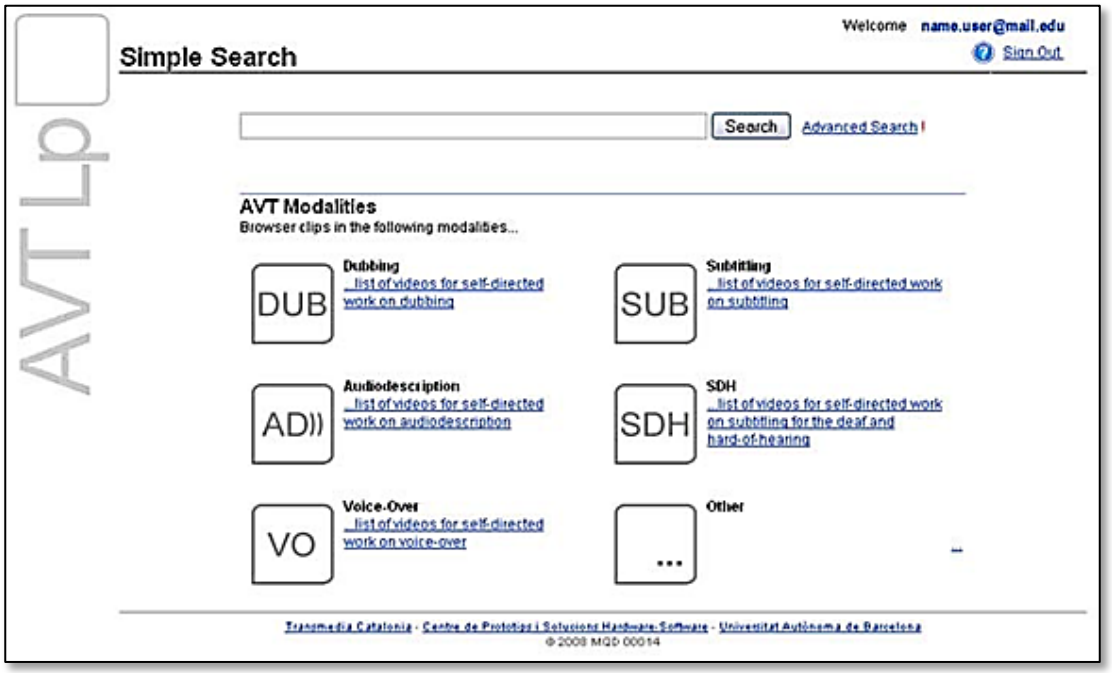

Figure 4.7. AVT-Lp interface as illustrated in Arumí-Ribas et al. (2010:49)

The last project to be discussed in these pages is the e-learning platform ClipFlair (clipflair.net), which resulted from a research project funded by the European Commission from 2011 until 2014. Developed by several HE institutions throughout Europe, its main focus is on foreign language learning through interactive revoicing and captioning of clips and it contains various modules as displayed in Figure 4.8:

Figure 4.8. ClipFlair homepage and language menu

The chief outcomes of the project include the creation of an AVT-related online platform targeting foreign language learners and instructors, a library of resources containing over 300 activities in several language combinations, guidelines for activity creation and evaluation criteria, as well as an online community of learners, teachers and activity authors. As shown in Figure 4.9, the menu offers options with which teachers can design ClipFlair activities in their specific Studio platform for foreign language learning. There are two main types of activities, depending on whether students are required to add speech (revoicing) or text (subtitling) to a clip.

Figure 4.9. ClipFlair activity creation interface

As the number of online translation courses grows, the application of innovative methodologies and materials becomes more visible in distance learning

ecosystems. Drawing on Patiniotaki's (2014) terminology, today's trend is to favour web-based teaching practices (e-learning), as opposed to web-support for information storage and for two-way interaction, which are the usual ways in which traditional curricula incorporate online education in the classroom (b-learning). Of the examples above, only the last two and the WebQuest model could ultimately be used effectively in e-learning environments as examples of two-way interaction platforms, whereas the other two work as mere online repositories.

Little to no innovations in revoicing technology have been observed in application to educational environments, nonetheless, with the exception of the EC-funded ClipFlair project.

These initiatives are the starting point of the present research work, which also draws on the fact that b-/e-learning rests on the use of technologies that should be embedded in translator training (Hurtado-Albir 2019), and have influenced the way in which this research has been designed (Chapter 5).

4.4.2. Remote Interactivity and Social Networks

Several reception studies have pointed out that online learning tools, like Blackboard and Moodle, are highly beneficial to enhance communication skills among students (Damnjanovic et al. 2015). Moodle's main communication related features include forums, event calendar, emails, group spaces, chat-rooms, and videoconferencing. In addition, tutors and students can create a personalised profile in which they can introduce themselves to their classmates.

Interaction between students and teachers, as well as among students, is indeed fundamental for students to achieve their academic goals and do not feel isolated. Whereas office hours have been the most common type of teacher-student interaction in the past (Calvo-Encinas 2009), it seems that the diversification of communication in academia, thanks to the irruption of new electronic means, has opened up the potential (and the need) for greater online interaction, be it via

emails, forums, video conferences or live chats. However, as claimed by Alsolamy (2017:3):

> although many studies confirm that academics have a positive attitude towards the use of social networking in education, as these applications have the capability to improve teaching methods, enhance students' learning, and expand interaction with their academics and peers, some researchers indicate that few instructors choose to utilise them in the classroom.

Today, the use of web-based tools and social media platforms is deeply rooted in both teaching and work environments, building on greater interactivity and enhancing socialness by relying on remote collaboration, though there does not seem to exist an integration of external social networking resources in online learning tools' interfaces. In the case of translators-to-be, this would be potentially helpful given the abundance of electronic resources available for audiovisual translators, especially in the form of peer forums, blogs and mailing lists. As claimed by Olvera-Lobo and Gutiérrez-Artacho (2014:284), and referring not only to AVT students:

> from an academic perspective, the inclusion of SNs [social networks] in translation teaching would provide a positive example of applying this tool in the educational setting and would guide students in optimizing the use of such sites for their professional and social futures. Moreover, this approach would promote the adoption of new didactic methods that better respond to the current context of the information society and to the demands of the translation labor market.

In their work, Olvera-Lobo and Gutiérrez-Artacho (ibid.) observed the reactions of students when using social networks as a didactic tool in a legal translation course. Rather unsurprisingly, their results led to the elucidation of the fact that including social networks in translator training environments may enhance students' communication skills and technological literacy.

The many benefits of utilising social media platforms to teach AVT have been also highlighted in a case study conducted by Ketola and Bolaños-García-Escribano (2018), who report on an online course for translation students and discuss how the students interacted with each other in the social media platform on which the course was organised. The participants' online exchanges constituted the core of the course's assessment, which took the form of peer

grading. The authors claim that online training promotes the participants' understanding and appreciation of other cultures and languages. In AVT, "the greatest advantages of social media applications as online instruction platforms lie in their interactivity – these platforms promote active engagement and stimulate self-reflection and discussion among students" (ibid.:197).

4.5. Teaching and Learning Audiovisual Translation in Higher Education

As illustrated by Bolaños-García-Escribano and Díaz-Cintas (2019), research inquiry into the learning/teaching of AVT dates back to only a couple of decades ago. However, the cross-fertilisation of the discipline and its greater visibility in the last few years have allowed for a rapid expansion of AVT-specific courses. It could, therefore, be assumed that the following statement reflects an outworn reality:

> few educational institutions around the globe have traditionally taken up the challenge to teach dedicated modules on any of the translation modes generally used in the world of audiovisual programming, whether subtitling, dubbing or voice-over. Until very recently, and with very few exceptions, the profession was learned *in situ*, away from educational establishments. (Díaz-Cintas 2008*d*:3)

This panorama depicted at the end of the last decade seems to have changed quite substantially, and today there is a substantial number of AVT-specific postgraduate courses, undergraduate modules, vocational training, and PhD programmes (Bolaños-García-Escribano 2016). One of the reasons for this growth may be the expansion of the multimedia market, one of the most crucial turning points being the emergence of cable TV and the advent of the DVD by the end of the 20th century.

The first postgraduate-level course in AVT started to be offered at the University of Lille in 1983 (Pérez-González 2003; Chaume 2004*c*), and for many years was the only programme available in Europe. The expansion of AVT tuition in tertiary institutions coincided with the graduation of the first generation of AVT trainers in the mid-1990's, along with the creation of international associations – e.g. ESIST,

set up in Wales in 1996 – and the proliferation of audiovisual productions for distribution on DVD and TV stations. The flurry of professional and academic activity that shook the field in the 1990s led to the design and launch of a new wave of postgraduate studies in AVT at many universities, such as Autònoma de Barcelona, Copenhagen, Granada, Helsinki, Leeds, Leuven, Manchester, Mons, Vigo, Roehampton, Saarbrucken, Strasbourg, etc. (Gambier 2006*a*).

This was a major turning point in the provision of AVT tuition in HE and many other universities around the world started to progressively incorporate AVT training as part of their programmes of study, both at undergraduate as well as postgraduate levels. Two decades later, in 2016, there were over 15 postgraduate courses in UK universities – and more than 12 in Spanish universities – that offered specific modules, or study routes and pathways, on the different practices of AVT (Bolaños-García-Escribano 2016). Research advancements have also multiplied in recent years, leading to a growing body of literature on AVT education, which often focus on a specific AVT mode or a country's educational landscape. All this activity has awaken much interest among the academic community and would-be translators, thus foregrounding the definitive establishment of AVT as a formal discipline and area of study in tertiary education (Gambier and Ramos Pinto 2016).

Traditional AVT lessons used to focus on how to analyse and translate films by learning about basic cinema techniques and script writing, to then translate pieces of dialogue without necessarily adapting the output to the limitations and constraints of different AVT modes (Nornes 2017). Rooted in semiotics and closely related theories, this initial approach to the didactics of AVT covered little of what was really being done in the industry but set training institutions in the right direction. Research studies published in those early years, which focused on how meaning is constructed in audiovisual texts, helped to set the grounds for linguistic-based approaches that have deeply configured today's AVT research and training landscapes. Having said that, the technological component of AVT is evermore important in today's globalised and technified world, and courses of study are required to provide students with comprehensive training on translation technologies, including professional subtitling software.

In her attempt to situate translator training in university education, Way (2000) discusses the importance of identifying and utilising the real needs of the translation industry. Back then, she mentioned the effects of working via the internet, an incipient working medium that has now turned into a daily occurrence worldwide (Section 4.4). This is, of course, of the utmost importance for the teaching of certain specialisms, such as AVT, as it makes the distribution of materials and projects easier, cheaper and faster. In the past, translation materials had to be couriered over or the freelancer would be asked to visit the company's offices to reproduce the videos that needed to be translated. Nowadays, subtitlers are mainly required to translate from home and materials are sent over through file transfer protocols or, increasingly more common, are hosted in the company's cloud. Freelancers are expected to command different pieces of software, on top of being conversant with national and company-specific conventions, when accepting revoicing, subtitling or localising commissions; hence adding up to the many skills that already form part of AVT-specific curricula. In this ecosystem, competent translators are not only those who know how to translate, but also those who can adapt easily to new software and translation processes, as well as to heterogeneous working teams.

4.5.1. Audiovisual Translation Curricula in Europe

As discussed, by the end of the 20th century, few universities and educational centres were offering AVT tuition in Europe, or the rest of the world for that matter, whether at undergraduate or postgraduate levels. The advent of new technologies, and the flourishing of an audiovisual market propitiated by digitisation and globalisation, have brought about a considerably higher volume of AVT activity. The exhaustive list of AVT courses offered by Mayoral (2001*c*) and Toda-Iglesias (2011) demonstrate that AVT-specific training and research courses have been around since the turn of the century, though, as hypothesised by Díaz-Cintas (2007), the practice-oriented approach of many AVT courses at the time might have been one of the reasons for the low involvement of students in AVT research at doctoral level.

University curricula in the EU have recently been rearticulated according to the so-called Bologna Process (1999–2015), which has transformed undergraduate and postgraduate curricula across Europe, including official programmes on T&I (Rico 2010; García-Luque 2010). As Pym (2012) outlines, this new education paradigm separates undergraduate and postgraduate education in three levels, or cycles, of the EQF, also known as *Framework for Higher Education Qualifications in the UK* (QAA 2008). Such levels are the following: bachelor's degree (level 6), master's degree (level 7), and Doctorate of Philosophy (level 8). There are two main well-established schemes for the provision of full long-term training in Europe: undergraduate degrees can last for four years and be followed by a one-year postgraduate degree, as is done in countries like Germany, Austria, and Spain; or they can last for three years and be followed by a two-year postgraduate degree, as is done in countries like France.

Another change was the introduction of the European Credit Transfer and Accumulation System (ECTS), a credit system that aimed for further homogeneity among European countries and which has been central to promote exchange programmes. It also foregrounded the role of independent learning by considering that study time outside of the classroom (e.g. preparatory reading and homework) ought to have a credit value, hence incentivising that students continue learning outside of the classroom and not only when attending classes. Such an approach may prove problematic in the case of AVT on account of the applications and software required, which may only be available in the university's computer labs. Yet, the existence of specialist freeware that students can install on their PCs or laptops can help alleviate the situation. On the whole, it can be argued that the nature of AVT makes it uncomplicated to promote students' autonomy. The possibilities brought about by the use not only of freeware but also of online tools, inside and outside of the classroom, are many, and the aim of this thesis is to elicit how these online platforms can operate as effective translator training settings.

On the whole, contemporary T&I curricula aim to qualify linguists to become translation professionals (Section 4.3). In the case of AVT, T&I teaching staff and academics are hence expected to be able to design curricula that provide

students with the knowledge and skills necessary to work as audiovisual translators. That is, AVT courses ought to consider subtitling and revoicing as professional practices and not as language learning methods. Universities are progressively embracing the potential offered by AVT, not only for the pursuing of a career in the translation and audiovisual industries, but also for the fostering of technical skills that are highly transferable and necessary to work in the age of digital technologies. In this sense, trainers must be familiar not only with the relevant technologies but also with the existing spatial-temporal and linguistic conventions that regulate the various AVT modes. In the case of subtitling, Kovačič (1996:115) argues that:

> teaching subtitlers is a socialization process which prepares trainees to function as those members of the society who will enable others to engage in a specific activity, namely understanding foreign language TV programmes and films. In being taught how to subtitle, future subtitlers are told which norms to follow so that their products will help viewers to comprehend the contents of foreign language programmes.

As expounded by Gambier (2006), the main transformations that have affected AVT revolve around the greater digitalisation, internationalisation of distribution and wider choice of audiovisual productions; to which the internetisation and digital revolution can be added, in the form of VoD platforms and social media such as YouTube and Vimeo.

Traditionally, and on account of their close links with film studies, revoicing and subtitling have been almost exclusively centred on fictional productions and, to a much lesser extent, on documentaries or corporate videos, for instance. This situation has changed substantially over the years as many courses have now widened their portfolio to incorporate more specialised audiovisual content, as well as the teaching of accessibility practices.

The use of specific content allows for students to be in greater contact with specialised fields (e.g. scientific and medical contexts), whereas the inclusion of accessibility practices leads to a greater comprehensiveness of translator training programmes. Even though the film and entertainment industry was once the only market available for trainee audiovisual translators, the situation has changed

dramatically, to the extent that film productions represent only a small percentage of what is being actually localised these days (Esser et al. 2016). A fundamental point to be raised is that audiovisual texts cannot be considered specialised simply because of their multimodal and technology-driven nature (Section 2.1). Specialised texts are defined as such because of the presence of highly cryptic content and jargon that relate to a given discipline, such as medicine, transport industry, business, legal profession, etc. (Martino-Alba and Lebsanft 2012). In this sense, and as raised by Chaume (1999) and Bartrina and Espasa-Boras (2005), there are audiovisual genres that include specialised content – e.g. documentaries on scientific, technical, legal, or economic matters. This, of course, highlights the need for subtitlers to be not only conversant with the technicalities of subtitling but also able to manage terminology and understand subject-specific texts. Further, this relates directly to Merino-Álvarez's (2005) didactic proposal for implementation of AVT training that goes beyond the translation of films to include also scientific and technical texts as part of the gamut of audiovisual programmes; an approach that is currently being taken up in the curriculum of some universities, where authentic audiovisual materials that include specialised terminology are used in subtitling and revoicing modules.

Drawing on previous work, Table 4.2 below displays a list of postgraduate courses offered by various HE institutions in the UK that included some sort of AVT tuition, as core or subsidiary modules (Bolaños-García-Escribano 2016).[15] From a comparative perspective, the offer has grown considerably in a very short space of time since the 2016 survey (Bolaños-García-Escribano 2018); there seems to be a greater interest in practice-oriented approaches (including hands-on practice, fieldwork and placements) as well as media accessibility services, like AD and SDH, which are exemplary of the more solid connections being established between academia and the industry.

[15] In addition to universities, many independent vocational institutions – i.e. private training centres – offer AVT-specific online and face-to-face courses that aim to bridge the gap between theory and professional practice. These courses are most commonly designed, developed and monitored by professional subtitlers, although academics are also involved in some of these courses. To keep a close eye on new private courses is, indeed, a rather challenging activity as they are constantly changing, opening and closing because they are demand dependent, and they rely mostly on word of mouth in translators' circles and social networks.

AVT TUITION IN THE UNITED KINGDOM[16]				
	UNIVERSITY	DEGREE	MODULES	ECTS
GREATER LONDON	London Metropolitan	MA Translation	Subtitling	10
	Roehampton	MA Audiovisual Translation PGDip Specialised Translation	Subtitling: Concepts and Practice	20
			Dubbing and Voiceover	20
			Media Access: Audiodescription, Subtitling for the Deaf and Respeaking	20
	Middlesex	MA Translation (Audiovisual and Literary)	Translating Audiovisual Texts	15
	UCL	MSc Specialised Translation MA Translation Studies	Subtitling	7.5
			Translating for Voiceover and Dubbing	7.5
			Audio Description for People with Limited Access to Visual Information	7.5
			Subtitling and Captioning for the Deaf and the Hard-Of-Hearing People	7.5
	Westminster	MA Translation and Interpreting MA Specialised Translation	Audiovisual and Computer-assisted Translation	10
ENGLAND	Aston	MA Translating for Business and International Institutions MA TESOL and Translation Studies	Translation Technology II: Machine Translation, Post-editing, Audiovisual Translation	7.5
	Birmingham	MA Translation Studies (Distance Learning)	Translation in a Professional Context	10
	Bristol	MA Translation	Principles of Subtitling	10
	East Anglia	MA Applied Translation Studies	Translation in Context	10
	Essex	MA Translation, Interpreting and Subtitling	Subtitling: Principles and Practice	7.5
	Leeds	MA Audiovisual Translation Studies	Subtitling Project	15
			Subtitling and Respeaking for Deaf and	7.5

[16] This table was last updated in mid-April 2019 and has been built using public information available from the universities' websites and official documents.

			Hard of Hearing Audiences	
			Strategies and Tools in Audiovisual Translation	15
	Leicester	MA Translation Studies	Audiovisual Translation	7.5
	Manchester	MA Translation and Interpreting Studies	Audiovisual Translation I	7.5
			Audiovisual Translation II	7.5
	Newcastle	MA Translation Studies	Chinese to/from English Subtitle Translation	10
	Nottingham	MA Translation Studies MA Translation Studies (with Interpreting) MA in Chinese/English Translation and Interpreting	Audiovisual Translation: Accessibility	10
	Sheffield	MA Screen Translation	Theory and Practice of Subtitling	7.5
			Subtitling Project	7.5
			Film Translation of Literary Classics	7.5
	Surrey	MA Audiovisual Translation MA Translation MA Translation and Interpreting	Audiovisual Translation I	7.5
			Audiovisual Translation II	7.5
SCOTLAND, NORTHERN IRELAND, WALES	Glasgow	MSc Translation Studies	Subtitling Film and TV	10
	Heriot-Watt	MSc Interpreting and Translating MSc Translating	Subtitling	7.5
	Queen's University Belfast	MA Translation	Audio-Visual Translation	5
	Cardiff	MA Translation Studies MA Professional Translation	Specialised Translation: Subtitling	7.5
	Swansea	MA Translation and Interpreting	Extended Translations	30
DISTANCE LEARNING	Open University	MA Translation	Translation in Practice	30

Table 4.2. Modules on AVT included in postgraduate courses in UK universities

The next section explores the nuts and bolts of curriculum design for the development of modules focused on AVT practices and imparted in HE institutions.

4.5.2. Audiovisual Translation Curriculum Design

One of the pedagogical outcomes of Biggs's (1999) constructive alignment principle is the importance given to the curriculum, an umbrella term that encompasses courses of study, syllabi and study guides. A programme's intended curriculum is a planned sequence of learning experiences, that is, an official academic plan that expresses educational ideas in practice. The curriculum is necessarily the result of human agency and includes the following elements: purpose of the curriculum, content, sequence, instructional methods, resources, assessment, evaluation approaches, syllabus, aims, intended learning outcomes, competences, goals and objectives. In a nutshell, curriculum design is not only the process of defining and organising the above elements into a logical pattern, but also a way in which academic institutions engage with the students' learning experiences throughout their undergraduate and postgraduate studies.

There are two main types of curriculum models: prescriptive and descriptive. The behavioural objectives and outcomes-based learning models of curriculum are examples of the former, whereas the situational model is exemplary of the latter. Prescriptive models, which are the most common in today's competence-based study programmes at university, focus on what students should do during their studies and are thus concerned about the ends of the training. The aims have thus been predetermined before the students access the study programme, whereas in situational models an analysis of contextual factors can alter how the curriculum is conceived depending on varying internal and external circumstances.

Following a translation task-based approach (Section 4.2.2), Hurtado-Albir (2007) offers a distinct framework for competence-based curriculum design in translator training programmes. The starting point is that such programmes should

culminate in the acquisition of the so-called translation competence and its six main sub-competence categories (Section 4.3). Study programmes are made up of a certain number of individual modules, which should hone the development of any or all of the sub-competences above mentioned. According to Hurtado-Albir (2007) the focus of module design should be on tasks, sequencing and assessment. For the teaching to be aligned with the intended learning, the teaching units included in the syllabus must be constructed according to the competences that students are expected to acquire. The assessment, which can be for diagnostic, formative or summative purposes, should form part of a learning continuum and be purposefully sequenced along with the various teaching units. It goes without saying that curriculum design can also be conceived as the combination of modules that integrate a specific translator training programme.

As maintained by Hatim (2001), translation courses should be cyclical, that is, units and learning stages must build on and extend the previous ones. This approach also applies to the teaching of AVT practices (Section 2.4), all of which require the application of different methods, skills, strategies, and conventions, as well as the use of different software. Despite their differences, all professional practices converge on the same foundational ground: they all involve the translation of audiovisual, multimodal, and multimedia texts (Section 2.1). In practical terms, this means that they require the activation of specific methods, strategies and techniques that aim to overcome the challenges posed by these texts because of their specific nature. Some skills are interchangeable between the different AVT modes. For instance, learning how to time clips according to a predefined set of parameters will help the spotting of interlingual subtitles as well as intralingual subtitles for people who are deaf and hard of hearing, and vice versa. Similarly, learning how to fully appreciate and analyse images, narrativity and filming techniques used in audiovisual programmes will help students both to translate scripts for dubbing or VO and also to describe theatre plays and audiovisual programmes for the blind and partially-sighted audiences. This is the reason why some universities have a general module on AVT and then specific modules on each of the various modes.

Designing a general module on AVT, or one focus on any specific AVT practice, needs necessarily to strike a balance between theory and practice. It should start by offering a broad perspective of what translating audiovisual texts entails from different angles – e.g. pragmatic, semantic and semiotic –, in academic as well as professional terms. Theory on the semiotics of audiovisual texts is extensive and ought to be discussed in AVT-specific training. For instance, the trainer should elucidate the differences between oral and written texts versus printed, audiovisual, multimedia, and multimodal texts. As previously discussed, audiovisual texts are "semiotic constructs comprising several signifying codes that operate simultaneously in the production of meaning" (Chaume 2004*b*:16) and, as such, the aural and visual components play a major role in the construction of meaning.

Awareness of the specificities of audiovisual texts and the different translation modes that are available to deal with them has to be raised from the very beginning of the course, module or training programme, henceforth establishing a conceptual paradigm that is paramount to the successful development of translation competences in AVT.

As for the linguistic, paralinguistic and extralinguistic characteristics of audiovisual texts, much research has traditionally been conducted by academics, especially in terms of spoken discourse, gender, humour and wordplay, cultural references, written constraints, and register, to name but a few. As further posited by Chaume (2004*b*), the connections between film studies and AVT are many. The interaction between verbal and nonverbal signs in audiovisual programmes originates a semiotic conglomerate, whose networked intricacies can be missed by translators-to-be if they are not fully conversant with cinematic language and its communicative value.

In translator training programmes offered at undergraduate level, the weight of modules dealing with AVT is normally low compared to the number of modules offered on language and culture, as well as general, literary, and specialised translation. AVT-specific postgraduate studies, on the other hand, tend to display

a wider range of modules focused on different professional practices, such as media accessibility, revoicing, subtitling, and video game localisation.

When possible, AVT-specific courses should cover a series of primary contents: (1) theoretical premises; (2) film narration and event sequencing analysis; (3) script editing and production; (4) visual-aural synchronisms; (5) professional conventions; (6) translation methods, strategies, and techniques; (7) decision making and critical thinking (i.e. translation commentary); (8) language- and culture-specific challenges and constraints; (9) textual reduction strategies; and (10) software technologies. In principle, the aforementioned contents could be embedded in the curriculum following the previous order; however, it is understood that some contents are intrinsically intertwined and, additionally, the contents can be adapted to be used with various types of specialist software, hence contributing to the development of a more holistic curriculum.

As for the pedagogical dynamics, the curriculum would ideally comprehend both teamwork and individual work that reflect current practices in the professional market, thus falling in line with the postulates of the socioconstructivist teaching approach. The teaching methodology would also benefit from being student-centred and situated in the sense of using semi-real projects whose difficulty is graded depending on the students' progress and expectations, concatenating the commissions as per the syllabus and amending the latter depending on the rapidity with which the learning outcomes are observed to be successfully met throughout the duration of the teaching.

Despite the abundance of audiovisual productions circulating on the internet, one of the challenges when teaching AVT is the difficulty of securing the right materials for a number of reasons. As a rule of thumb, it is preferable to utilise authentic materials; however, these are often subject to copyright infringement and it is not always easy for trainers to obtain the necessary permissions. On top of the hurdles posed by secrecy in the industry, a lot of material available on the internet has already been translated, which risks leading some students astray.

Another issue to consider when developing modules on AVT is the rather high costs of most professional software and their updates, which force some institutions to use freeware. The latter's main advantage is patent: both students and staff can have a copy of the program without incurring into any costs; on the downside, freeware editors often have limited functionalities and do not always allow the user to cover all tasks necessary for the localisation of a product. It is understood that the skills students hone whilst learning how to use a program are transferrable and may be useful to learn similar programs. Paid and proprietary software still prevail in the industry, so many institutions endeavour to acquire paid programs and thus enhance the students' employability.

Some institutions may invest in the building of dedicated spaces, such as computer labs or media rooms, for students to have access to commercial tools. Since software developers are often zealous of licenses and updates, access to the said tools is often heavily restricted to the institution's premises. Some software companies do offer student discounts and time-limited trials but often curtail access and functionalities too (e.g. crippleware). For many training centres, be they universities or vocational centres, the cost of equipment and technical assistance still constitutes a disincentive. To avoid the costs of physical study spaces, HE institutions may consider acquiring cloud-based tools and build a remote learning space where students can access the software without unnecessary hurdles.

The following are some of the questions posed to two experienced translator trainers, Roberto Mayoral and Daniel Gouadec, during an online symposium on translator training (Pym 2000), which are particularly pertinent when thinking on designing a course or module that contemplates the teaching of AVT. The questions are especially relevant for various reasons, the main one being that AVT training is normally offered at academic institutions for graduates or experienced translators, in the form of postgraduate studies.

In an attempt to relate these 18 questions to the specific case of AVT training, the answers draw on the contents explored in the previous sections as well as on existing literature and on personal experience.

1. *What markets should we be training for?*

   Ideally, translation students should be trained to be employable in their field of expertise by simulating professional activities in the classroom (Way 2009). It is therefore customary to teach AVT practices using professional conventions that are widely used in both the international and local industries. If trainers manage to establish links with local companies providing AVT services, students could ultimately boost their employability in the area by taking advantage of situated experiences (e.g. internships or work placements). At the same time, trainers should be familiar and refer to the existing AVT scholarship for students considering pursuing a research career.

2. *Who should be teaching? Who should train translators?*

   In an ideal educational setting, AVT trainers are academics with previous or ongoing professional experience as translators in the industry. Some scholars have argued that trainers need to meet the twofold desirable condition of being experienced translators and interpreters and qualified to teach at university (Mayoral 1998). Chaume (2003:289) rightly points out that meeting such criteria is "utopian, insofar as [the university] imposes a series of obligations on the university lecturer", and these differences between academia and the industry are far from being easily resolved. A fundamental one is the fact that academics are required to conduct research as part of their duties, though this does not always translate in pedagogical improvements because, as Cronin (2005:243) warns, "a danger for researchers in translation teaching is that emphasis on translation can lead to a neglect of teaching, and undue concern with teaching can lead to a neglect of the specificity of the subject taught, to wit, translation."

   Furthermore, as posited by Cravo and Neves (2007:101), "teachers of translation quite often come into the profession from a wide range of initial education/training which is not specifically directed towards translation." Companies' frenetic rhythms and requirements make working in the industry simply incompatible with a successful academic career, which is why, on the one hand, academics tend to have less time for working as freelance translators, and, on the other, professional translators cannot offer many

teaching hours in HE institutions. Some universities also impose exclusive teaching and research contracts in which freelancing would be deemed inappropriate and hence even illegal. Teaching-centred pathways in HE institutions (e.g. teaching fellowship positions in UK universities) were conceived to bridge such a gap, as well as to help cover for teaching buy-outs and research excellence goals. However, the evolution of such positions has led to an overall impoverishment of working conditions and the distribution of labour in HE (Peters and Turner 2014).

3. *How should teachers/trainers be trained?*

   Ideally, AVT trainers should hold an AVT-specific qualification from either taught or research study programmes at postgraduate level. As Nord (1991/2005:214) suggests, "trainers need both practical and theoretical knowledge. They should know the skills and abilities that are required in the profession […], and they should know how to describe them using the concepts and terms of some kind of theory." Also important is to have received training in professional environments, although this is not often the case as academic careers – especially tenured – tend to be incompatible with professional work, as discussed above. It would be advisable that trainers spend time with LSPs or receive regular professionally oriented training by the main stakeholders in the industry (e.g. Continuous Professional Development) to keep up with cutting-edge technologies and the newest advances, as AVT practices have proved to evolve and adopt new forms very rapidly over time (Díaz-Cintas and Nikolić 2017).

4. *How should translators be qualified?*

   Translators should preferably obtain both academic and professional qualifications. Several UK-based translators organisations, such as the Chartered Institute of Linguists (CIoL, ciol.org.uk) and the Institute of Translation and Interpreting (ITI, iti.org.uk), offer an array of certifications and diplomas as well as qualifications and memberships in different areas. In the case of AVT, there is no recognised professional accreditation and independent courses are not often as well recognised as those offered by large translation companies that include technological training (e.g. SDL Education

or TAUS). The first respeaking certification, the Live Respeaking International Certification Standard, was launched by the GALMA research centre and observatory on media accessibility from the Universidade de Vigo, Spain, in 2019 (galmaobservatory.webs.uvigo.es/services/certification). Some major multimedia companies have recently resorted to new, creative ways to attract talent; for instance, Netflix developed an online testing platform, called Hermes (tests.hermes.nflx.io), whose principle was to hire qualified professionals and to subsequently assign them a specific number for tracking purposes.

5. *What is a good training institution?*

   A high-quality AVT training centre should count with experienced academics and translators who teach in industry-like environments, such as specialised labs, where students have access to most translation systems and additional tools, as well as (paper and electronic) dictionaries and bibliographical resources for research-oriented modules. As posited by Kiraly (2000:126), "a networked classroom with a workstation for each student makes it possible for each individual to get extensive hands-on experience actually using his or her emerging computer-based translation skills."

   Following this idea of computer-based classrooms, AVT teaching rooms often take the form of PC clusters where revoicing, subtitling and video editing software is made available to both students and members of staff. Also important is that the institution provides students with enough self-learning methods and tools that can be used at home. The learning environment should propitiate the learning/teaching of professional translation skills, all by including teacher-student contact, b-/e-learning methods (Kiraly et al. 2015) and enough up-to-date resources to stimulate critical thinking throughout.

   The provision of computer labs and similar spaces in HE institutions is never hassle free. As previously mentioned, it might be advisable to consider acquiring cloud-based tools and build a remote learning space where students can access the software. Not only does this promote easier access to resources whenever the campus is closed – for instance, the COVID-19 pandemic forced HE institutions to close down temporarily and rapidly shift

towards distance learning (Li and Lalani 2020) – but it also allows students to work more flexibly and as long as they need.

6. *Do we need supra-national organisations?*
   As AVT becomes more globalised, it would be advantageous to have wider academic and professional organisations that work together to enhance teaching quality and professional standards across continents, like AVTE (avteurope.eu), which is the European federation of national associations and organisations for media translators. At postgraduate level, efforts have taken the form of expert groups and networks, such as the already mentioned EMT (ec.europa.eu/info/resources-partners/european-masters-translation-emt_en) and the International Doctorate in Translation Studies instigated by EST (idts-est.org). However, since AVT practices differ across nations (Section 2.5), supra-national organisations and HE institutions may encounter difficulties to cater for local educational environments, which could potentially become a logistical nightmare.

7. *How many students should be in a translation/interpreting class?*
   Modules would ideally foresee individual teacher-student contact on a monthly basis for monitoring and pastoral care purposes. For this reason, some institutions resort to the role of (personal) tutors, who hold periodical small-group workshops and seminars with their allocated tutees. When students are less numerous in the classroom, chances are that they will participate more actively and carry out translation tasks more regularly. Theory classes (e.g. lectures) can be held with larger groups than practical ones, and doctoral students can provide tutoring or class support as needed (e.g. seminars).

8. *What is a translation class?*
   An AVT translation class is the combination of sequenced student experiences that aim for the acquisition of AVT-specific sub-competences (Hurtado-Albir 2017; Cerezo-Merchán 2018). As Chaume (2003:285) explains, to enrol on an AVT class, students should:

> have sufficient skill in managing the source language […]; have become far more proficient in the use of their mother tongue, especially with respect to matters concerning spelling, grammar and vocabulary; […] basic competence in translating, including knowledge of support tools and materials and the main features of the job market for translators; […] learned how the audiovisual media work through complementary subjects.

These prerequisites reflect to a large extent university curricula's reality, since AVT tuition is usually offered at postgraduate level (Section 4.5.1). Drawing on the answer to question no. 1, trainers ought to situate the learning following a market-oriented approach, thus aiming to hone the students' professional skills in developing semi-real translation commissions and projects.

9. *Should we separate theory and practice classes?*

Albeit primarily a professional practice, AVT is also an academic discipline and, as such, theory cannot be obliterated when designing the curriculum. It has already been highlighted that T&I pedagogical approaches should always be based on appropriate theories (Kiraly 1995), or, else, they would result in ineffective teaching that will not prepare students for the real world's needs. Bartrina (2005:187) also argues in support of the use of theory in the translation classroom as "translators and interpreters need a theoretical field that helps them to be articulate in evaluating all the relevant questions concerning the translating process and the final product."

Theory and practice ought to be interconnected throughout the curriculum and the key issue is to strike a fine balance between the two, with the use of purposeful practical and theoretical activities (e.g. guided translations and translation commentaries) so that students are exposed to academic inquiry and can thus develop critical thinking skills.

10. *Should interpreting be taught before or after written translation?*

Interpreting has not usually been considered an essential part in AVT-specific study programmes even if it could prove fundamental for the development of many skills. Since AVT concerns itself with audiovisual texts, which are halfway in between the oral and the written dimensions (Section 2.1), it could be beneficial to include interpreting tasks (e.g. note taking, conference

interpreting, sight translation) at the beginning of AVT training, though lack of time during the academic year may play against it.

Romero-Fresco (2015:350) argues that the skills proper of interpreting, which require "to listen, comprehend and synthesize the source text and to reformulate it and deliver it live as a target text" are essential in respeaking training too. More recently, experimental research has shed further light on the close connections between respeaking and interpreting, demonstrating that interpreters can be excellent respeakers provided formal training is embedded in the curriculum (Szarkowska et al. 2018).

11. *Should textbooks be used in class?*

In contradistinction to the long list of general translation theory and practice textbooks available in the market (Arrojo 2005), there are only a few AVT-specific training books. Routledge's *Translation Practices Explained* series now includes monographs on AD (Fryer 2016), dubbing (Chaume 2012), respeaking (Romero-Fresco 2011) and subtitling (Díaz-Cintas and Remael 2007, 2020), as discussed in Section 2.2.

In addition to the general textbook contribution by Pérez-González (2014), other AVT-specific manuals that are widely used across non-Anglophone countries are those by Paolinelli and di Fortunato (2005), Pavesi (2005), Perego (2005), Lavaur and Şerban (2008), Martínez-Sierra (2012*b*), Cornu (2014), Bartoll (2015), and Talaván et al. (2016).

12. *Can distance-learning techniques be used in the training of translators?*

This thesis work aims precisely to demonstrate, justify and legitimate the use of cloud-based resources and tools to develop new methods and pedagogical practices that can be ultimately applied to the learning/teaching of AVT, both in face-to-face and distance-learning environments (Section 6.4). The use of cloud technologies does not necessarily apply to e-learning settings only, but they draw on the same principles and can thus complement each other rather well.

13. *Are students being taught to work with the available electronic tools?*

In many AVT study programmes, students are often required to use specific tools, be they freeware or commercial software, that are commonly employed in the industry today (Section 3). In universities that do not enjoy a specialised lab, the use of freeware and online platforms seems to be the most convenient solution (Roales-Ruiz 2016*a*, 2016*b*, 2016*c*).

14. *Do teachers talk to each other about what they do in the translation class?*

There should be an active and fluent dialogue exchange between all members of staff before, during, and after the length of the study programme. The various AVT modes often require hiring specialists in each mode, but some skills and tools are constant across some modes. For instance, the teaching of a specific AVT practice such as SDH is directly linked to professional activities such as interlingual subtitling and respeaking. Although it may not be always possible because of time and space constraints, when designing the curriculum, AVT trainers should foresee calling periodical meetings or using electronic communication among colleagues for monitoring purposes. Some universities also encourage staff to get involved in peer dialogue to review teaching practices through constructive discussion among trainers, working on the premise that close collaboration between colleagues enables trainers to reconsider aspects of their pedagogical approach, such as classroom teaching, feedback on assessment, or development of learning materials.

15. *Should we be producing technicians or humanists?*

AVT professionals need to have a thorough command of the existing tools so that they fit in today's professional market (Kenny 2019). Subtitlers, in particular, are expected to have advanced computing skills and a solid command of subtitling software as they often have to spot clips themselves. However, translation continues to be a human agency and, as such, it does not only require sufficient background knowledge on different fields of expertise (e.g. medicine or law), but also a good understanding of linguistics and related subjects as well as encyclopaedic knowledge and cultural sensitivity. In addition, academic curricula should stimulate critical thinking,

whose ultimate goal is to train future professionals who are conscious of their past, present, and future role in the world.

16. What are the major success areas in current translator-training?

In the specific case of AVT, one of the major achievements has been the greater visibility of the profession, along with the expansion of AVT-specific studies across the globe. The industry seems to be expanding globally with the fast development of VoD platforms and the translators' involvement is also gaining greater recognition thanks to the role played by AVT associations and organisations, including AVTE and ESIST, as well as the numerous professional groups that inhabit the social media.

17. What are the major shortcomings in current translator-training?

AVT education does not come hassle free. As previously discussed, the necessity of investing relatively large sums of money to provide students with the technical equipment and commercial software that is used in the industry is not always possible and may be curtailed depending on the training centres' finances. In terms of the materials and resources made available to trainers, it was previously stated that textbooks hardly ever focus on AVT and, when they do, many publications lack the multimodal dimension and only contain text, thus hindering practical, real-life explanations.

The industry's zeal for copyright compliance may also hamper the retrieval and use of audiovisual materials, especially international entertainment productions like films and TV series. Trainers may have to establish closer connections with the industry or rather become more creative in order to utilise authentic materials, in their attempt to provide translators-to-be with professionally oriented teaching, while complying with the legal constraints.[17]

[17] Following growing concerns over copyright infringement, many VoD platforms, including Amazon Prime, BFI Player, and Netflix no longer allow users to produce screenshots or screen recordings. Online platforms like Vimeo and YouTube also impose restrictions to downloads from external websites and download managers.

18. What innovations should be expected?

The use of corpora, TM and MT systems, AI, and PE are being explored for script translation and subtitling. The wider use of accessibility practices, along with respeaking, are expected to have a greater impact on the number of viewers that audiovisual programmes can reach. Furthermore, ASR constitutes a promising area, not only in respeaking, but also for dialogue transcription (e.g. Translectures, mllp.upv.es/projects/translectures) and, generally speaking, to improve productivity. Customisable and integrated (sub)titles (Section 2.4.2.5) are also being incorporated across different devices (e.g. tables, phones and computers). Embedding accessibility and localisation from the pre-production phase has also been envisaged by authors that are currently exploring the potential of accessible filmmaking (Romero-Fresco 2019).[18] The use of new video formats, and the development cutting-edge viewing technologies (e.g. 3D, virtual reality, 360º video immersion), will also require innovative ways to localise programmes. The integration PM routines through platforms in training practices would also help institutions to better prepare future AVT professionals. Last but not least, cloud-based systems have had a profound impact on working routines and workflows in the industry, so it is only a matter of time that HE institutions start employing such tools to exploit them in educational environments. The incorporation of cloud-based tools to AVT training goes hand in hand with the progress made by HE institutions in embracing distance education. This thesis constitutes a step forward and proposes the provision of AVT training in cloud-based teaching environments.

Generally speaking, AVT training ought to reflect on both current and future practices, as well as to consider the potential and limitations of technology, and henceforth open the door for future improvements. Following a constructivist

[18] Accessible filmmaking is understood as "the integration of AVT and accessibility as part of the filmmaking process, often involving the collaboration between the translator and the creative team of the film" (Romero-Fresco 2013:211). From a practical perspective, its goal is to ensure that the localisation and adaptation of audiovisual programmes be made suitable for users with sensory impairments and users of any type of translations alike in order to reduce the number of constraints and obstacles that translators and localisers encountered in the post-production localisation phase.

approach, the curriculum should be designed according to a set of appropriate aims and learning outcomes, that is, transparent goals that are embedded throughout the learning process and assessment (Morss and Murray 2005). Aims and outcomes need to be purposefully adjusted depending on the specificities of AVT modules or courses, clearly establishing what is expected from the students by the end of the learning process (e.g. full command of industry standard software, awareness and systematic use of subtitling conventions, expertise in the use of dubbing symbols for dialogue writing). With all these premises in mind, the purpose of this thesis is to explore how cloud-based systems and ad hoc online platforms can be suitably incorporated to AVT curricula.

As opposed to the idea that translation courses are saturating the labour market with graduates (Pym 2012), prospective careers in AVT seem to look bright (Estopace 2017), mirroring the expansion that the media and the translation industries have experienced in the last few decades.

The exponential growth of programmes that are distributed in audiovisual format across the globe nowadays (Section 2.3), as well as the financial progress experienced by the language and translation industry in the last decade (LIND Expert Group 2019), support the prediction that the demand for experienced and well-trained audiovisual localisers will continue in the near future, with some language combinations in more demand than others. In a nutshell, “audiovisual translation is here to stay, as companies and organisations around the world continue to recognise the immense value of adapting their content into multiple languages to extend their global reach” (Díaz-Cintas 2019:180).

To train the professionals of tomorrow, however, forward-looking AVT modules need to be designed and developed now, taking into account the linguistic dimension as well as the market reality and the possibilities offered by technology. In this respect, cloud-based ecosystems, translation automation, memory tools, ASR and AI are some of the leading trends that will prevail over more traditional practices (Massey 2018).

Training centres will need to re-examine and modify existing curricula and also embrace certain language combinations in which trained translators still fall short. Programmes of study, as much as AVT trainers, may need to adjust the syllabi so as to not lag behind technical advancements and to cater for the new needs of the industry. Yet, a balance will have to be found to nurture also the linguistic and creative aspects involved in the localisation of audiovisual material as well as the enhancement of critical inquiry among university students.

CHAPTER 5

RESEARCH METHODOLOGY

This section underpins the specific methods under which this thesis has been conducted. According to Orero et al. (2018:107), a research project ought to commence by articulating a research question, because it:

> is the core of the design of an experiment, and indeed of any research project. Without a well-defined research question that is operationalised properly, an experiment lacks purpose and cannot lead to valid results. Research questions should be clearly defined and based on previous literature and findings.

This research project draws on previous professional experience and research, according to which an initial hypothesis was established, namely, that the use of professional cloud-based subtitling tools is appropriate for the training of translators and also hold the potential of being integrated in ad hoc didactic platforms to be even more pedagogically sound. At the time this doctoral project started back in 2016, no cloud-based subtitling tools or AVT platforms were being used for didactic purposes.

As Saldanha and O'Brien (2014:17) explain, "it is generally accepted that research questions evolve over time" on account of the researchers' growing familiarity with the research questions and methods. The above research question has led, through the many shapes this research has taken over the years, to many other assumptions and questions. Yet, the objective has remained on focus, which is to better understand cloud-based subtitling tools and to elucidate their pedagogical potential, so that they can be adapted or fine-tuned for use in the training of future professionals.

The goal is not to ascertain whether or not students' translation and instrumental skills are better honed using cloud-based software as opposed to traditional desktop software. Neither is it to shed light on how the said tools can be more or less useful in face-to-face, b- or e-learning environments than other tools. As a

matter of fact, this thesis does not entail a comparative analysis, but rather a descriptive, empirical, and critical investigation of the use of cloud-based subtitling tools for didactic purposes. The ultimate goal of this analysis is to better understand how existing cloud-based tools address industry demands and are suitable for their application to HE settings as well as to propose ways in which they can lead to state-of-the-art AVT education models in cloud ecosystems.

For the design of the experiments included in the AR cycles (Section 5.1), some general queries were posed to articulate this inquiry and tailor the experiments accordingly: Are cloud-based tools useful to teach in HE? Are they user-friendly enough for students to learn to translate audiovisual texts? Can project- and task-based approaches be exploited in the cloud? How can existing cloud-based tools be used in the AVT classroom? How does an educational cloud-based AVT ecosystem have to be in order to meet both pedagogical and industry demands?

To lead this research project to a fruitful conclusion, a series of steps have been followed:

- establishing collaboration with a software developing company to have full access to a professional online subtitling tool, i.e. OOONA Tools;
- reaching an agreement with a film distribution company to use authentic film materials;
- designing and organising of a series of subtitling workshops (henceforth experiments) in which cloud-based subtitling solutions are used to teach how to subtitle authentic audiovisual material (i.e. spotting and template translation) in academic settings;
- gathering data from experiment attendees to gauge their perceptions;
- cleaning the data and extracting key quantitative and qualitative information;
- analysing the data with statistical software and text editors;
- evaluating cloud-based tool OOONA Tools with the help of existing ISO materials;

- determining how and the extent to which cloud-based subtitling tools can be used in the AVT classroom;
- proposing changes to the existing tools to turn them into salient alternatives for the teaching of AVT in HE environments; and
- opening up and briefly exploring the possibility of a potential development of an educational platform of the tool in future research.

Drawing on Saldanha and O'Brien (2014) the methodology of this research can be considered to be:

- descriptive and empirical with the use of surveys filled in by hundreds of respondents;
- experimental with the running of hands-on subtitling sessions with numerous participants;
- quantitative and qualitative with the analysis on the data collected through the surveys;
- interactive with the observations and questions made by participants during the experiments;
- analytical with the study of an existing tool; and
- creative and inductive with the proposal of changes for the fine-tuning of an existing tool as well as the proposal of a new pedagogical environment in the form of a cloud-based educational platform.

An important matter that has arisen during the development of this research is the assessment of its quality in terms of validity, reliability, and generalisability. Research validity looks at how findings are "sufficiently authentic (isomorphic to some reality, trustworthy, related to the way others construct their social worlds) that I may trust myself in acting on their implications" (Guba and Lincoln 2005:205, in Saldanha and O'Brien 2014:28). Reliability, also known as reproducibility or replicability, "refers to the extent to which other researchers […] could generate the same results, or come to the same conclusion, if investigating the same question, using the same data and methods at a different time" (ibid.:35).

To increase the reliability of the results, the different AR cycles have been clearly distinguished by the use of the same methods and questions, as will be explained in the next sub-sections. Generalisability has to do with the impact and extrapolation of the research findings to a greater social reality or population. In translator training research, this is often cumbersome, if not impossible, as the learners' context and situations can change drastically; however, as Saldanha and O'Brien (ibid.:36) posit, "a lack of generalizability does not necessarily invalidate a research project" as long as the research findings contribute beyond the particular – for instance, testing the viability and transferability of a framework, or, in this case, an ecosystem.

Finally, this research also complies with UCL Research Ethics Framework (ethics.grad.ucl.ac.uk) in terms of anonymity and data processing. There is no data protection number assigned to this research as determined by UCL Legal Services. The surveys were anonymised on the UCL's cloud-based survey server (opinio.ucl.ac.uk) and thereafter did not require any informed consents as they did not compromise personal information. Furthermore, there is no risk of personal information leaks occurring as the respondents were never asked to submit any personal information that would allow to identify them in any way whatsoever.

5.1. Action Research Framework

Little research has been carried out on the advantages, and drawbacks, of utilising the AR paradigm in TS (Cravo and Neves 2007), translator training (Kiraly 2000; Hubscher-Davidson 2008), or AVT (Bogucki 2010; Neves 2016). AR is considered to be "an *enjoyable* way of helping us to reflect and act in order to improve our teaching and assessment activities" (Hubscher-Davidson 2008:90). The use of AR cycles seems pedagogically sound and holds many advantages for HE, as previously reported by scholarly research (Greenwood and Levin 1998/2006; Levin and Greenwood 2008; Gibbs et al. 2016), although, as claimed by Greenwood (2007), the spread of AR practices in HE has not been without its

challenges. AR can also inform translator training practices, particularly AVT education, by evaluating the teaching/learning methods and students' performance as well as the tools being used.

An ongoing debate is whether AR can be considered a method, a methodology, a set of strategies, an approach, or a paradigm (Cravo and Neves 2007). Following Costello (2003:5–6), AR may be understood:

> as a term, process, enquiry, approach, flexible spiral process and as cyclic. It has a practical, problem-solving emphasis. It is carried out by individuals, professionals and educators. It involves research, systematic, critical reflection and action. It aims to improve educational practice. Action is undertaken to understand, evaluate and change. Research involves gathering and interpreting data, often on an aspect of teaching and learning. Critical reflection involves reviewing actions undertaken and planning future actions.

Firstly introduced in the 1940s in the US by social scientist Kurt Lewin, AR has progressively be embedded within educational research, particularly since the turn of the century, soon becoming a buzzword in educational circles (Noffke 1994). There are many different models of AR, most of which have been designed for primary and secondary tuition (Bassey 1998). AR in educational settings has received much attention by academics and HE educators, leading to an ever-growing number of scholarly outputs (Ferrance 2000; Costello 2003; Stringer 2007/2014; Noffke and Somekh 2009; Bradbury 2015).

The fruitful applications of AR can be explained by the fact that it supposedly transfers the results of the research directly back to the participants, because:

> [it] enacts localized, pragmatic approaches to research, investigating particular issues and problems in particular sites at particular moments in lives of interacting individuals and groups. Its purpose is to provide participants with new understandings of an issue they have defined as significant and the means for taking corrective action. The processes are necessarily participatory, enabling all people affected by the issue to have their voices heard and to be actively engaged in research activities (Stringer 2007/2014:61).

The definitions of AR vary greatly across the literature, but they all seem to focus on the following ethos: promoting change and improvements by undertaking practice-oriented cyclical research in a particular educational setting. AR, which

usually takes the form of cycle-bound case studies, constitutes a process of informed trial and error that utilises evidence (i.e. collected data) to improve the subjects' education (i.e. students' tuition). In other words, and as posited by Dick and Greenwood (2015:195), "the core of action research is the constant confrontation of reflection and action, theory and method, theory and practice aimed at producing understanding and effective action."

McNiff and Whitehead (1996/2009) claim that AR is practice based and collaborative, aims at improving practice and creating new knowledge, focuses on refining learning, stimulates knowledge and research creation, and contributes to social and cultural transformation. Similarly, Denscombe (2010) explains that AR arises as a routine part of activities in the real world, is geared to changing matters, is committed to apply and evaluate the impact of its findings on practice, and, finally, involves practitioners' active participation.

Overall, AR is a disciplined inquiry that aims to inform teaching practices, and whose subsequent validation is also worth of being disseminated as any other type of research (McNiff and Whitehead 1996/2009). Therefore, as argued by Stringer (2010:317), "practitioners need to develop the ability to support involvement in actions as well as the capability to critically reflect on process and outcomes of action research."

A closer look at the aforementioned characteristics unveils that, in AR, change is implicitly envisaged to be a widespread major alteration at different levels, including the practitioners' self-development and the institutions' courses (e.g. programme rationale, syllabi, lesson plans, etc.). Research feeds back directly into practice as part of an ongoing research cycle, which forms part of the professional duties of the educator, who, as an active participant, needs to own the research and outputs as a continuum.

As seen in the literature, there is a common misunderstanding that AR constitutes a single methodology, whereas, in fact, it can take multiple forms (Dick 2002:163). As Bradbury and Reason (2012:1) put it, AR "is not so much a *methodology* as an *orientation to inquiry* that seeks to create participative communities of inquiry

in which qualities of engagement, curiosity and question posing are brought to bear on significant practical issues." For authors like Ferrance (2000:2), AR:

> is *not* problem-solving in the sense of trying to find out what is wrong, but rather a quest for knowledge about how to improve. Action research is *not* about doing research on or about people, or finding all available information on a topic looking for the correct answers. It involves people working to improve their skills, techniques, and strategies. Action research is *not* about learning why we do certain things, but rather how we can do things better. It is about how we can change our instruction to impact students.

In a nutshell, AR is "a practice for the systematic development of knowing and knowledge, but based in a rather different paradigm from conventional academic research" (Bradbury and Reason 2012:4). It is also pragmatically oriented inasmuch as it sets out to produce practical knowledge to increase well-being in a specific specialised area or community.

In its application to HE settings, AR ought to be primarily practical and driven by the need to solve specific challenges in a given educational setting. According to Costello (2003), a basic AR model comprises planning, action, observation, and reflection, as illustrated in Figure 5.1:

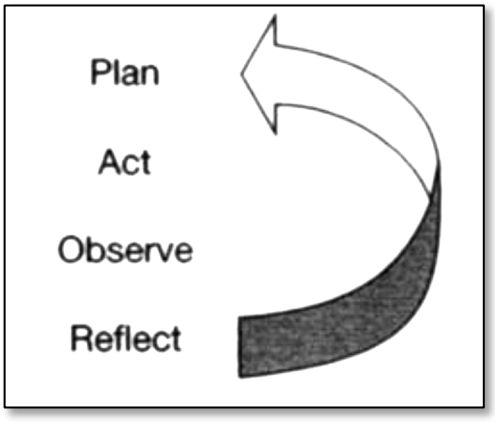

Figure 5.1. Basic AR model (Costello 2003:7)

More specifically, and as shown in Figure 5.2, AR is developed in cycles that comprise five phases of inquiry: identification of problem area; collection and organisation of data; interpretation of data; action based on data; reflection and

evaluation of the results; and preparation for the subsequent steps (Ferrance 2000:9).

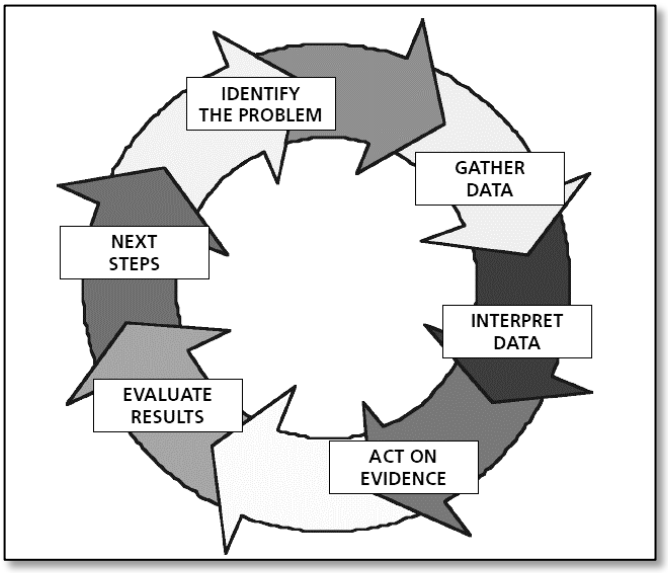

Figure 5.2. AR cycle (Ferrance 2000:9)

The aforementioned phases of inquiry have also been visually represented in (never-ending) AR cycles, each of which, according to Stringer (2007/2014), include looking, thinking, and acting, as illustrated in Figure 5.3:

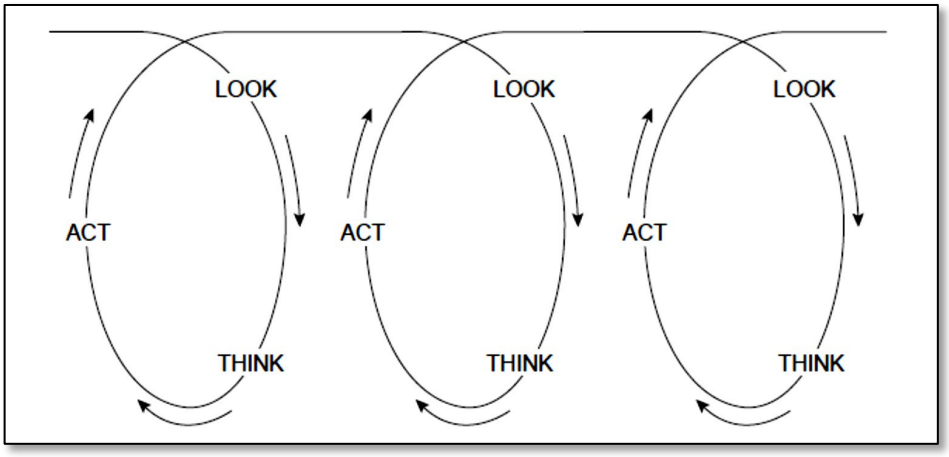

Figure 5.3. Action research interacting spiral (Stringer 2007/2014:9)

The first phase consists mainly of gathering data, by means of which one can acquire the information necessary to stimulate critical thinking. In Stringer's (ibid.:101) words, "to look" is:

> to gather information that will enable researchers to extend their understanding of the experience and perspective of the various stakeholders—those mainly affected by or having an influence on the issue investigated. The first cycle of an action research process is therefore qualitative in nature, requiring researchers to gather information about participants' experiences and perspectives and to define the problem/issue in terms that "make sense" in their own terms. We seek to understand participant experiences in order to work toward a viable solution in which people will invest their time and energies.

The second phase consists of interpreting the data to develop an understanding of a certain situation that would ultimately lead to a more effective and sustainable resolution of what is being researched. Again, in Stringer's (ibid.:137) words, "to think" is:

> to interpret and render understandable the problematic experiences being considered. Interpretation builds on description through conceptual frameworks—definitions and frameworks of meaning—that enable participants to make better sense of their experiences. It uses experience-near concepts […] to clarify and untangle meanings and to help the individuals illuminate and organize their experiences.

The third phase encompasses the formulation of action plans to resolve the problems or issues identified over the previous phases of the AR cycle. For Stringer (ibid.:168), "to act" is:

> [to] formulate plans that enable [participants] to systematically enact the required tasks and activities. The following procedures are based on a framework of action that involves three phases: Planning, which involves setting priorities and defining tasks; implementing activities that help participants accomplish their tasks; reviewing, in which participants evaluate their progress.

Once theses phases have been completed, a new AR cycle starts, thus triggering the three main phases again, in attempt to solve an issue that was identified during the first research cycle. Figure 5.4 below displays a more detailed account of the factors that can be commonly found in a study carried out within an AR framework:

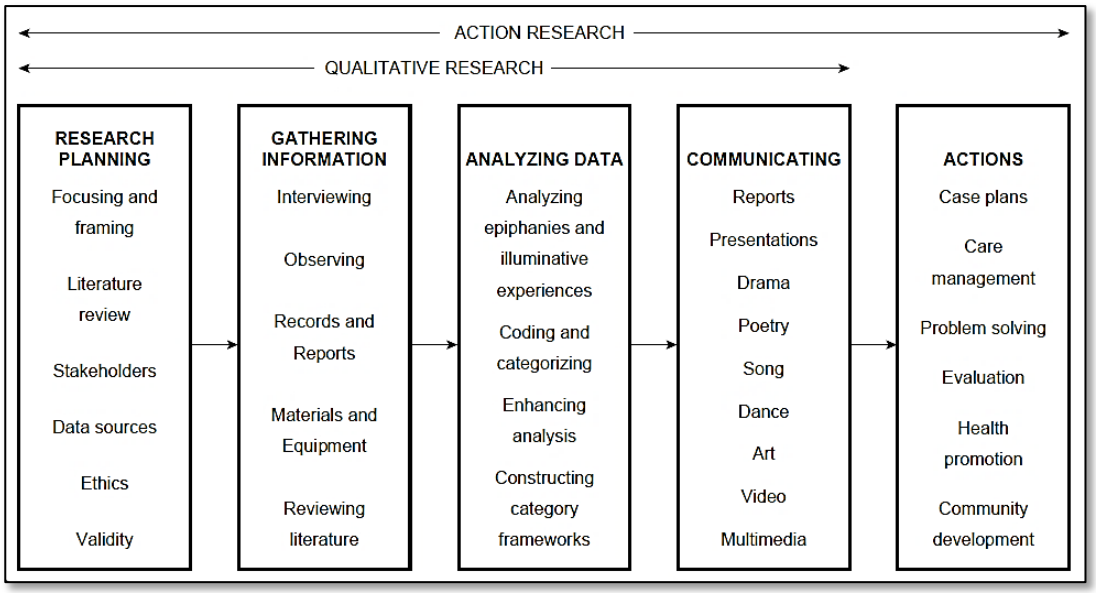

Figure 5.4. AR framework breakdown (Stringer 2007/2014:211)

According to Denscombe (2010:125), "the crucial points about the cycle of inquiry in AR are: (1) that research feeds back directly into practice; and (2) that the process is ongoing." Following this approach, the practitioner's critical reflection does not limit itself to the identification of issues that are worthy of investigation, on the assumption that they would improve practice and make an impact on their students; reflection also triggers the evaluation of changes that would subsequently prompt further AR cycles.

AR has certain limitations. For instance, it is applied to a specific learning/teaching context, deriving from the needs of the students, educators and institutions in a specific locality (Noffke 2009), and it often restricts itself to one-off pieces of research (Denscombe 2010). Nonetheless, according to Dick (2002), tight spirals of AR confer the advantage of having multiple chances to test assumptions and interpretations as well as to develop plans to test in action. It can thus be argued that AR cycles stimulate self-reflection and justify the need to carry out series of experiments, rather than just one, hence creating an overall sense of spatio-temporal research continuity.

As discussed by scholars like Dick (2002) and Stringer (2010), AR can be theory-driven, which aims to update, refine, or challenge the existing literature, but it is more often data-driven, combining quantitative and qualitative methods to gather

and analyse data to put aside preconceptions and take into account specific learning/teaching factors and settings. It seems legitimate to assume that the larger the collected data is, the more resources practitioners can use to draw conclusions. It only follows that change-driven inquiry and ground-breaking developments can be more easily achieved through data-driven AR.

In this thesis, the data-driven AR cycles consist of different experiments that took place between 2016 and 2019 at different European HE institutions (Section 5.2.2) that offered, or were planning to offer, courses and programmes of study on AVT, and involved three main stakeholders:

- Students of modern languages or TS with ample, some, little, or no experience in AVT;
- alumni of modern languages or TS, some of them with professional translation experience; and
- translation trainers and foreign language teachers with ample, some, little or no experience in AVT, who were teaching AVT in higher or further education.

This thesis is encased in four main cycles as illustrated in Figure 5.5:

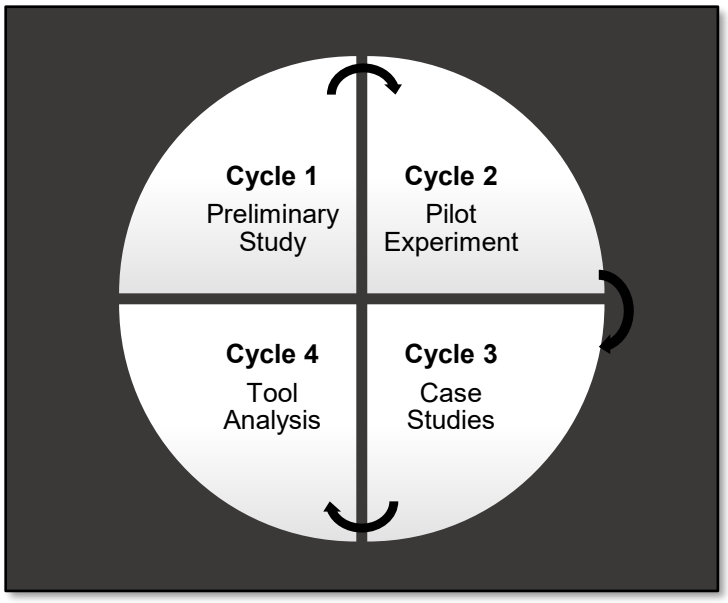

Figure 5.5. AR cycles configuration

A detailed explanation of the different steps followed for each cycle is offered in the next sections.

5.2. Descriptive-experimental Methods

Descriptive-experimental studies encompass the use of different methods to gather and analyse qualitative and quantitative data. According to Suojanen et al. (2014:102), they constitute a dialogic method to gather data that is structured and "typically analysed quantitatively". This approach can be used in AVT research to evaluate the usability of a system by applying a user-centred methodology of inquiry.

In the case of the current research project, surveys were the main heuristic tool to gauge the participants' perceptions of the cloud-based subtitling tool used in the experiments: OOONA Tools (Section 3.5). The surveys adhered to the directions for empirical research outlined by Alvira-Martín (2014), according to whom the use of a survey-based methodology entails five main steps:

1. design: the questions that have been produced for the different questionnaires are varied and allow for the gathering of both quantitative and qualitative data. They take the form of multiple-choice, Likert scaling, contingency, dichotomous, and open-ended questions;
2. sample selection: the surveys designed for this thesis target a specific group of participants, including students, alumni, translators, teachers, and academics willing to take part in the experiments;
3. fieldwork: in the preliminary study, the active link to the online questionnaire was distributed through mailing lists, Moodle forums, personal invitations, social networks, translators' associations, and academic circles; in the subsequent pilot experiment and case studies, the questionnaires were distributed in the classroom in the form of an URL and QR code (Appendix 2);
4. preparing the data: a first analysis of the answers needs to be carried out to discard those surveys that contain inconsistencies, incomplete

answers, or any other issues that could ultimately affect the quality of the statistical analysis (e.g. outliers) and the results; and

5. data quality analysis: the results ought to be analysed attending to social factors and pertinence of the answers.

During the survey design process, close attention was paid to the directions provided by Saldanha and O'Brien (2014:157), according to whom questionnaires should preferably include both closed and open questions, as the latter "allow the researcher to collect qualitative data and to compensate, to a small extent, for the restricted nature of the questionnaire." The surveys were also purposefully tailored to their respective populations: (1) a survey for trainers (Section 5.2.1), and (2) a survey for learners (Section 5.2.2).

The survey for trainers was distributed on the internet, whereas the survey for learners was distributed in-person at several European HE institutions. The original survey for trainers was used only once and, thus, no modifications were added. A first version of the survey for learners was used during the pilot experiment (Section 5.2.2.1) and subsequent amendments were introduced to improve its accessibility and clarity, as well as to fine-tune its scope for the following AR cycle. Hence a second and final version of the survey for learners was developed to be used during the study experiments (Section 5.2.2.2).

In terms of personal data, the surveys were conceived as anonymous from the very beginning. Following the recent EU's application of the General Data Protection Regulation 2016/679, the use of questions that prompt respondents to supply personal information was severely curtailed. Knowing the respondents' background, however, can be deemed of utmost importance in order to analyse their responses more conclusively, especially in HE settings. Hence the inclusion of questions about age, sex, native and second languages, and highest level of studies attained. This approach finds its backing in the position paper authored by Orero et al. (2018:111), which sets out to establish the basics of experimental research in AVT and concludes the following:

> the participant sample should be identified appropriately and described adequately […], including the information on the number of participants, their mean age (and standard deviation), sex, years and type of education, and any relevant details regarding the participant profile, for example hearing (or sight) status, reading proficiency, language skills, and language history.

To better tailor the experiments of this thesis, a preliminary study (Section 5.2.1) was carried out in 2016, several months prior to the beginning of this research. Targeting subtitling trainers, its aim was to gather data about subtitler training in online environments and consisted of a questionnaire (Appendix 1). In addition to being asked about their education and professional background, the respondents were prompted to descriptively account for their awareness, or utilisation, of cloud subtitling in the context of online training provision. The survey set out to establish whether cloud environments were common in e-learning AVT environments and to ascertain how eager trainers were to teach subtitling in cloud-based ecosystems. The preliminary study proved central to the design of the two subsequent AR cycles.

The pilot study (Section 5.2.2.1) was the first experiment with learners of subtitling and was followed by another ten study experiments (Section 5.2.2.2). The pilot study's questionnaire (Appendix 3) included two sections that were subsequently removed from the following case studies' questionnaires. The said sections aimed to gauge the participants' perception on the configuration and format, as well as the organisation and content, of the workshop. The former allowed for a better understanding of the theory-practice balance and to ascertain whether learning/teaching materials and tools were adequate. The latter had little potential for future surveys insofar as students were enquired about the specific organisation of the first learning experience, i.e. the film festival run by CinemaBioscoop and UCL. Both sections, however, were useful to validate the contents and logistics of the pilot study and provided the insights necessary to implement learning/teaching changes in the subsequent study experiments.

A section on the usefulness of cloud-based subtitling tools was present in both learners' surveys to gauge the students' perceptions of OOONA Tools, which were being used for the first time by virtually all participants. Following feedback

from the pilot study, the questions on the use of cloud-based translation and subtitling tools and the usefulness of OOONA Tools were restructured and fine-tuned in the study experiments. The resulting questionnaire can be found in Appendix 4.

As already mentioned, the online surveys were drafted using Opinio (opinio.ucl.ac.uk), a web-based survey tool, free for UCL staff and postgraduate students, that provides a framework for authoring and distributing questionnaires as well as a range of additional features, including the possibility to export the results in different formats and the semi-automation of graph and diagram creation process. The quantitative data was subsequently analysed using various statistical programs, including R (r-project.org), SPSS (ibm.com/products/spss-statistics), and Statgraphics (statgraphics.com).

The qualitative data has been analysed using an inductive approach, that is, moving from concrete to more abstract levels (Saldanha and O'Brien 2014). The coding and subsequent analyses of the said data were done using Nvivo (qsrinternational.com/nvivo), which allows to structure qualitative data in nodes, i.e. semantic clusters that contain references. All passages or discourse segments that are interconnected or somehow related by previously set parameters are considered to be references. The respondents' qualitative responses were organised and categorised to then establish comparisons and cross-checks between the different responses.

Qualitative content analysis is a broad term used "to describe analytical moves which consist of identifying themes, looking for patterns, making interpretations and building a theory" (Saldanha and O'Brien 2014:190). Scholars in the social sciences have often resorted to Smith's (1996) Interpretative Phenomenological Analysis (IPA), which is a methodical framework to study phenomena that occur in a specific context. According to Smith (ibid.:264), IPA can be used:

> to explore the participant's view of the world and to adopt, as far as is possible, an 'insider's perspective' […] of the phenomenon under study. At the same time, IPA also recognises that the research exercise is a dynamic process. While one attempts to get close to the participant's personal world, one cannot do this directly

> or completely. Access is both dependant on, and complicatsed by, the researcher's own conceptions which are required in order to make sense of that other personal world through a process of interpretative activity

Further, IPA focuses on the sense-making process experienced by participants and the researcher, and involves "detailed examination of the participant's lifeworld; it attempts to explore personal experience and is concerned with an individual's personal perception or account of an object or event" (Smith and Osborn 2008:53). The IPA framework enables the researcher to analyse small samples of qualitative answers and was particularly valuable during the pilot study phase. The respondents' accounts, which followed step-by-step experiences and drew on their own practical use of the software, led to discussions that were useful to evaluate and measure their satisfaction with the tool as well as to better understand their recommendations and proposals. No formal interviews have been carried out for this research work; however, the IPA framework can potentially yield far-reaching results on cloud subtitling and will be considered for future research.

The next sections offer a summarised account of the surveys that were carried out as part of this thesis's fieldwork between 2016 and 2019. The experiments from AR cycles 2 and 3 took the form of cloud-based subtitling workshops in which a theoretical introduction to the topic was followed by a hands-on subtitling session with the cloud-based tool OOONA Tools (Section 3.5). At the end of each experiment, students were requested to complete an online survey to express their views on the experiment, the experience of working with OOONA Tools, and cloud subtitling in general. The configuration of these research-led teaching experiences totalled 11 experiments (including one pilot study) and involved over 300 students from different European institutions (Section 5.2.2).

5.2.1. Preliminary Study with Trainers

This first AR cycle consisted of an online questionnaire, comprising 24 questions, and was administered among subtitling trainers from all over the world in June 2016, with the objective of shedding light on the uses and applications of cloud-based subtitling tools in HE and other learning/teaching settings. It was presumed

that, back in 2016, the use of such tools was heavily restricted to the most technologically driven stakeholders from the translation industry and that they had not made enough inroads into T&I institutions yet. Hence the need to appraise the trainers' perceptions on the potential of the said tools in training environments.

The survey was completed by 20 trainers, although another 60 people accessed and left it in draft, most probably because respondents had to have experience in online subtitling training. The non-response error – i.e. selected respondents from a given sample who failed to respond appropriately – occurred in this survey and reduced the final number of valid surveys to N=19. Drawing conclusions out of such a small sample may seem nugatory; however, to participate in this study, respondents had to be trainers involved in the teaching of subtitling exclusively in e-learning environments, which was a niche market back in 2016. In hindsight, such limitation seems unnecessary and the survey could have benefited from a larger number of participants. Responses are illustrated in Table 5.1 below:

CYCLE 1 SURVEY				
CODE	DATE	INSTITUTION	LEARNING SETTING	INVITEES (SURVEY RESPONDENTS)
Pre	June 2016	N/A	Online subtitler training environments	26 (20)
Total number of respondents				20
Incomplete or invalid surveys				1
Final number of valid surveys				19

Table 5.1. Details of preliminary study

The questionnaire (Appendix 1), whose results are fleshed out in Section 6.1, was divided into five main parts: (1) personal information (three questions), to define the respondents' social background; (2) education and experience (five questions), to gain an idea of their experience on subtitling training; (3) online subtitling course (nine questions), to understand the nature and characteristics of the courses taught by the trainers; (4) cloud-based subtitling tools (six questions), to shed light on the tutors' opinion about the potential benefits of cloud-based solutions in training and their understanding of the industry; and (5) the last part,

in which the respondents were asked to provide further comments. Table 5.2 summarises all questions asked in the form of keywords:

PRELIMINARY STUDY SURVEY QUESTIONS			
SECTION	TOPIC	QUESTIONS	INFORMATION BEING ASKED
1	Personal information	Pre_Q1	Sex
		Pre_Q2	Age
		Pre_Q3	Country/language
2	Education and experience	Pre_Q4	Profession
		Pre_Q5	Education
		Pre_Q6	Subtitling training
		Pre_Q7	Subtitling training setting
		Pre_Q8	Subtitling experience
3	Online subtitling course	Pre_Q9	Training institution
		Pre_Q10	Number of students
		Pre_Q11	Language combination
		Pre_Q12	Number of hours
		Pre_Q13	Number of lessons
		Pre_Q14	Course evaluation forms
		Pre_Q15	Software
		Pre_Q16	Course satisfaction
		Pre_Q17	Students' achievements
4	Cloud-based subtitling tools	Pre_Q18	Learning/teaching
		Pre_Q19	Cloud subtitling in use
		Pre_Q20	Cloud subtitling satisfaction
		Pre_Q21	Future use of cloud subtitling
		Pre_Q22	OOONA Tools awareness
		Pre_Q23	Cloud subtitling training
5	AOB	Pre_Q24	Further comments

Table 5.2. Questions from the preliminary study

The answers to the above questions are analysed in Section 6.1.

5.2.2. Studies with Learners

The results of the preliminary study (Section 6.1) were essential to fully grasp the trainers' insights into subtitling and to conceptualise the subsequent experiments with learners. The latter were conducted with the aim of exploring the pedagogical potential of cloud-based systems by means of testing real-life teaching experiences.

Three main requirements were considered when devising the case studies. Firstly, granting access to OOONA Tools for all experiment participants;

secondly, designing the experiments as hands-on subtitling workshops; and, thirdly, creating and distributing an anonymous survey in which the respondents could include their evaluations and comments on the use of OOONA Tools.

This part of the research was conducted between 2017 and 2019 and consisted of two AR cycles. A pilot study was run to validate the research methodology and to collect data in alignment with the research objectives (Section 5.2.2.1). In the light of the results yielded by this pilot, amendments were made to the survey as well as to the subtitling exercises and easy guides, in order to run subsequent experiments in different European HE institutions (Section 5.2.2.2).

5.2.2.1. Pilot Experiment

The first teaching experience (AR cycle 2) will be referred to as the pilot experiment. It took the form of a hands-on subtitling workshop run as part of the Dutch Student Days (alcs.ac.uk/student-days), held at University College London, UK, in late March 2017. This workshop, attended by over 70 undergraduate students of modern languages, was funded by the Association of Low Country Studies in partnership with four UK universities (Newcastle, Nottingham, Sheffield, and UCL) and the Embassy of the Netherlands in the UK. The non-response error also occurred in this survey and the final number of valid surveys was lower than the number of participants, as illustrated in Table 5.3:

CYCLE 2 EXPERIMENT				
CODE	DATE	INSTITUTION	LEARNING SETTING	PARTICIPANTS (SURVEY RESPONDENTS)
Exp. 0	23 March 2017	University College London, UK	ALCS Dutch Student Days	77 (54)
			Total number of participants	77
			Total number of respondents	54
			Incomplete or invalid surveys	8
			Final number of valid surveys	46

Table 5.3. Details of pilot experiment

The workshop was conceived as a project-based, situated learning experience with a strong emphasis on the authenticity of the task: the attendees had to subtitle short films for a festival. In a similar vein to the Spanish short film festival project run at Sheffield Hallam University since 2014, the Association of Low Country Studies included this activity as part of their long-standing annual Dutch Student Days events.

The participants, who had little experience in subtitling (or translation), were given a practical introduction after which they had to produce subtitles from Dutch into English. The materials used were short films produced by independent Dutch filmmakers and compiled and curated by the Dutch film association CinemaBioscoop (cinemabioscoop.eu). The subtitled short films were screened in the evening, as part of the cinema festival held at a nearby picture house.

The contents and materials for the session consisted of 48 subtitle templates produced from 12 clips (i.e. each clip was split into four templates to foster teamwork and to arrange post-translation reviewing exercises). All clips were in Dutch, except for one that mixed up English and Dutch. The templates were created with the help of two Dutch-speaking professional subtitlers and a film distributor. After a short theoretical introduction and a step-by-step guide on OOONA Tools, students were prompted to perform an error-spotting exercise on Create Pro, a template-translation task on Translate Pro and a peer-review of another team's translation.

The exercises, which aimed at helping students familiarise themselves with two key subtitling phases (i.e. text timing and template translation or origination), were preceded by a theoretical introduction that also included a warm-up activity and self-study materials presented in a 13-page booklet that was conceived as both a step-by-step guide and a way to avoid unnecessary note-taking during the experiment (Appendix 2). Arguably, the scope of workshop was rather ambitious since it prompted students to complete subtitling activities that often require further exposure and guided training. Additionally, there was an expectation that workshop attendees would perform rapidly and effectively so that the cinema festival could take place on the same day.

The first exercise prompted students to identify errors present in the pre-timed subtitle template. The clip lasted less than one minute and was extracted from Jens Rijsdijk's *These Dirty Words* (2014). It contained 10 subtitles that included a variety of errors: unconventional layout and position, inadequate reading speed values, poor segmentation and timing, and subtitle lines with too many characters, among others. The participants had to re-spot some parts of the clip to better accommodate the dialogue; for instance, by merging or dividing subtitles or altering the in or out timecodes so that subtitles followed utterances closely.

The booklet (Appendix 2) contained detailed instructions with screenshots and guided the students on how to use the Create Pro tool to work with a pre-configured project, saved as a .json file, which contained the said subtitles and the link to the video, which was hosted on a private YouTube channel. The booklet also included a key to the exercise, containing hints for students and indicating whether each subtitle's errors were related to timing, position, layout, or segmentation. The students still had to identify them and make a well-informed decision on how to solve each issue by applying the strategies discussed in the workshop and using the tool's shortcuts and commands explained in the booklet.

In the second exercise, using the Translate Pro module, students had to translate a pre-timed subtitle template (also in .json format) from Dutch into English. Each template contained between 20 and 30 subtitles and was assigned to a team of 3–4 students. Each team had previously received a copy of the short film they had to translate a couple of days in advance so that they could familiarise themselves with the dialogue lines and the context of the clip. Upon completion of their translation, they then proofread another team's translation by exchanging exported files or by simply swapping places. They fed back on their revision to the other team and applied changes wherever necessary, upon agreement with other colleagues.

After the revisions, students were instructed to send their subtitle files to the workshop organisers so that they could be joint together and subsequently burnt onto the corresponding clips to be screened in the evening festival. Students were also asked to complete the online questionnaire (32 questions) hosted on Opinio

(Appendix 3), which proved fundamental to fine-tune the experiment's contents and teaching methods for the following sessions. Table 5.4 offers a summary of all questions, including key descriptors that define the nature of each of them:

PILOT STUDY SURVEY QUESTIONS			
SECTION	**TOPIC**	**QUESTIONS**	**INFORMATION BEING ASKED**
1	Personal information and academic background	Pi_Q1	Sex
		Pi_Q2	Age
		Pi_Q3	Country
		Pi_Q4	Native language
		Pi_Q5	Other languages
		Pi_Q6	Level of studies
		Pi_Q7	Academic institution
		Pi_Q8	Translation training
		Pi_Q9	Subtitling training
2	Workshop configuration and format	Pi_Q10	Difficulty of workshop
		Pi_Q11	Interest
		Pi_Q12	Theory
		Pi_Q13	Hands-on exercises
		Pi_Q14	Learning tools difficulty
		Pi_Q15	Learning tools use
		Pi_Q16	Quality of materials
		Pi_Q17	Subtitling understanding
		Pi_Q18	Subtitling interest
		Pi_Q19	Opinion about workshop
3	Usability of OOONA Tools	Pi_Q20	OOONA Tools overall opinion
		Pi_Q21	Exercise 1 (Create)
		Pi_Q22	Exercise 2 (Translate)
		Pi_Q23	OOONA Tools as a learning tool
		Pi_Q24	Future use of OOONA Tools
		Pi_Q25	Strong points of OOONA Tools
		Pi_Q26	Weak points of OOONA Tools
		Pi_Q27	Comments about OOONA Tools
4	Workshop organisation and content	Pi_Q28	Suitability of films
		Pi_Q29	Content organisation
		Pi_Q30	Participation
		Pi_Q31	Comments about organisation
5	AOB	Pi_Q32	Opinion

Table 5.4. Questions from the pilot study

The answers to the above questions are analysed in Section 6.2.

5.2.2.2. Study Experiments

Following the pilot study, the next AR cycle started by building on the gains and pitfalls of the workshop's pilot edition, which shed light on the students' perception of the workshop in general, and the cloud-based tools in particular, and helped to draw a list of action points to improve the experiments, especially in terms of overall duration, theory-practice balance, printed materials, reasonable adjustments of difficulty level, length of clips and subtitle exercises, and teamwork, among other aspects (Section 6.2.5).

The above reflections were followed by a reconfiguration and customisation of the upcoming workshops in the light of the bottlenecks and areas of improvement reported. From a teaching and AR research perspective, this process was also food for thought to further develop leadership and didactic methods for the teaching of cloud subtitling.

The study experiments' questionnaire was edited too. As previously mentioned, the pilot's questionnaire was deemed too long, hence discouraging some attendants from answering it, and was almost exclusively centred on quantitative data (i.e. multiple-choice and Likert-type questions). It was established that qualitative data would be helpful to gauge the students' opinion in further depth. The study experiments' survey was therefore reduced by half and capitalised on two open-ended questions in which students were asked to write an account on the use and applications of OOONA Tools (Appendix 4).

AR cycle 3 lasted between May 2017 and June 2019. A series of experiments – some of which spanned over several sessions and teaching days – were carried out in different European HE institutions. The main goal of this thesis being to perform an initial exploration on the uses and applications of cloud-based tools, it was deemed advisable to keep surveys identical and careful consideration was given to differences across workshops to ensure consistency and minimise any potential negative impacts on the collection of the results when grouped together.

A total of 347 participants took place in the experiments, while the number of valid surveys that could be analysed was 232, as illustrated in Table 5.5:

CYCLE 3 EXPERIMENTS				
CODE	**DATE**	**INSTITUTION**	**LEARNING SETTING**	**PARTICIPANTS (SURVEY RESPONDENTS)**
Exp. 1	6 May 2017	University College London, UK	One-day professional course (4h)	10 (8)
Exp. 2	3–7 July 2017	Latvian Academy of Culture, Riga, Latvia	Three-day CinemaBioscoop course (12h)	11 (7)
Exp. 3	23–30 October 2017	University College London, UK	Second-year undergraduate module on English-Spanish translation (2h)	97 (65)
Exp. 4			Final-year undergraduate module on Spanish-English translation (incoming Erasmus+ students) (2h)	36 (32)
Exp. 5	15 December 2017	Rotterdam University, Netherlands	One-day CinemaBioscoop course (4h)	18 (12)
Exp. 6	26 February 2018	University College London (UK)	ChangeMakers workshop for postgraduate students (2h)	20 (11)
Exp. 7	22 May 2018	Sapienza University of Rome (Italy)	Conference workshop (3h)	25 (23)
Exp. 8	8 November 2018	Jaume I University (Spain)	Conference workshop (3h)	30 (25)
Exp. 9	16 March 2019	European University of Valencia (Spain)	Postgraduate module on professional subtitling (4h)	9 (9)
Exp. 10	3–7 June 2019	University of Malaga (Spain)	Third-year and final-year undergraduate modules on AVT (3h)	91 (40)
			Total number of participants	347
			Total number of respondents	252
			Incomplete or invalid surveys	20
			Final number of valid surveys	232

Table 5.5. Details of study experiments

The experiments were different in both their nature and logistics, so a brief account of each of them will be given below.

Experiment no. 1 took place during a one-day professional course attended by practitioners, teachers, and students at UCL. This initial contact with such a varied cohort propitiated the exchange and sharing of information, including how-to's and tips, software bugs, and other relevant advice related to OOONA Tools. The informal discussions that took place before, during, and after this experiment also provided food for thought for the development of the following experiments.

Experiment no. 2, sponsored by the Embassy of the Netherlands in Latvia, was the longest experience and spanned over three consecutive days. The workshops were attended mainly by students and translators as well as one language teacher, all of whom were absolute beginners and had little or no subtitling experience. Similarly to the pilot study, the students' output was screened in a film festival run by CinemaBioscoop in collaboration with Kino Bize in Riga.

Experiment no. 3 involved second-year students of Spanish. All participants had received basic training on AVT the previous year since they had done AD tasks to improve their oral and written skills. Some students did not respond positively to taking part in the experiment, hence the low proportion of completed responses.

Experiment no. 4 was attended by affiliate students from Spanish HE institutions who were undertaking a final-year translation module during their study placement at UCL. Students' engagement was better than in experiment no. 3, which may be due to the fact that most of them specialised in T&I, instead of modern languages, and some had taken AVT modules before. The lessons were admittedly smaller in number too.

Experiment no. 5 was part of a one-day course open to students and members of the filmmaking industry and the local community in Rotterdam, Netherlands.

This was the last workshop co-run with CinemaBioscoop, which was dissolved soon after that. Some attendees had no translation experience but were eager to know more about subtitling for their own filmmaking practices.

Experiment no. 6 also reunited practitioners teachers, and trainers. This workshop was partly funded by UCL ChangeMakers, an initiative to promote research-led teaching at university, as part of a wider project on the uses and applications of remote learning support tools in postgraduate T&I courses. This experiment benefited from insightful discussions with specialists and experienced AVT educators from Poland, Spain, and the UK, all of whom provided informal guidance and fruitful advice for the fine-tuning of both the tool and cloud subtitling training more generally.

Experiment no. 7 was a conference workshop organised at Sapienza University, in Rome. There was a patent lack of AVT training among attendees, who were very eager to partake in this type of learning/teaching experience and had explicitly requested to attend this workshop to learn more about cloud subtitling.

Experiment no. 8 was also conceived as a conference workshop that took place at Jaume I University, Castelló, a Spanish training institution with a long history of AVT education and research. The conference was solely focused on AVT and most attendees had previously received AVT training.

Experiment no. 9 was part of a module within a postgraduate programme specialising in AVT and offered by a private HE institution in Spain. Only one participant was totally unfamiliar with subtitling back then.

Experiment no. 10, the last one, was run as part of an international Erasmus+ exchange programme and attended by many undergraduate students from the University of Malaga, Spain, where various modules on AVT are part of their bachelor’s degree in T&I.

The different educational settings in which the experiments took place determined their configuration as well as the contents and pedagogical methods. For instance, some experiments were shaped in the form of longer workshops – the longest one being 12 contact hours across three teaching days – whereas others were conceived to be part of undergraduate or postgraduate modules, or even conference workshops. Despite this variety of formats, the research objective always remained unchanged and all experiments served the purpose of gauging the students' perceptions on the use of cloud-based subtitling tools.

The fact that the experiments took place over an extended period of time meant that certain compromises needed to be made. Firstly, variables were not controlled and the survey remained intact so as to ensure consistency and to allow for the agglomeration and correlation of the bulk data for in-depth analysis in Chapter 6. Secondly, workshops were slightly different and so was the tool since, as explained in Section 5.3, collaboration with industry partner OOONA was continuous and intrinsic to this AR study. Such collaboration inevitably led to substantial changes in the user interface, features and usability of OOONA Tools. Since changes were integrated steadily and continuously by the software developers, it would have been virtually impossible to adapt variables and surveys for each new update of the tools. Instead, priority was given to obtaining responses that are representative both quantitatively and qualitatively. Thirdly, the study experiments did observe the changes made to the tool following the pilot and were carefully adjusted so as to abide by the premises of this research and lead to conclusive results.

Generally speaking, and in a similar fashion to what was done in the pilot study (Section 5.2.2.1), the workshops for the study experiments capitalised on practice rather than theory and contained four hands-on tasks: (1) an error-spotting exercise on Create Pro, (2) an origination exercise on Translate Pro, (3) a peer-reviewing exercise on the application of their choice, and (4) a subtitle file conversion exercise on Convert.

The clip and subtitle templates for the error-spotting exercise remained the same as in the pilot experiment, although the template was adjusted to better cater for

the needs of the participants, e.g. providing or hiding the key document, making errors more or less evident, etc. The template-translation exercise was also restructured on several occasions, meaning that, at times, other clips were used to tailor the level of difficulty to each cohort.

Upon completion of the exercises, students were requested to fill in an online questionnaire (16 questions) on Opinio (Appendix 4), which remained the same for all the experiments, thus allowing for a more varied overview on the perception of the tool and the possibility of establishing comparisons and correlations across the different groups of participants. Students were informed that the results would solely inform this doctoral project so that they would feel comfortable enough to provide honest and true responses. They were free to abandon the experiments at any time and could also leave the final questionnaire unanswered if they so wished.

Students attended the workshop-type experiments and carried out all exercises without being monitored or closely observed. They were only asked to participate in the anonymous survey once they had finished the experiments. The rationale behind this decision is as follows: should students have been made aware of this prior to the experiment, they might have made greater efforts in both understanding the tool and utilising its features to better perform at text timing and originating, which risked altering their perception of the learning/teaching potential of the tool. This procedure also allows to discard the Hawthorne effect, according to which participants may "alter (usually improve) their normal behaviour because they are aware that they are being studied" (Saldanha and O'Brien 2014:31). As already pointed out, the experiments aimed to examine the use and pedagogical application of OOONA Tools in a learning environment that was both authentic and realistic, that is, one in which students are motivated to learn about subtitling and not just to report on the results of their experience.

The questionnaire comprised of three sections: (1) personal information, (2) education and experience, and (3) use of cloud-based tools. The code and brief summary of the questions asked in the survey are displayed in Table 5.6:

STUDY EXPERIMENTS SURVEY QUESTIONS			
SECTION	TOPIC	QUESTIONS	INFORMATION BEING ASKED
1	Personal information	Pi_Q1 Pi_Q2 Pi_Q3	Sex Age Country and language
2	Education and experience	Pi_Q4 Pi_Q5 Pi_Q6 Pi_Q7 Pi_Q8	Profession Level of studies Subtitling training AVT-specific course Translation experience
3	Use of cloud-based tools	Pi_Q9 Pi_Q10 Pi_Q11 Pi_Q12 Pi_Q13 Pi_Q14 Pi_Q15 Pi_Q16	Previous use of cloud tools Satisfaction with performance Future use of cloud tools Previous knowledge of OOONA Tools Satisfaction with OOONA Tools Opinion of OOONA Tools OOONA Tools for training purposes Opinion of cloud subtitling

Table 5.6. Questions from the study experiments

The results of this experiment, which are outlined in Section 6.3, aim to inform the development of a new pedagogical environment for the teaching of AVT. For this purpose, regular communication and several reports were shared with OOONA Tools developers in an attempt to make their applications more pedagogically sound.

5.3. Descriptive-analytical Methods

Drawing on the previous AR cycles, as well as the description of OOONA Tools (Section 3.5), this section examines various methods to evaluate the pedagogical potential of cloud-based tools in AVT education.

Although this constitutes the last AR cycle of this thesis, it takes stock of the most relevant points on subtitling, technologies, and AVT education as well as the results obtained from the experiments. The analysis pinpoints the previously discussed advantages and shortcomings of the existing cloud-based tool and focuses on areas of improvement for it to be exploited in educational settings.

The inquiry took the form of a holistic analysis focused on the shortcomings of the tool, as highlighted by experiment attendees in the online surveys' open-

ended questions as well as informal communication. Such areas of improvement were further examined and discussed in subsequent reports and communications with the software developers. Some changes were integrated in the professional tool, which are briefly mentioned in Section 6.4, while others were still outstanding by the time this research concluded.

Following the discussion of such areas of improvement, the analysis centres on those aspects that were deemed essential for the professional tool to be useful in the AVT classroom. This is based on the previous description of the tool (Section 3.5) as well as on the professional, technological, and educational precepts covered in the state of the art of this thesis (Chapters 2, 3 and 4). The results of this cycle constitute a brief summary of the most salient features that cloud-based AVT tools ought to have for educational purposes. These features have been divided into the following four main steps that draw on OBE and constructive alignment: task creation, work completion, aligned assessment, and subsequent discussion of feedback. As further explored in Section 6.4, the specific developments for each step would subsequently allow for a wide array of learning and teaching possibilities, including those where the students are able to create their own tasks and peer-assess the work of their counterparts.

In a nutshell, the analysis summarises the ways in which this research has informed the existing tool, accounting for some of the improvements made in the last few years, following the discussions established with the industry partner. The ultimate aim of this AR cycle is to offer the instruments necessary to further improve the existing tools so that they can be better exploited as professional alternatives in the classroom.

CHAPTER 6

RESULTS AND DISCUSSION

This chapter discusses the results yielded by the case studies as well as their uses and applications for the development of a model for AVT education in cloud ecosystems.

6.1. Cycle 1: Preliminary Study with Trainers

This chapter consists of a descriptive analysis based on the results that were obtained in the background survey described in Section 5.2.1, and which have also been discussed in Bolaños-García-Escribano (2018).

The below results, which offer a rich insight into the current landscape of online subtitling courses, are divided into four sections: (1) personal information of participants, (2) education and experience of subtitler trainers, (3) description of online subtitling courses, and (4) use of cloud-based subtitling tools.

To analyse the t-distribution in the preliminary study, the Shaphiro-Wilk test (N=19) was performed on non-descriptive questions in SPSS. This test revealed that the responses to all questions, except for question no. 10, are non-parametric insofar as they did not have a normal distribution, i.e. p-values were systematically lower than 0.05.

The questions offered substantial non-parametric data, of which the first two sections aim to describe the sample of participants and the last two include their opinion on online subtitling courses and cloud-based subtitling tools.

6.1.1. Personal Information of Participants

The survey was distributed among translation professionals and academics through translator associations and mailing lists as well as one-to-one electronic communication. According to the survey's records, 80 people opened the link, but only 20 respondents completed it; however, the non-response error decreased this figure to 19, out of whom six were men, twelve were women and one preferred not to say.

Over two thirds of the respondents (13) were 21–40 years old, whereas the rest (6) were in the 41–60 bracket. The countries of residence of the respondents were, in descending order: Spain (10), the United Kingdom (5), Italy (2), Argentine (1), and the United States (1). The native languages of the respondents varied and often did not correspond with their countries of residence, which can be considered a common trend in today's globalised world. English – with the same result as Portuguese (2, 11%) – was far behind Spanish (10, 53%) and the only non-European language was Japanese. Catalan, Greek, Italian, and Polish were also present.

6.1.2. Education and Experience of Subtitler Trainers

Most online subtitling trainers (12, 63%) were actively working as in-house or freelance translators at the time they completed this survey (Figure 6.1). This confirms that some university teachers (5, 26%) and vocational trainers (2, 11%) are also actively involved in the industry, which is beneficial for conducting profession-oriented courses and helping students to gain a better understanding of the ways in which the market works. In the 'Other' section, one respondent claimed being a project director, whereas another one could have ticked 'University teacher' as they then wrote "Lecturer in Translation Studies".

Pre_Q4: Please indicate the role(s) that best define(s) you

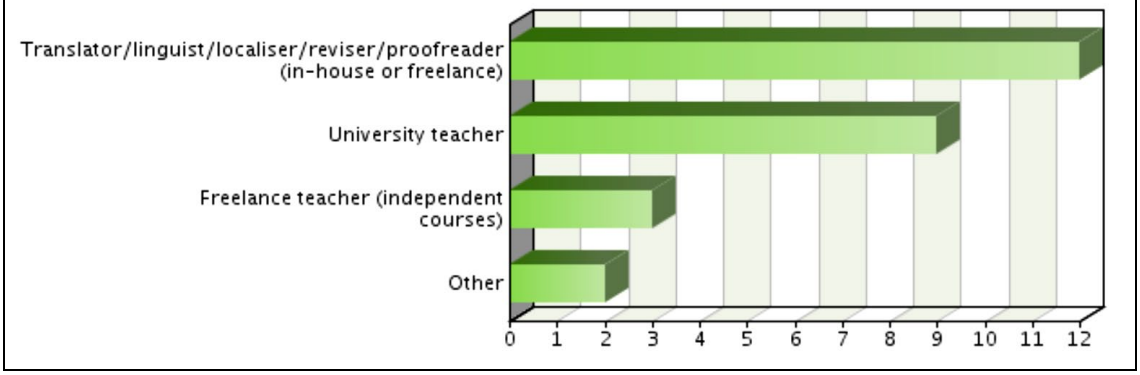

Figure 6.1. Answers to Pre_Q4

As illustrated in Figure 6.2 below, 9 respondents (47%) held a PhD or equivalent qualification, whereas 7 (37%) had obtained a postgraduate degree and 3 (16%) an undergraduate degree as their highest educational qualification. With most respondents having undertaken postgraduate studies, it can be argued that the educational background of online subtitler trainers was considerably high.

Pre_Q5: Please indicate your highest general educational background to date (awarded by an official institution)

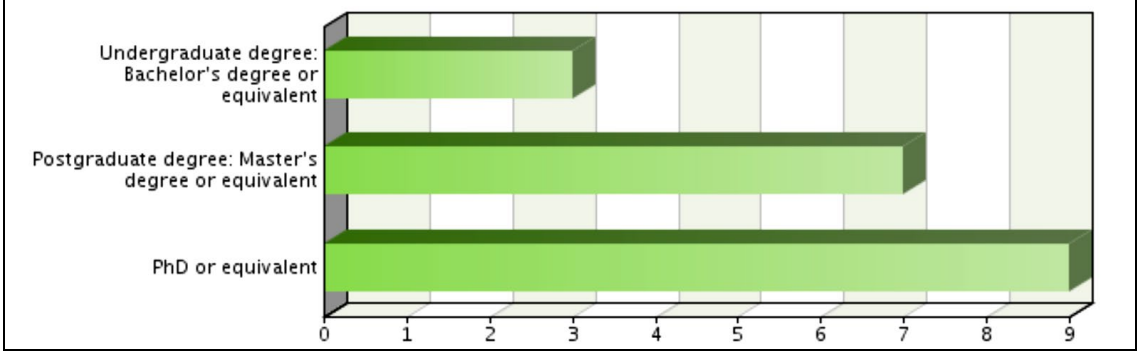

Figure 6.2. Answers to Pre_Q5

As displayed in Figure 6.3, 10 (53%) had received subtitling-specific training at university and 5 (26%) had taken independent courses. Meanwhile, 8 (42%) had not received any specific training and had learnt by themselves through self-tuition (4, 21%) or on the job (3, 16%), or both (1, 5%). A curious datum is that the trainer who chose 'Other' had previously undertaken both university and independent courses but specified that they learnt through professional experience.

Pre_Q6: Please indicate if you have received specific training on subtitling

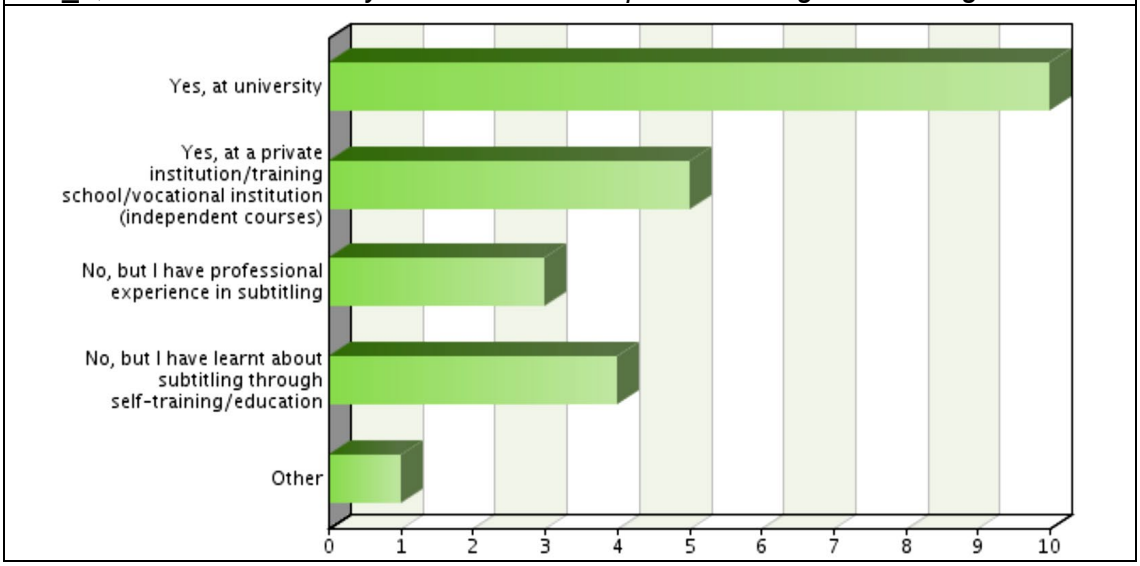

Figure 6.3. Answers to Pre_Q6

Only 8 (42%) respondents claimed to have done AVT- or subtitling-specific postgraduate studies at university (Figure 6.4), to which the respondent who chose 'Other' (5%) may be added, as they had done a master's degree in TS which included a module on subtitling. As shown in the age-related data (Section 6.1.1), most trainers were young enough to have had the opportunity of receiving AVT-specific education in Europe. All the respondents aged 40 or less answered positively, whereas 6 out of 10 trainers aged 40 or more answered negatively, which constitutes a statistically significant datum. Another interesting fact is that most Spanish respondents answered positively, contrary to the participants from other countries, who did not have a specific postgraduate diploma on AVT or subtitling, except for one respondent from the UK.

Pre_Q7: If you have selected 'Yes, at university' in the last question, please indicate if you also hold a specific postgraduate diploma on subtitling, or audiovisual translation including subtitling training

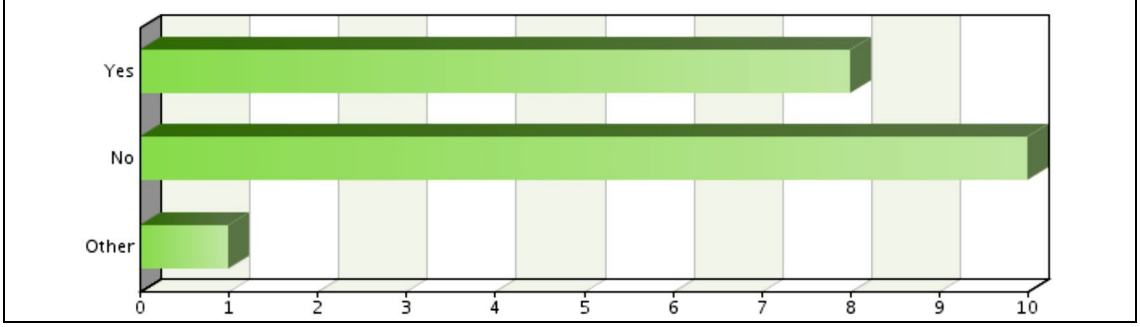

Figure 6.4. Answers to Pre_Q7

Only 4 (21%) respondents declared subtitling to be their main professional activity, whereas 7 (37%) of them carried out subtitling projects on a regular basis, 5 (26%) had professional experience and only 3 (16%) had little professional experience, including here the respondent who chose 'Other' and seemed to exclusively work as a teacher at university level (Figure 6.5). A career in academia is often incompatible with the demands of being a freelance translator, which would explain why some of them did not work as subtitlers (Section 4.5.2).

Pre_Q8: Please indicate if you are currently working as a subtitler

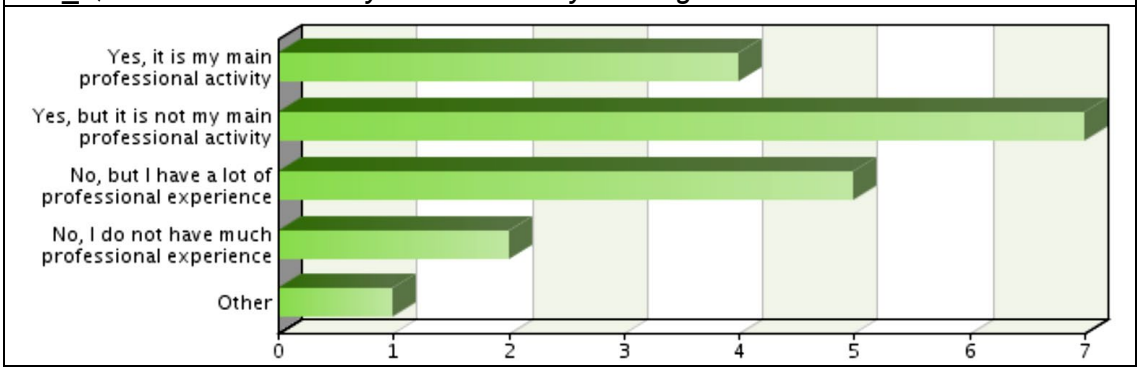

Figure 6.5. Answers to Pre_Q8

6.1.3. Description of Online Subtitling Courses

Most online subtitling courses (12, 63%) were held at HE institutions, including both public and private universities. Six of them (32%) offer their course at private institutions other than universities and one (5%) respondent claimed that their course is offered through their own translation company (Figure 6.6). These figures highlight the greater inclusion of translation practices and technologies in HE curricula that used to cover more traditional areas of knowledge (Section 4).

Pre_Q9: Please indicate the institution which hosts your course on subtitling

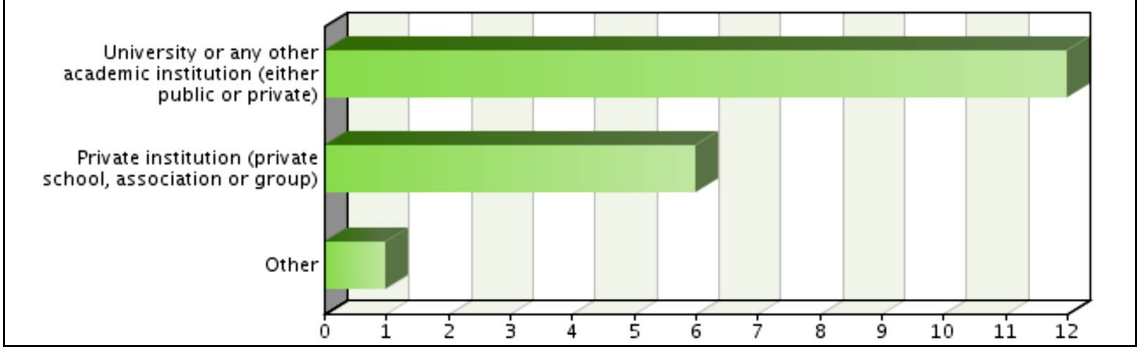

Figure 6.6. Answers to Pre_Q9

According to the respondents, the average number of students attending online courses was close to 17 (*f*=16.63), the maximum value being 35. The cumulative percentages show that over half (11) of the 19 online courses have 15 students or fewer, whilst three quarters (14) of them have 27 students or fewer, and five courses accepted up to 35. These numbers reflect a general trend of online courses, which is the relatively low number of students for logistical reasons.

A total of 12 (63%) online courses were considered to be language specific. The average number of working hours per whole course, including self-learning activities, was 78, the maximum value being 400 and the minimum 6, with a median of 50 hours. The cumulative percentages show that 9 (47%) online courses offered less than 45 hours, whilst 6 (32%) offered between 45 and 85. Five courses had a total of 66, 120, 150, 250 and 400 hours, respectively. The course that entails up to 400 hours, far from being considered an outlier that could affect the normality of the data distribution, is to be understood in academic terms, wherein 1 ECTS corresponds to 25–30 working hours (including lessons, office hours, homework, exam preparation, etc.), hence a 10–15 ECTS course.

The number of sessions offered yearly within a course varies greatly. The average number of sessions was 8 (rounded up from *f*=7.63) per year, which is a very high number, taking into consideration that the resources, time management and learning monitoring that online courses impose on trainers are indeed many (Section 4.4). Since a total of 4 trainers (21%) offered between 12 and 40 sessions annually, it is presumed that those who ran so many courses meant their intake is flexible and students can enrol at any time during the year because the course is asynchronous or blended.

Most online courses (17, 89%) resort to freeware, since only 2 courses (10%) made use of paid software exclusively, and 3 (16%), including the 'Other' response, utilised both types as seen in Figure 6.7.

Pre_Q15: Please indicate if the subtitling software you use for your course is paid for or free. Please indicate which in the text box below

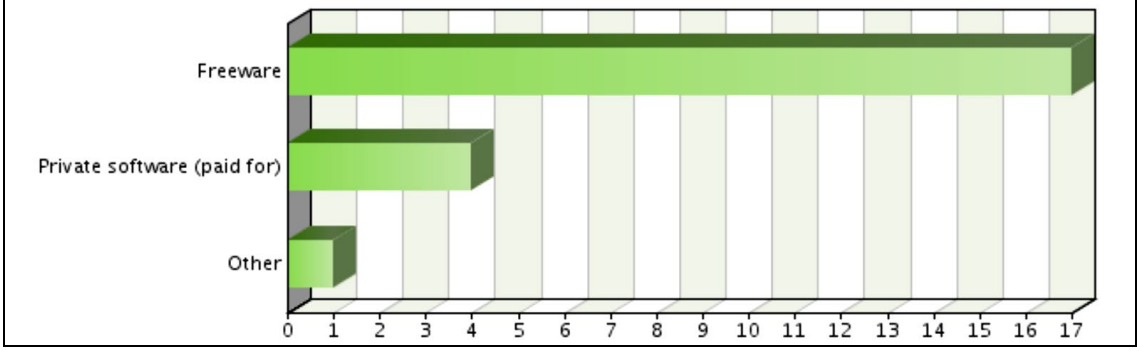

Figure 6.7. Answers to Pre_Q15

The respondents were asked to list the names of the software used in the course: Subtitle Workshop (5), EZTitles (3), Aegisub (2), VisualSubSync (2), and FAB Subtitler (2). Other subtitling solutions listed only once were: Wincaps Demo, DivXLand Media, Subtitle Edit, DotSub, Overstream, Jubler, Belle Nuit, and SubsFactory.

Half of the respondents (9, 47%) believed that their online subtitling course satisfied the educational needs of would-be subtitlers very well, whereas only 2 (11%) of them did not. On the whole, their average satisfaction was of 4 out of 5 (standard deviation: 1.291) in a Likert scale of 5 (Figure 6.8), which reflects an overall trend to consider online courses a highly valuable method..

Pre_Q16: Please indicate if you reckon subtitling online courses satisfy the educational needs of subtitlers-to-be

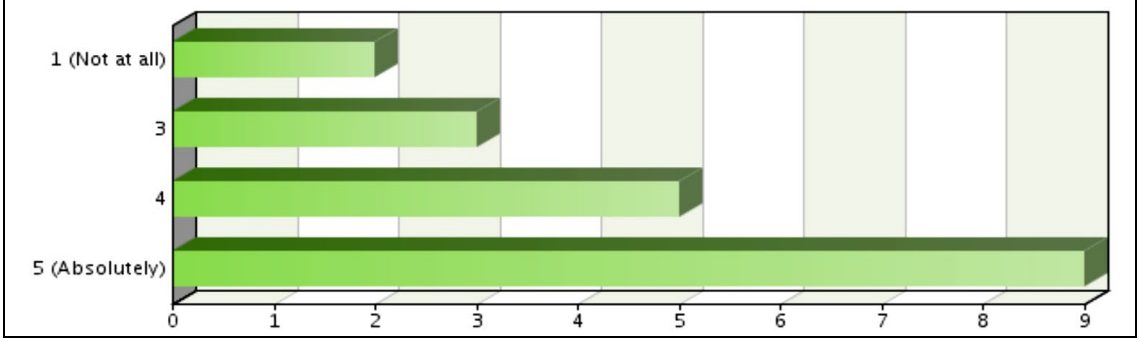

Figure 6.8. Answers to Pre_Q16

In the opinion of 14 (74%) respondents (Figure 6.9.), not only did their online courses offer an effective introduction to subtitling, they also provided attendants with enough preparation to carry out professional subtitling projects upon

conclusion. Some (3, 16%) agreed that students need further practice after the course, while only 2 (10%) claim that the success of the courses depends on the particularities of each student and preferred not to say.

Pre_Q17: Please indicate whether, in your opinion, translators are prepared enough to carry out professional subtitling projects after having done an online subtitling course, or not.

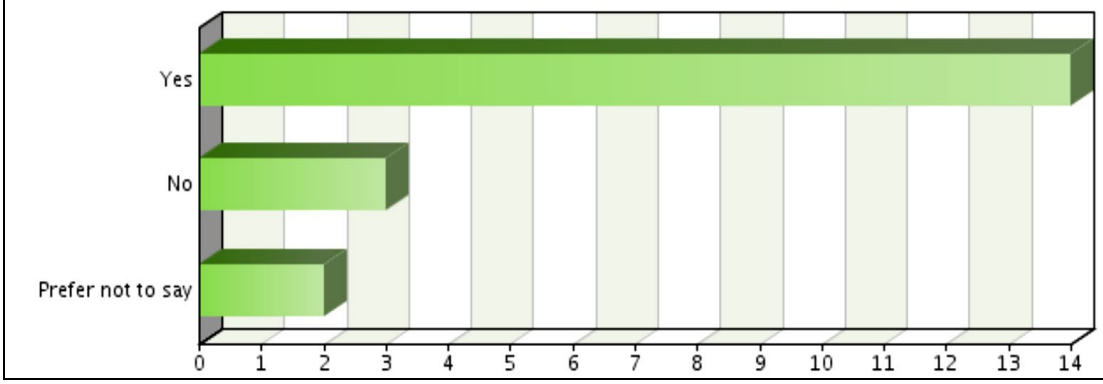

Figure 6.9. Answers to Pre_Q17

6.1.4. Use of Cloud-based Subtitling Tools

As seen in Figure 6.10, online courses can be developed in a myriad of cloud-based learning tools. Several respondents (7, 37%) claimed to use cloud-based learning platforms, while 13 (68%) of them declared to use online forums and tutorials, 9 (47%) mentioned live chats and, less frequently, face-to-face lessons (5, 26%) and face-to-face tutorials (5, 26%).

The respondents who chose online tools claimed to use Moodle as their main learning platform, so the assumptions in previous sections seem very realistic, i.e. that Moodle is, perhaps, the most popular didactic tool available online today in T&I curricula.

Pre_Q18: Does your subtitling course include any of the following?

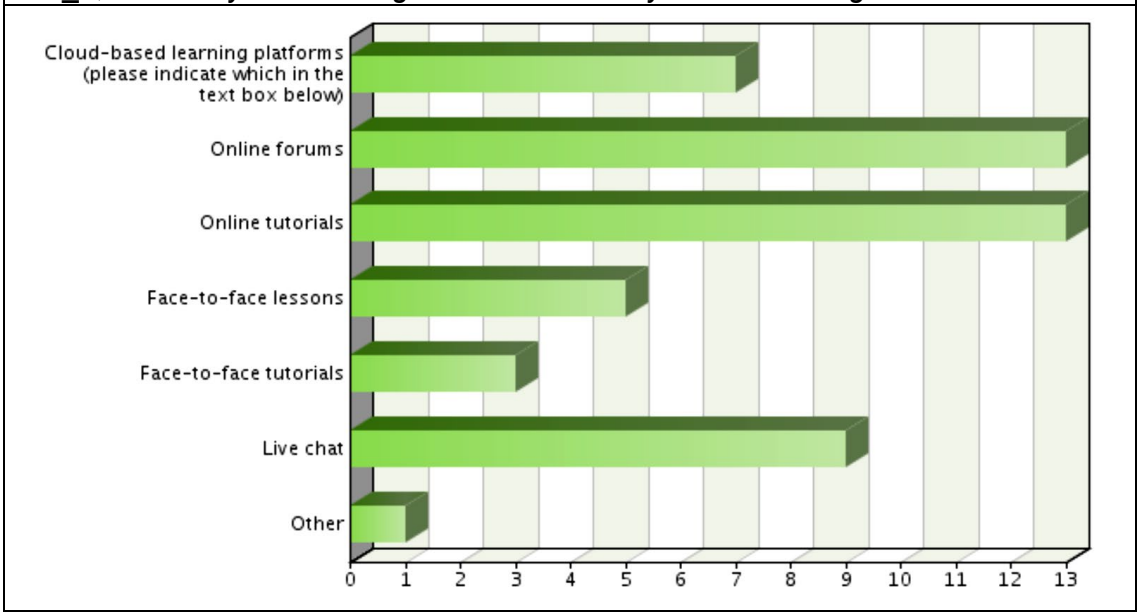

Figure 6.10. Answers to Pre_Q18

A total of 17 (90%) respondents avowed not using any cloud-based subtitling solutions in their courses (Figure 6.11). The only respondent who claimed to use these tools listed the following: DotSub (dotsub.com), Overstream (overstream.net), and Amara (amara.org/en), which offer free trials and demos. Another respondent erroneously wrote “Moodle” in the free-text box.

Pre_Q19: Do you use any cloud-based subtitling platform in your subtitling course?

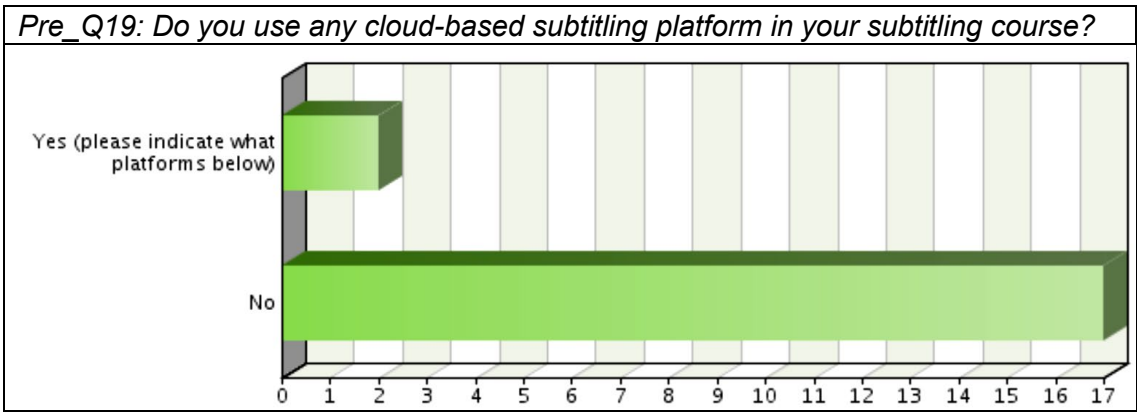

Figure 6.11. Answers to Pre_Q19

When asked if they would consider the inclusion of these tools in their courses (Figure 6.12), most of the tutors, who had not used cloud-based subtitling software before, seemed eager to do so in the future (15, 90%). This figure was considered to be highly important to support this thesis’s hypotheses and objectives.

Pre_Q21: If you currently do NOT use cloud-based subtitling platforms within the course, please indicate if you would consider using any in the future for educational purposes

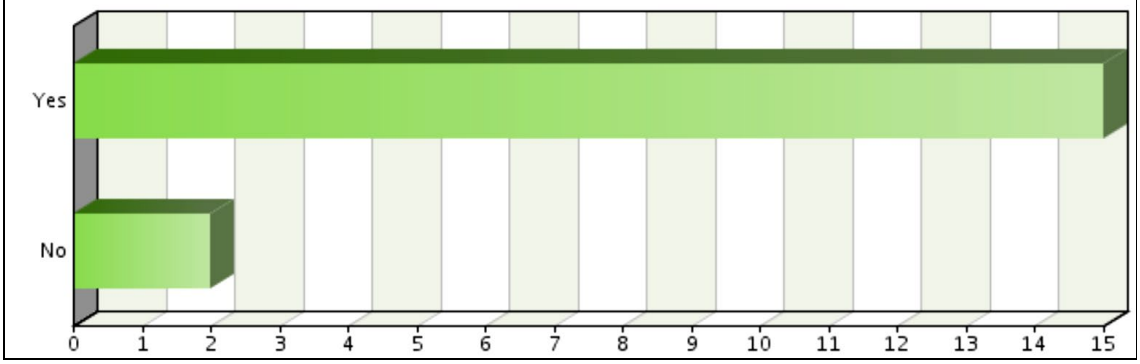

Figure 6.12. Answers to Pre_Q21

Even though only one tutor was already using cloud-based subtitling tools in their course, 8 (42%) already knew about OOONA Tools from different sources, whereas 10 (53%) did not, and one (5%) had learnt about it through personal communication with me, as displayed in Figure 6.13:

Pre_Q22: Do you know the cloud-based subtitling platform Online Captions and Subtitles Toolkit (ooona.net) developed by OOONA?

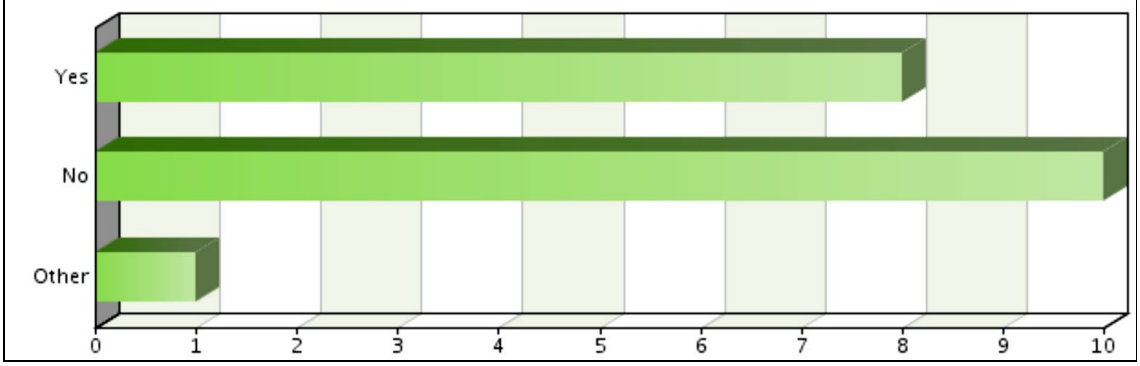

Figure 6.13. Answers to Pre_Q22

The last question in this section aimed at shedding light on the potential benefits of cloud-based subtitling solutions for translator training. Most answers were clearly positive, and they foregrounded the following advantages: minimising the problems caused by software installation and maintenance, extending training methods to fulfil the industry's cloud-based needs, offering free trials to students, and storing materials online, to name but a few. Some drawbacks mentioned are the difficulty in using these tools, the monetary costs, the lack of specific training

among trainers, the potential broadband-related problems, and the limitations in the range of functionalities.

The results from this preliminary study proved fundamental to confirming the subtitler trainers' increasing interest in cloud-based systems, which hence justified the hypothesis that cloud-based tools can be utilised in b-/e-learning teaching environments. Having said that, it would have been equally interesting to enlarge the sample and perhaps extend the survey to other academic circles, such as trainers who still use desktop-based solutions. This should be considered for future research projects.

6.2. Cycle 2: Pilot Experiment with Learners

The pilot study aimed to gauge the students' perceptions of OOONA Tools as well as to set the ground for further case studies (Section 6.3). The statistical analyses carried out on the qualitative and quantitative data shed light on the respondents' preferences and allowed for the drawing of several action points for the subsequent AR cycles. The results presented in the below sections are relevant inasmuch as they confirm that this type of experiment was perceived by participants and other stakeholders as relevant, interesting and adequate to learn how to subtitle on the cloud.

As with the preliminary study, to analyse the t-distribution in the pilot study, the Shaphiro-Wilk test (N=46) was performed on non-descriptive questions in SPSS. This test revealed that the responses to all questions were non-parametric; that is, they did not have a normal distribution insofar as the p-values were systematically lower than 0.05.

6.2.1. Personal Information and Academic Background

The first set of questions helped to profile the respondents (N=46), all of whom had attended the subtitling workshop co-run by CinemaBioscoop and UCL in

2017 (Section 5.2.2.1). Table 6.1 contains absolute and relative frequencies for the descriptive questions, which will be further discussed in this section.

QUESTION	VALUES	FREQUENCY	PERCENT	CUMULATIVE PERCENT
Pi_Q1	Prefer not to say	1	2.2	2.2
	Male	13	28.3	30.4
	Female	32	69.6	100
Pi_Q2	<20	22	47.8	47.8
	>20	24	52.2	100
Pi_Q3	England	40	87	87
	Wales	3	6.5	93.5
	The Netherlands	2	4.3	97.8
	Poland	1	2.2	2.2
Pi_Q4	English	42	84.8	85.7
	Dutch	2	4.3	4.3
	Other	5	10.2	100
Pi_Q5	0	16	34.8	34.8
	1	16	34.8	69.6
	2	7	15.2	84.8
	3	4	8.7	93.5
	4	3	6.5	100
Pi_Q6	Undergraduate	41	89.1	89.1
	Postgraduate	4	8.7	97.8
	Alumnus	1	2.2	100
Pi_Q7	Sheffield	33	71.7	71.7
	UCL	6	13	84.8
	Nottingham	4	8.7	93.5
	Newcastle	3	6.5	100
Pi_Q8	Yes	24	52.2	52.2
	No	22	47.8	100
Pi_Q9	Yes	10	21.7	21.7
	No	36	78.3	100

Table 6.1. Frequencies and percentage values of Pi_Q1 to Pi_Q9

As seen in Figure 6.14, female participants (32, 70%) were significantly greater in number than their male counterparts (13, 28%). A total of 24 (52%) respondents were older than 21 years old; however, the fact that almost half of them (22) were 20 or less is rather significant, as many of them may not have had enough experience in translation or subtitling, as will be seen below. There were only two respondents older than 26 years old, one of whom was a UCL alumnus, whereas the other was a mature undergraduate student.

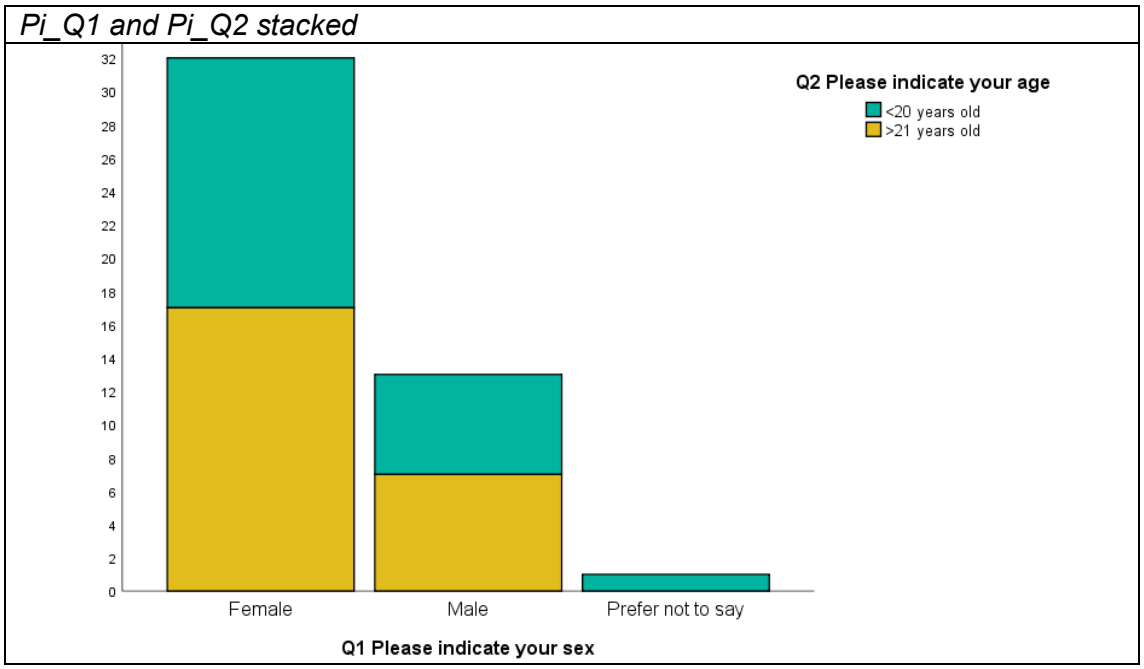

Figure 6.14. Answers to Pi_Q1 and Pi_Q2 stacked

The fact that 43 (94%) respondents were UK citizens did not come as a surprise since the workshop was hosted at UCL, and invitees came from another three HE institutions in the country (Figure 6.15). Another 2 (4%) students came from the Netherlands and 1 (2%) from Poland, although they were UK residents, too.

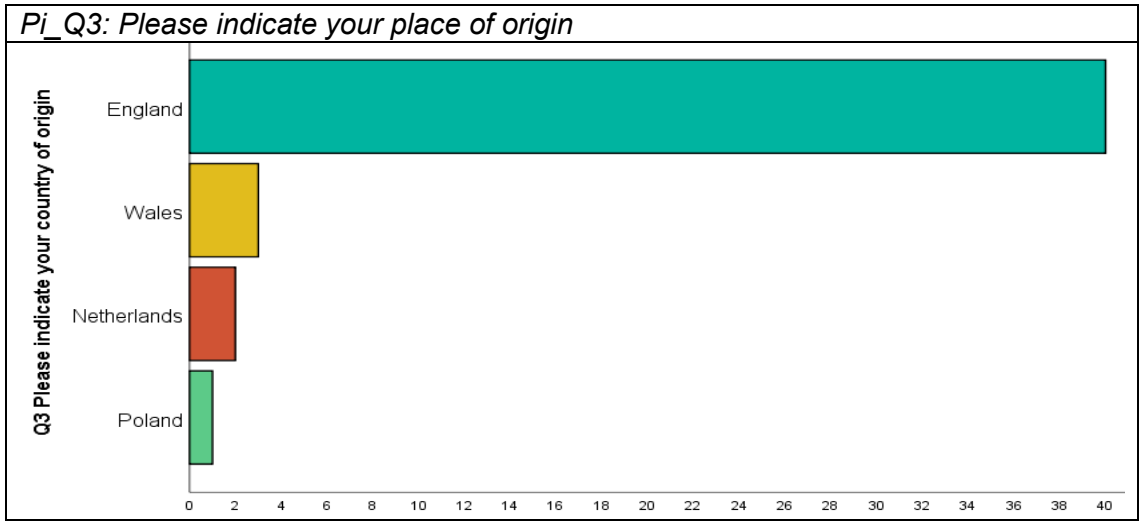

Figure 6.15. Answers to Pi_Q3

As Figure 6.16 illustrates, the most widely spoken language was, understandably, English; the native language of 42 (91%) respondents, including a bilingual speaker of Welsh and English as well as another speaker of British Sign Language and English. There were also 2 (4%) native speakers of Dutch and

another three language combinations, including Chinese (1, 2%), and Polish (1, 2%).

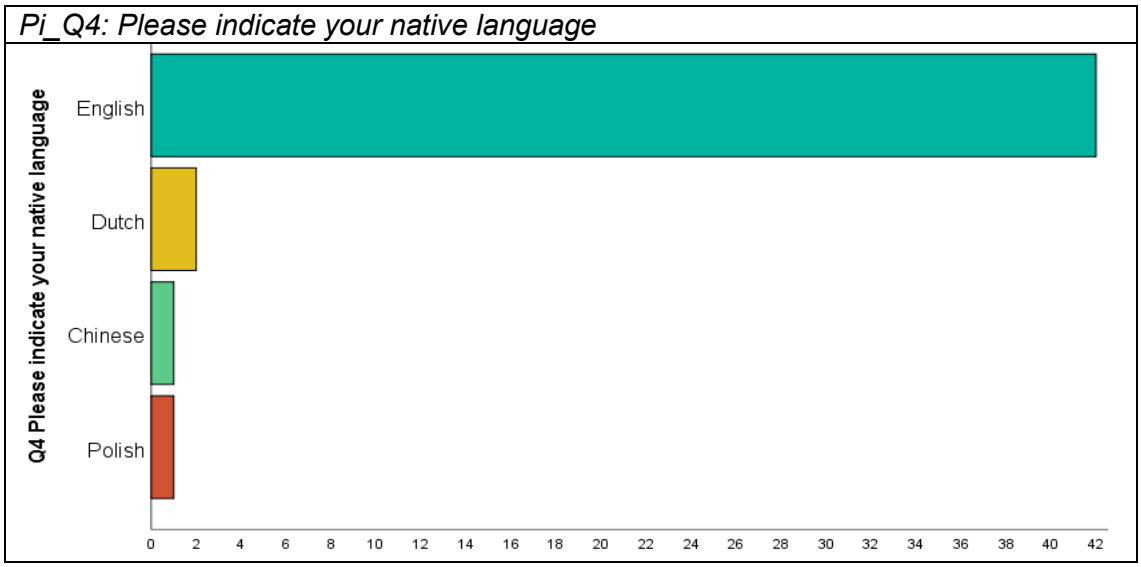

Figure 6.16. Answers to Pi_Q4

As shown in Figure 6.17, a total of 30 (65%) respondents claimed to be fluent in at least another language, of which 14 (30%) spoke only one, 8 (17%) spoke two, 5 (11%) spoke three, and 3 (7%) spoke four. The remaining 16 (35%) respondents did not believe that their level of Dutch – the language on which the workshop was focused – was sufficiently good as to consider they spoke it fluently.

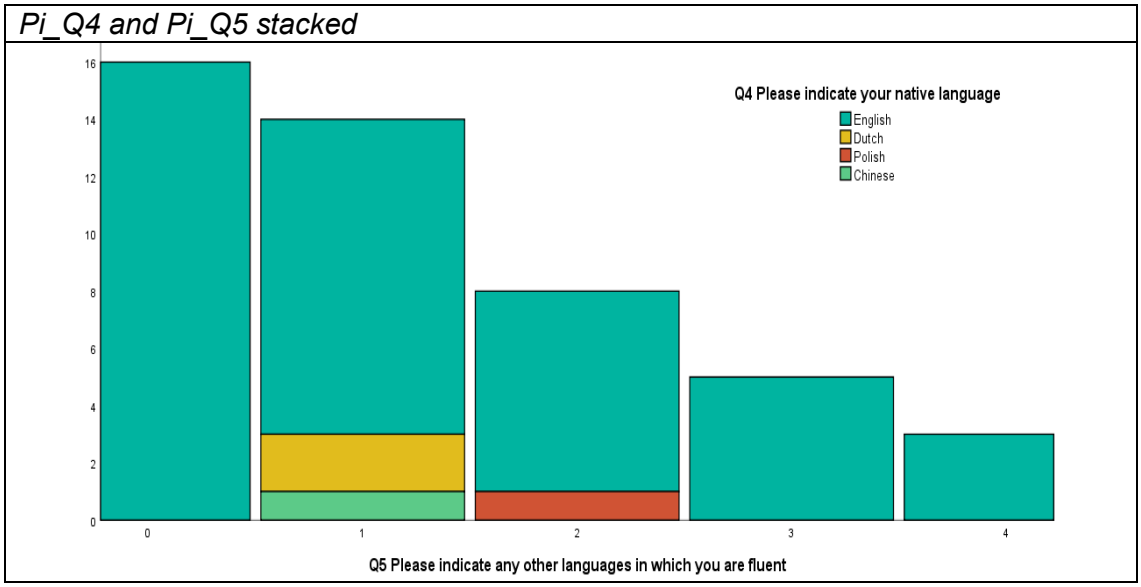

Figure 6.17. Answers to Pi_Q4 and Pi_Q5 stacked

The languages in which respondents claimed to be fluent were many and are listed alphabetically in Table 6.2:

LANGUAGES	FREQUENCY
British Sign Language	1
Catalan	1
Dutch/Flemish	10
English	4
French	9
German	16
Italian	1
Japanese	2
Kurdish/Persian	1
Portuguese	2
Russian	1
Spanish	7
Welsh	3

Table 6.2. Languages spoken by respondents

The fact that, even though all subjects were, or had been, students of Dutch as a foreign language, only 22% of respondents chose Dutch/Flemish is conspicuous. There may be multiple reasons why they chose not to tick such box, one being that this was presumed on the basis that they were attending a Dutch-specific subtitling workshop, and another being that they did not consider their linguistic competence as being sufficiently fluent. Another interesting fact is that 16 (35%) respondents are fluent speakers of German, which shares many linguistic similarities with Dutch, whereas French (9, 20%) and Spanish (7, 15%) seem to have significantly lower values despite being more popular in the British educational system.

The vast majority of respondents were undergraduate students (41, 89%), but there were also 4 (9%) postgraduate students from Sheffield University and an alumnus from UCL (Figure 6.18):

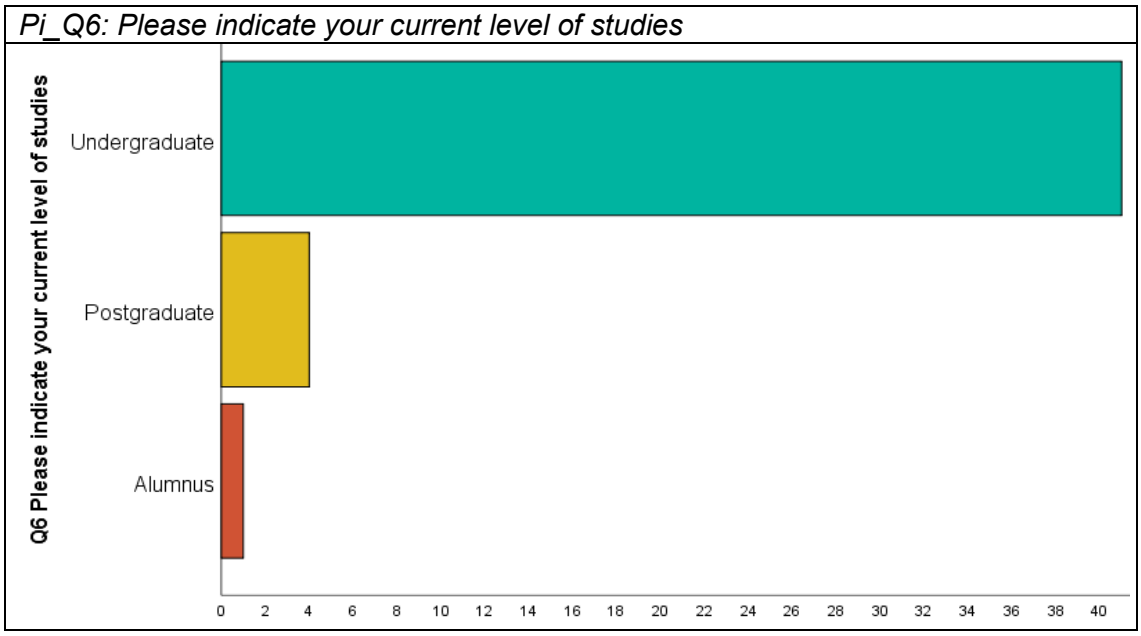

Figure 6.18. Answers to Pi_Q6

A total of 33 (72%) attendants were undertaking undergraduate studies at Sheffield University, whereas 6 (13%) were doing so at UCL, 4 (9%) at Nottingham University, and 3 (7%) at Newcastle University (Figure 6.19). They all had Dutch as a common foreign language in their studies, but it cannot be ascertained whether or not their major was on modern languages or other fields, as this was not asked at any point.

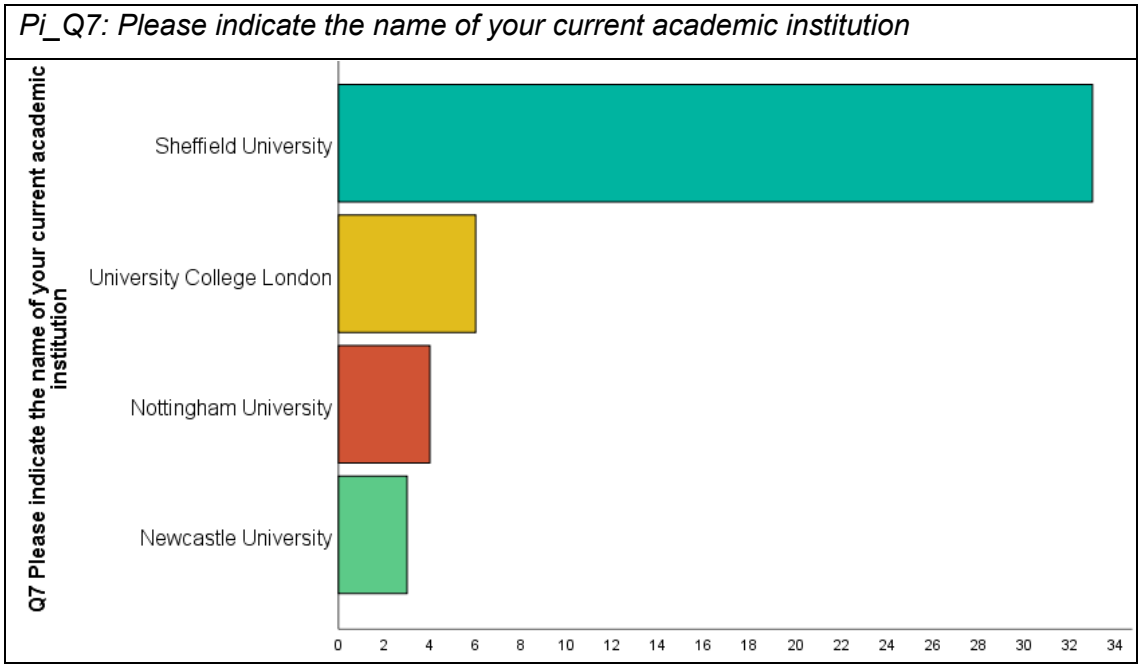

Figure 6.19. Answers to Pi_Q7

Only slightly over half of the respondents (24, 52%) had done translation as part of their curricular studies in their home university (Figure 6.20):

Pi_Q8: Please indicate if you have taken any translation-specific courses before attending the workshop

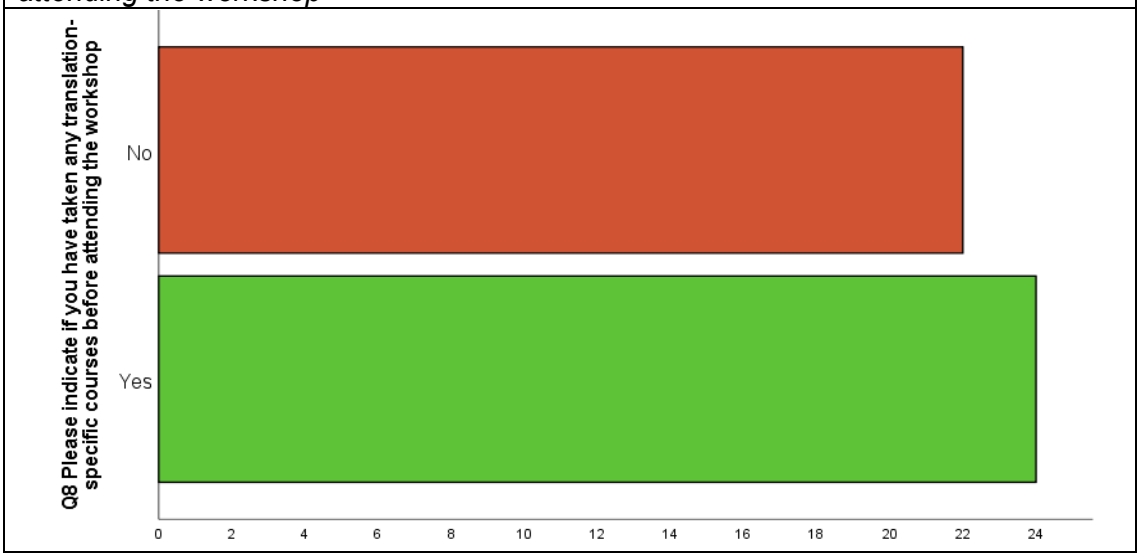

Figure 6.20. Answers to Pi_Q8

When it comes to specific knowledge about subtitling, only 10 (22%) had done some training prior to attending the workshop (Figure 6.21):

Pi_Q9: Please indicate if you have taken any subtitling-specific courses before attending the workshop

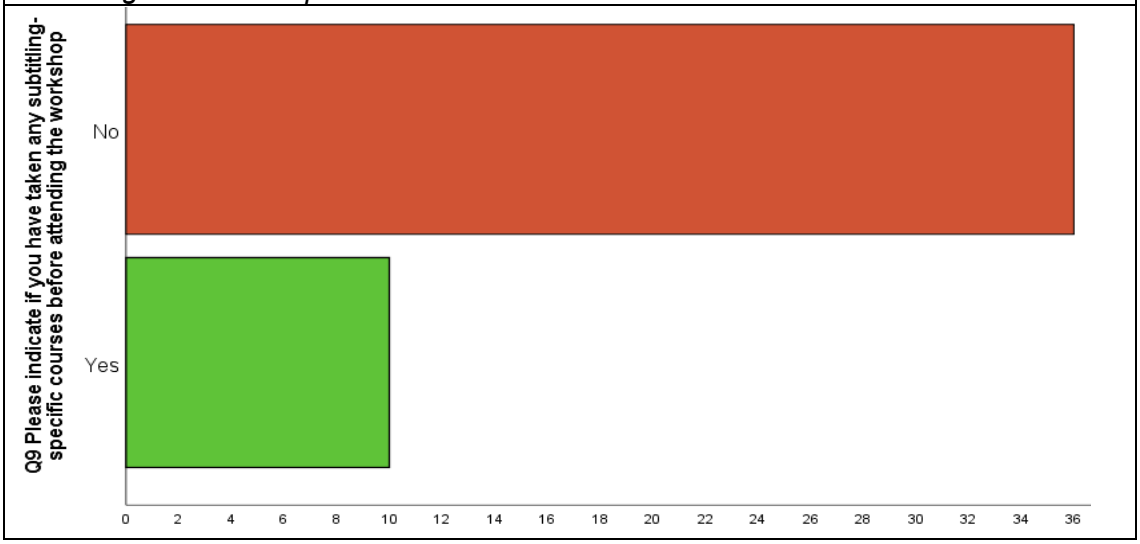

Figure 6.21. Answers to Pi_Q9

Since subtitling is often taught at postgraduate level, this eventuality had been previously conjectured; however, there were a few students (10, 22%) who had

done subtitling training with no previous translation training (Figure 6.22), which is rather uncommon. As over three quarters of respondents (36, 78%) had not received any subtitling training, their responses were expected to be of great interest to ascertain whether OOONA Tools was a useful tool for beginners and inexperienced translators.

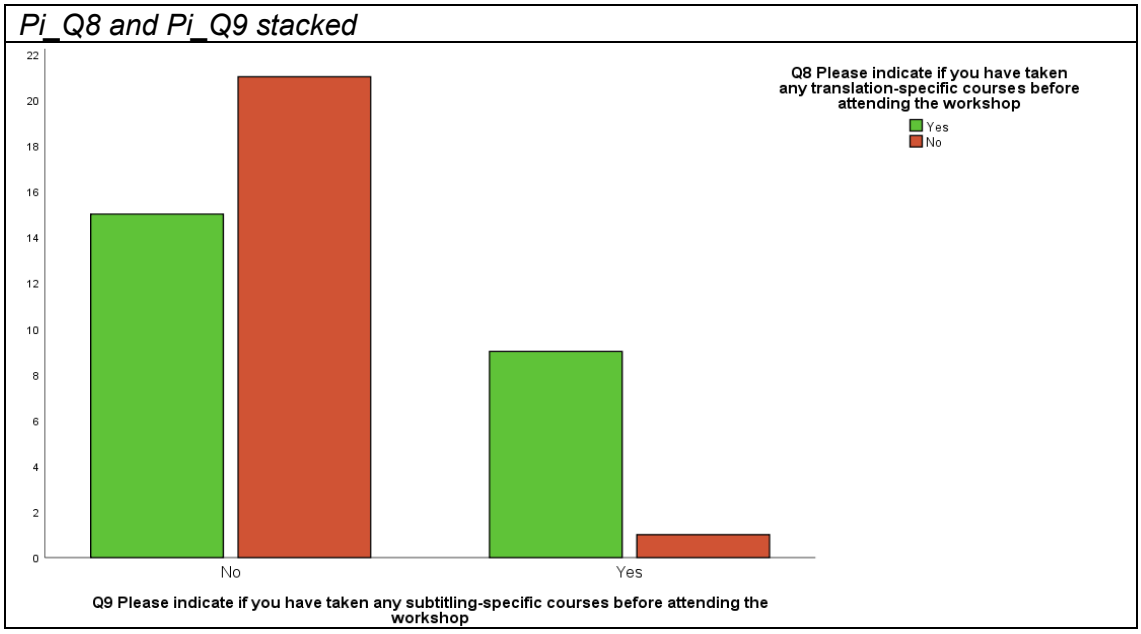

Figure 6.22. Answers to Pi_Q8 and Pi_Q9 stacked

The relevance of the descriptive results discussed above is twofold: firstly, it allows this research to focus on how usable OOONA Tools is perceived by potential would-be translators with little or no knowledge of translation and subtitling; and, secondly, it allows to establish comparisons between the different social groups that were present in the experiment.

6.2.2. Workshop Configuration and Format

The Likert-scale questions (Pi_Q10 to Pi-Q18) outlined in Table 6.3 aimed to collect information on whether or not the workshop's configuration and format were adequate so as to be replicated in the future.

QUESTION	VALUES	FREQUENCY	PERCENT	CUMULATIVE PERCENT
Pi_Q10	N/A	0	0	0
	Strongly disagree	12	26.1	26.1
	Disagree	19	41.3	67.4
	Neither agree nor disagree	13	28.3	95.7
	Agree	1	2.2	97.8
	Completely agree	1	2.2	100
Pi_Q11	N/A	0	0	0
	Strongly disagree	0	0	0
	Disagree	0	0	0
	Neither agree nor disagree	10	21.7	21.7
	Agree	25	54.3	76.1
	Completely agree	11	23.9	100
Pi_Q12	N/A	0	0	0
	Strongly disagree	1	2.2	2.2
	Disagree	9	19.6	21.7
	Neither agree nor disagree	8	17.4	39.1
	Agree	20	43.5	82.6
	Completely agree	8	17.4	100
Pi_Q13	N/A	2	4.3	4.3
	Strongly disagree	0	0	4.3
	Disagree	1	2.2	6.5
	Neither agree nor disagree	7	15.2	21.7
	Agree	17	37.0	58.7
	Completely agree	19	41.3	100
Pi_Q14	N/A	0	0	0
	Strongly disagree	1	2.2	2.2
	Disagree	6	13.0	15.2
	Neither agree nor disagree	5	10.9	26.1
	Agree	18	39.1	65.2
	Completely agree	16	34.8	100
Pi_Q15	N/A	0	0	0
	Strongly disagree	0	0	0
	Disagree	3	6.5	6.5
	Neither agree nor disagree	9	19.6	26.1
	Agree	24	52.2	78.3
	Completely agree	10	21.7	100
Pi_Q16	N/A	0	0	0
	Strongly disagree	0	0	0
	Disagree	0	0	0
	Neither agree nor disagree	4	8.7	8.7
	Agree	21	45.7	54.3

	Completely agree	21	45.7	100
Pi_Q17	N/A	1	2.2	2.2
	Strongly disagree	1	2.2	4.3
	Disagree	1	2.2	6.5
	Neither agree nor disagree	4	8.7	15.2
	Agree	10	21.7	37.0
	Completely agree	29	63.0	100
Pi_Q18	N/A	1	2.2	2.2
	Strongly disagree	0	0	2.2
	Disagree	1	2.2	4.3
	Neither agree nor disagree	11	23.9	28.3
	Agree	17	37.0	65.2
	Completely agree	16	34.8	100

Table 6.3. Frequencies and percentage values of Q10 to Q18

Responses ranged from 1 (strongly disagree) to 5 (completely agree). The rest of values have been assigned for the sake of clarity (2: disagree; 3: neither agree nor disagree; 4: agree).

The vast majority of respondents (31, 67%) did not perceive the workshop as being difficult, 13 (28%) claimed it was neither difficult nor easy and only 2 (4%) respondents found it difficult, as depicted in Figure 6.23:

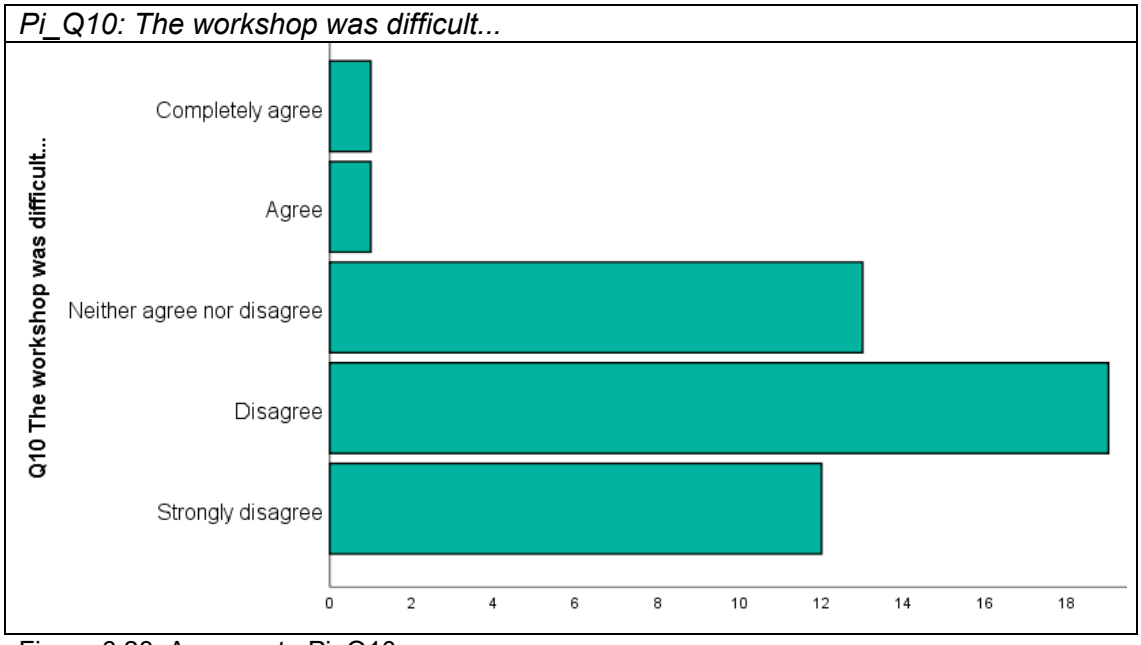

Figure 6.23. Answers to Pi_Q10

Although they were not prompted to specify the aspects that made this a challenging or unchallenging learning experience, a respondent pointed out the following:

The work was not really challenging enough since we didn't really have much to do, and it was more of a translation exercise than a subtitling exercise.

On the contrary, another respondent wrote:

[It was] helpful that the timing is all already done, that would have been hard.

In fact, the removal of the text-timing component in the workshop was a decision triggered by the learning context, and more specifically by temporal constraints, which led to the development of the subtitle template translation exercises only.

None of the respondents considered the workshop to be uninteresting; in fact, 25 (54%) agreed, and 11 (24%) strongly agreed that it was interesting. Yet 10 (22%) respondents expressed a more cautious opinion by neither agreeing nor disagreeing (Figure 6.24):

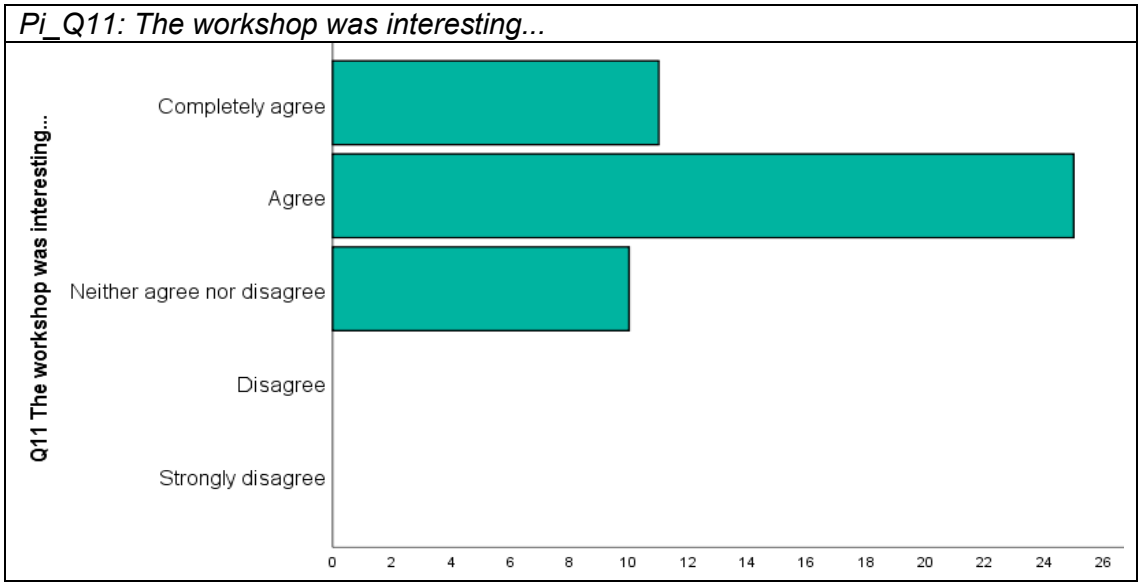

Figure 6.24. Answers to Pi_Q11

As outlined in Figure 6.25 below, most of the respondents (34, 74%) who found the workshop interesting also disagreed, or strongly disagreed, that it was difficult.

This outcome was somewhat expected inasmuch as students are believed to build up their learning on their own interests and emotions, as discussed by González-Davies (2004:2), who claims that "research into psychology and pedagogy points to an improvement of the students' competence and performance if motivation and participation are encouraged."

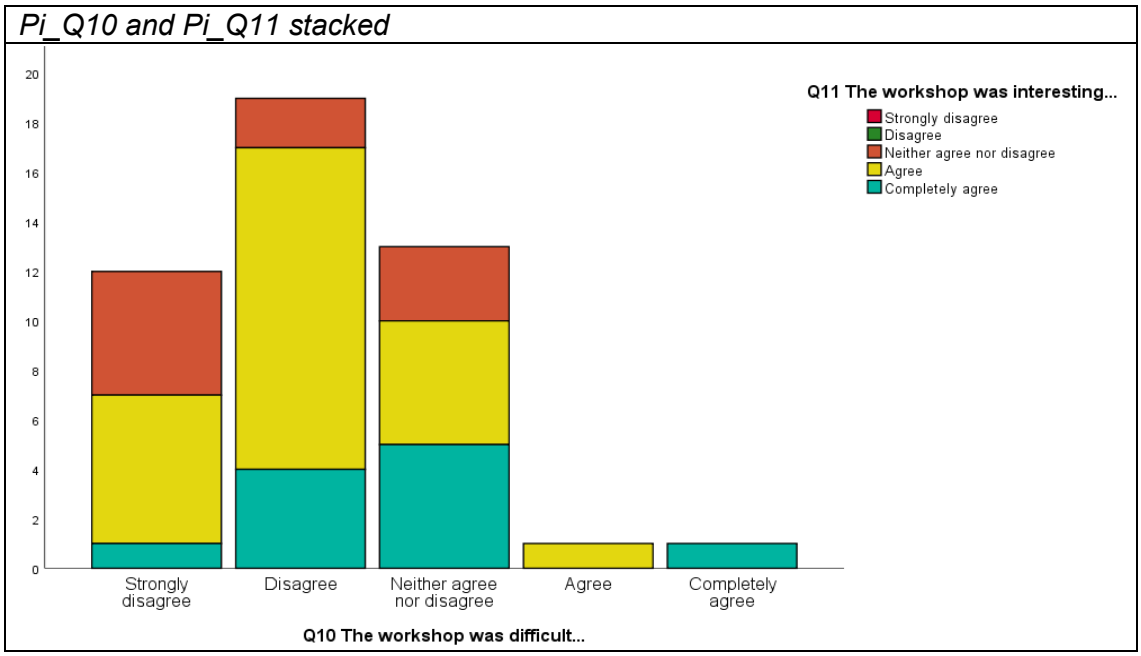

Figure 6.25. Answers to Pi_Q10 and Pi_Q11 stacked

Opinions were further divided with respect to the theoretical contents covered in the workshop, which were considered adequate and relevant by 28 (61%) respondents, whereas 10 (22%) disagreed or strongly disagreed, and 8 (17%) would neither agree nor disagree (Figure 6.26):

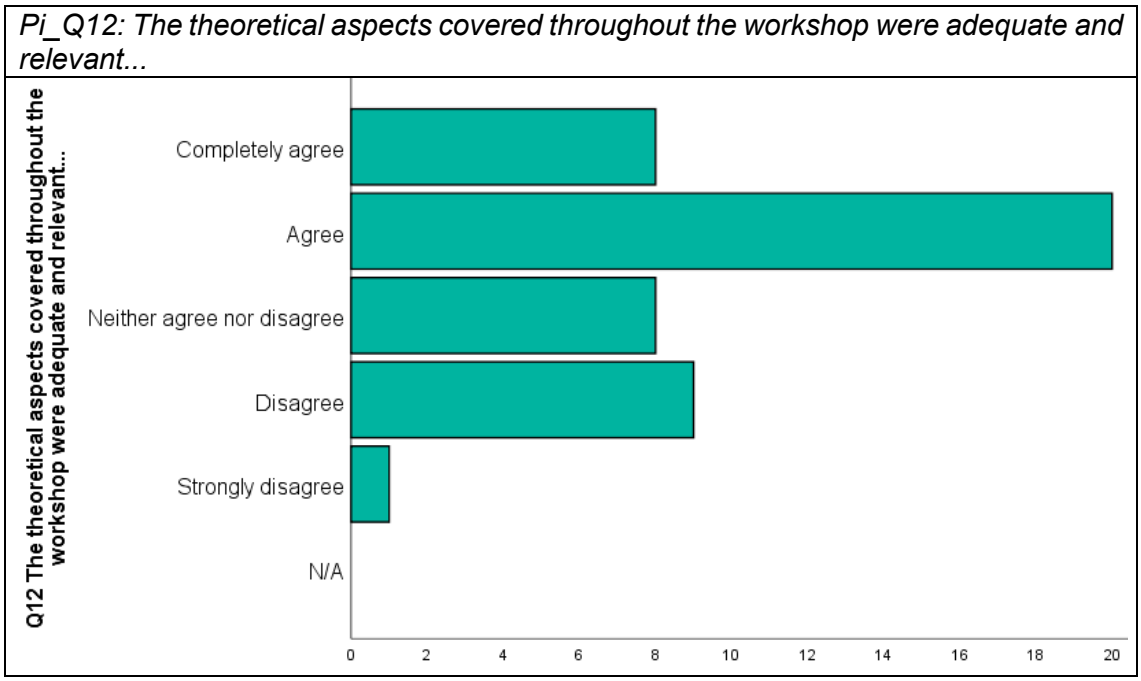

Figure 6.26. Answers to Pi_Q12

To shed more light on the respondents' opinion, open-ended questions are of great help and Pi_Q19, Pi_Q31 and Pi_Q32 were used by many respondents to express their views on the theoretical aspects covered. One respondent argued:

> *The lecture part was far too long. I would have rather spent more time doing stuff rather than listening for so long. A lot of it wasn't really relevant even though it was interesting.*

Another ten respondents included a comment similar to the latter in Pi_Q19, arguing statements such as "the theoretical section was a bit too long" and "included too much unnecessary information […] in comparison to the practical side". This input triggered changes in the designing of subsequent workshops, in which theory was curtailed significantly and closely adjusted to the practical sections.

As for the practical side (Figure 6.27), most respondents found the hands-on exercises very useful (19, 41%) or useful (17, 37%), whereas only one (2%) respondent did not find them of use and another 7 (15%) neither agreed nor disagreed the exercises were useful:

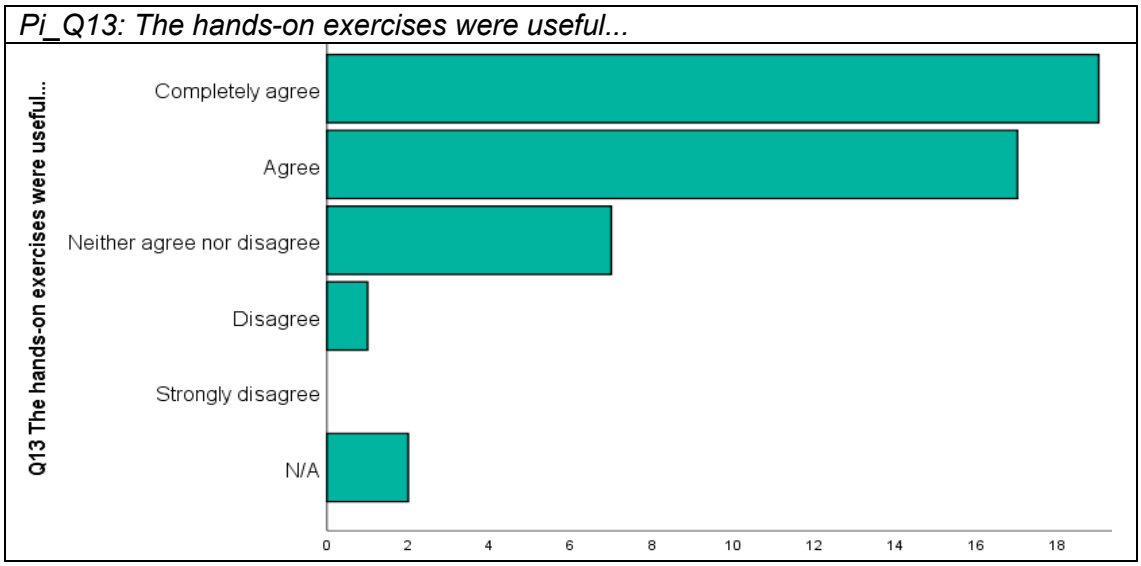

Figure 6.27. Answers to Pi_Q13

Students also found Moodle and other cloud-based learning tools rather easy to use as 16 (35%) completely agreed and 18 (39%) agreed that they were easy to use, whereas only 7 (15%) respondents either disagreed or strongly disagreed and 5 (11%) shared a more neutral opinion (Figure 6.28):

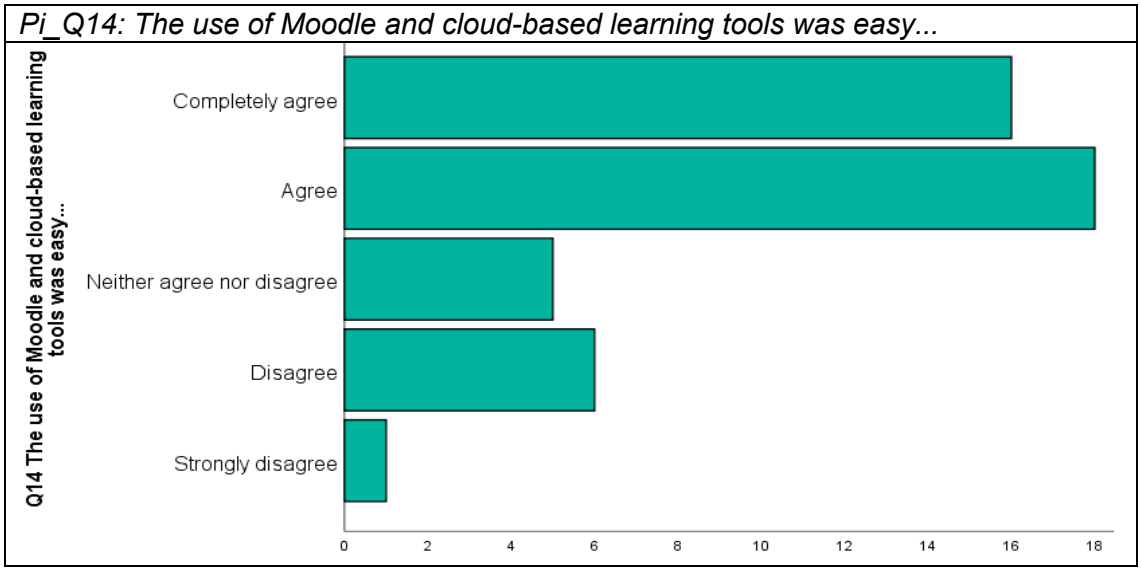

Figure 6.28. Answers to Pi_Q14

This data can be compared with their perception of how useful such tools are in Pi_Q15 (Figure 6.29), which throws up similar results: 10 (22%) respondents completely agreed, 24 (52%) agreed and 9 (20%) neither agreed nor disagreed. Only 3 (6%) respondents found online learning tools to be of little use. These answers are interesting since they show an overall high satisfaction with the use

of such learning tools, opening up many possibilities like the migration of Moodle's interface and features to online subtitling tools for training purposes.

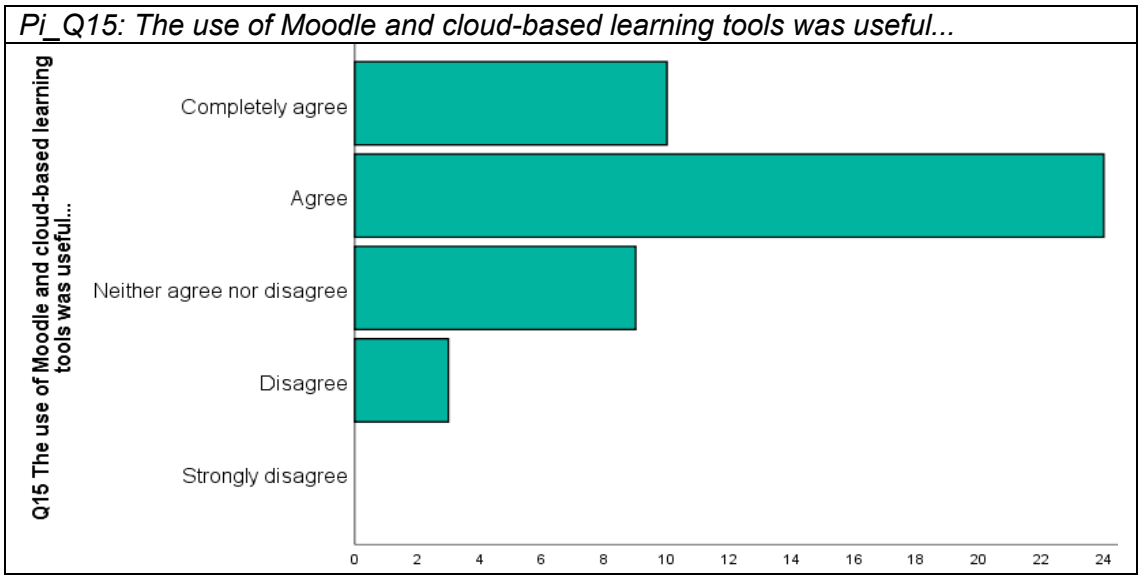

Figure 6.29. Answers to Pi_Q15

The materials distributed among the students were considered to be of good quality by 42 (91%) respondents, whereas 4 (9%) respondents neither agreed nor disagreed on their quality (Figure 6.30). This finding was also important as the decision was taken to maintain the general layout and content of the booklet and easy guides, which included step-by-step instructions, screenshots and text-timing tips, as well as a brief account of subtitle segmentation and line breaks, examples of which can be found in Appendix 2.

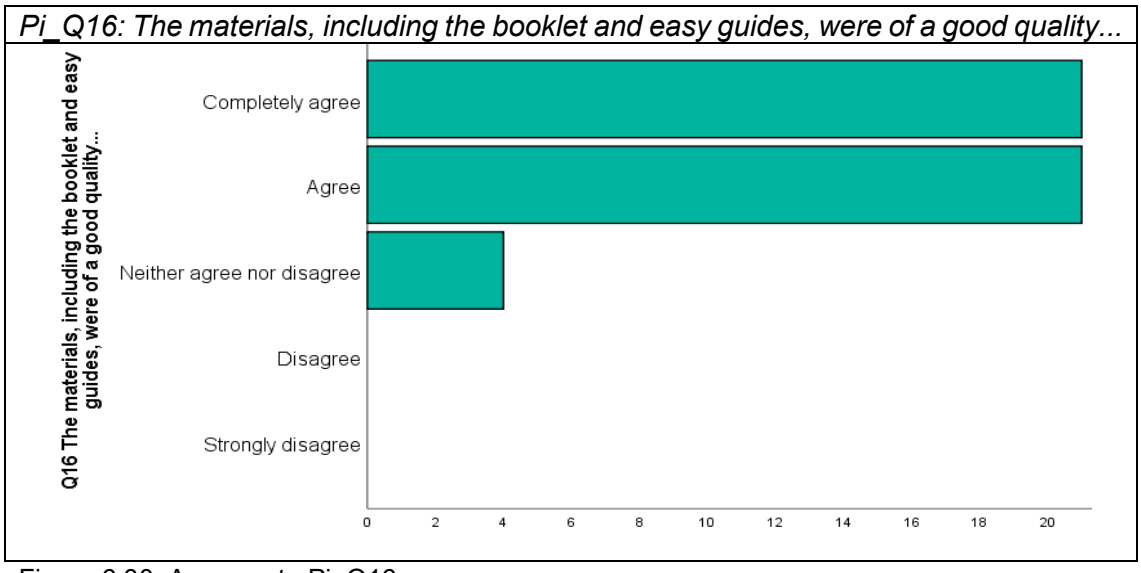

Figure 6.30. Answers to Pi_Q16

As shown in Figure 6.31, most respondents (39, 85%) admitted to having achieved a better understanding of subtitling at the end of the workshop, whereas 4 (9%) neither agreed nor disagreed, 2 (4%) disagreed, and 1 (2%) did not answer the question:

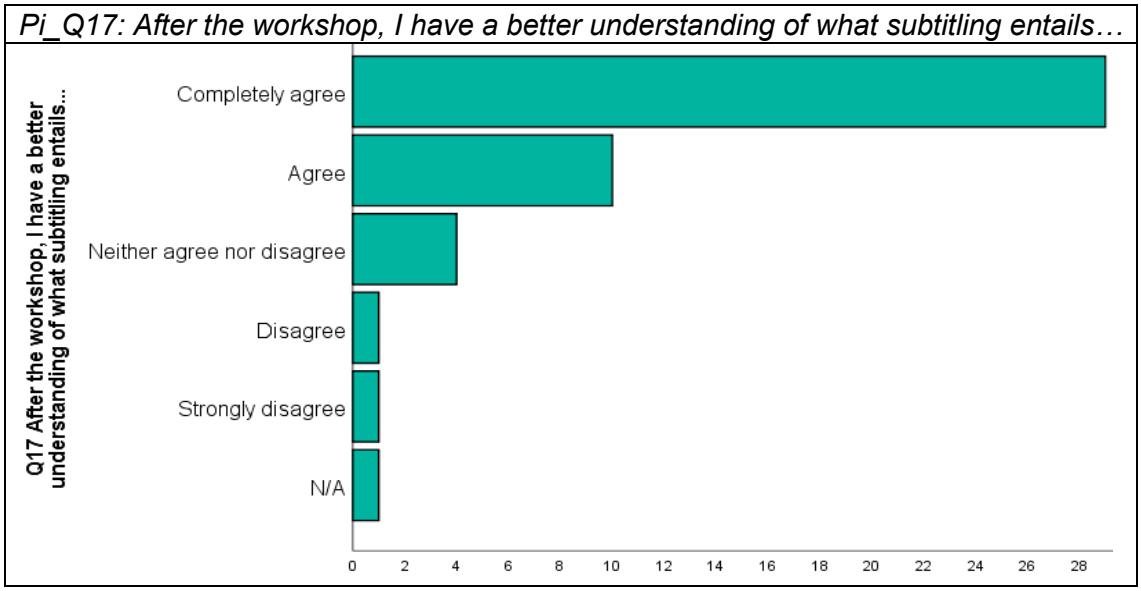

Figure 6.31. Answers to Pi_Q17

Further, 33 (72%) respondents argued that they were interested in learning more about subtitling, whereas only 1 (2%) respondent explicitly disagreed that they would like to learn more, and 11 (24%) claimed that they would neither agree nor disagree. One participant did not answer the question as displayed in Figure 6.32:

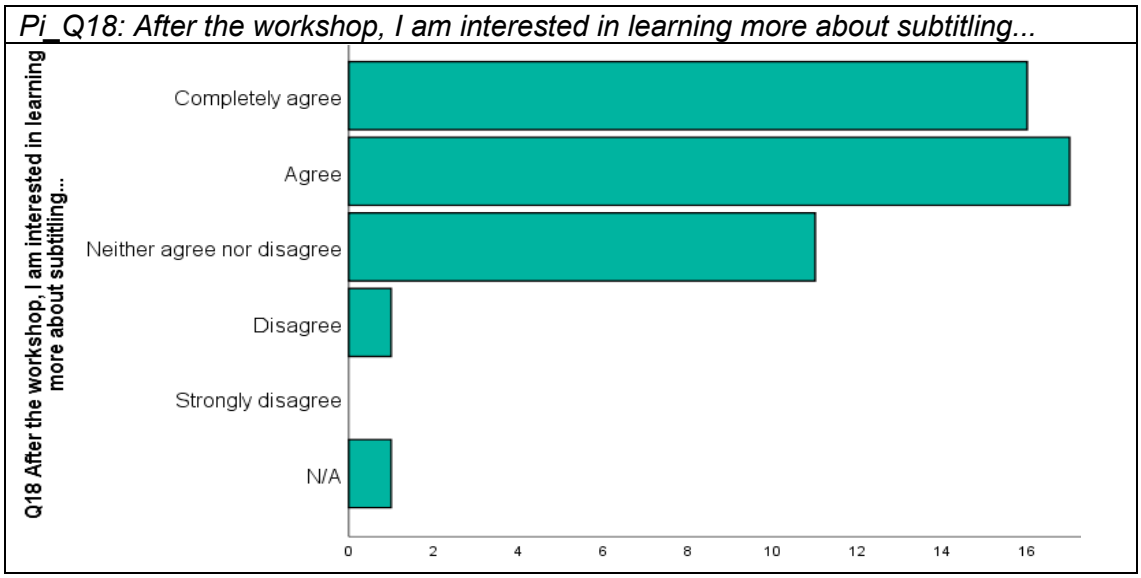

Figure 6.32. Answers to Pi_Q18

When compared, these figures offer interesting insights, like the fact that 30 (65%) students reported not only to have gained a better understanding of subtitling but also to be more interested in this discipline, as shown in Figure 6.33:

Pi_Q17 and Pi_Q18 stacked

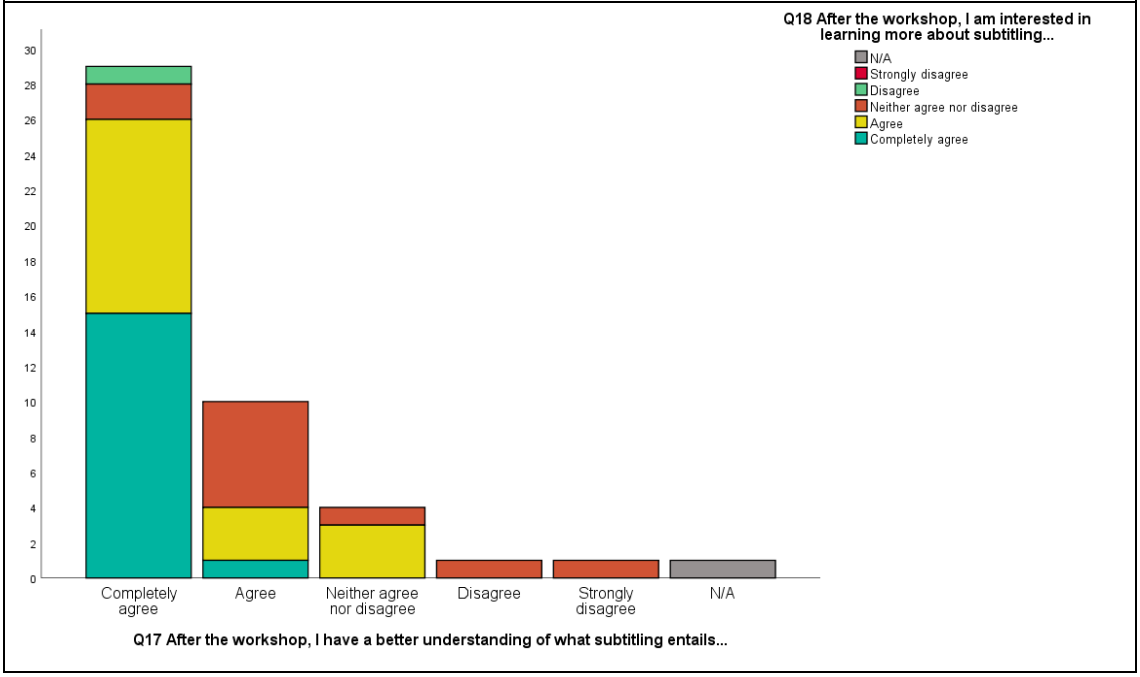

Figure 6.33. Answers to Pi_Q17 and Pi_Q18 stacked

Hence, it can be concluded that the better understanding students gained, the more likely they were to keep on learning subtitling, although a small proportion of respondents who were not sure they had attained a better understanding of subtitling also expressed a will to continue learning more about it. Several answers from Pi_Q19 illustrate the students' opinion more clearly:

I found the workshop interesting and now want to learn more about subtitling.

It was interesting and relevant.

Very interesting, something I've never thought about before but was really good.

As seen in Table 6.4, the median of Pi_Q11 to Pi_Q18 is very high, and such values systematically correspond to the respondents' agreement with the statements included in each question. The reason why Pi_Q10 has a significantly lower median is because students disagreed that the workshop was difficult.

Lower values can also be seen in Pi_Q12, Pi_Q14 and Pi_Q15, which, as discussed above, correspond to the theoretical aspects covered in the workshop and the level of difficulty and usefulness of Moodle and cloud-based learning tools, respectively. The standard deviation and variance values show that there is little disparity, with most students giving similar answers.

QUESTION	MEAN	MEDIAN	STANDARD DEVIATION	VARIANCE
Pi_Q10	2.13	2	0.91	0.83
Pi_Q11	4.02	4	0.68	0.47
Pi_Q12	3.54	4	1.07	1.14
Pi_Q13	4.23	4	0.8	0.64
Pi_Q14	3.91	4	1.09	1.19
Pi_Q15	3.89	4	0.82	0.68
Pi_Q16	4.37	4	0.64	0.42
Pi_Q17	4.44	5	0.92	0.84
Pi_Q18	4.07	4	0.84	0.70

Table 6.4. Average, median, standard deviation and variance for Pi_Q10 to Pi_Q18

The Likert plot in Figure 6.34 demonstrates, in a more visual fashion, that most respondents agreed, or completely agreed, with the statements presented in Pi_Q11 to Pi_Q18. This is exemplary of the respondents' overall satisfaction with the workshop, in terms of both content and format.

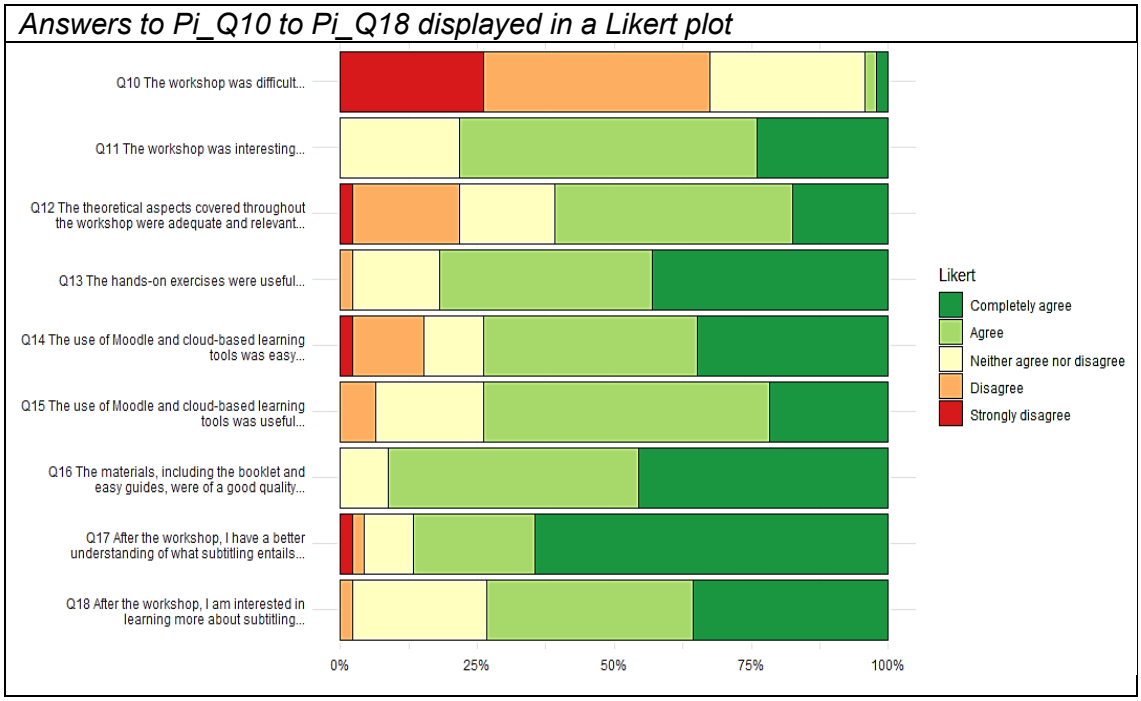

Figure 6.34. Likert plot showing the percentage of scale values for Pi_Q10 to Pi_Q18

However, Likert-type questions offer little room for a qualitative analysis, which is why respondents were given the opportunity to elaborate further in open-ended question Pi_Q19. Several answers from Pi_Q19 have already been discussed but some others call for greater attention here. As revealed by the respondents' input, the session was too focused on theoretical and professional aspects of subtitling, which were considered to be irrelevant and of little use to some attendants. For instance, one of the respondents argued:

> *The workshop was very interesting and I now have a better idea of what subtitling entails and the limitations which can challenge subtitlers. The session, however, was slightly chaotic at times. Perhaps the initial presentations could have been shorter with regard to subtitling info that was less specifically relevant to the task so that some more time could be dedicated to explaining the software so the session could run a bit smoother.*

The respondent's frustration is justified by the fact that the workshop was perhaps too professionally oriented, leaving little time to the exercises that students were expected to complete by the end of it.

One of the challenges, when it comes to the teaching of any type of theory, is attracting the students' attention and stimulating critical reflection so that they are able to apply it to professional practice. One way to illustrate this in the classroom is by showing real-life examples and then assigning simulated exercises to students. This might not have worked well on this occasion, as one respondent claimed:

> *The examples used in presentations were good but for the relative simplicity of the exercise (since timings etc. barely needed modifying), there was quite a lot of theory that may not have been as engaging for students who didn't know as much about subtitling.*

In terms of the workshop logistics, one respondent reported:

> *It was difficult for two students to work on one computer, especially as there was only one set of headphones.*

This was, unfortunately, not sorted out in time for reasons beyond our control, despite the issue having been flagged up prior to the workshop. Also regarding the logistics, another respondent wrote:

> *The instructions provided could have been made clearer, I had to ask the organisers several times what was happening next. Also could've [sic] made everyone sit in their translation groups from the start rather than making everyone move.*

This highlights the need to have contents and exercises clearly signposted.

Similar open-ended questions, which will be discussed in the below sections, have been of great help to shed light not only on the students' perception of the workshop but also on how user-friendly they found OOONA Tools to be.

6.2.3. Use of OOONA's Cloud-based Subtitling Tool

The next set of questions, Pi_Q20 to Pi_Q24, concerned the use of the cloud-based subtitling solution used to teach subtitling in the workshop: OOONA Tools. Respondents were asked to complete five Liker-type questions that were of great use to produce the technical reports that were shared with industry partner OOONA. Table 6.5 contains the frequencies and percentages for all variables and valuables in Pi_Q20 to Pi_Q24, which will be analysed in this section.

QUESTION	VALUES	FREQUENCY	PERCENT	CUMULATIVE PERCENT
Pi_Q20	N/A	0	0	0
	Strongly disagree	0	0	0
	Disagree	0	0	0
	Neither agree nor disagree	6	13.0	13.0
	Agree	22	47.8	60.9
	Completely agree	18	39.1	100
Pi_Q21	N/A	30	65.2	65.2
	Strongly disagree	3	6.5	71.7
	Disagree	3	6.5	78.3
	Neither agree nor disagree	4	8.7	87.0
	Agree	4	8.7	95.7
	Completely agree	2	4.3	100
	N/A	2	4.3	4.3

Pi_Q22	Strongly disagree	10	21.7	26.1
	Disagree	13	28.3	54.3
	Neither agree nor disagree	9	19.6	73.9
	Agree	11	23.9	97.8
	Completely agree	1	2.2	100
Pi_Q23...	N/A	0	0	0
	Strongly disagree	0	0	0
	Disagree	2	4.3	4.3
	Neither agree nor disagree	2	4.3	8.7
	Agree	23	50.0	58.7
	Completely agree	19	41.3	100
Pi_Q24	N/A	0	0	0
	Strongly disagree	0	0	0
	Disagree	2	4.3	4.3
	Neither agree nor disagree	6	13.0	17.4
	Agree	21	45.7	63.0
	Completely agree	17	37.0	100

Table 6.5. Frequencies and percentage values of Pi_Q20 to Pi_Q24

Respondents seemed to have liked OOONA Tools very much (18, 39%) and a little (22, 48%), with only 6 (13%) respondents showing neither like nor dislike (Figure 6.35). As will be seen in Pi_Q25, several respondents (16, 35%) commented on the fact that the tool was very easy to use. Some also reported as benefits its simple interface and the fact that it is browser based.

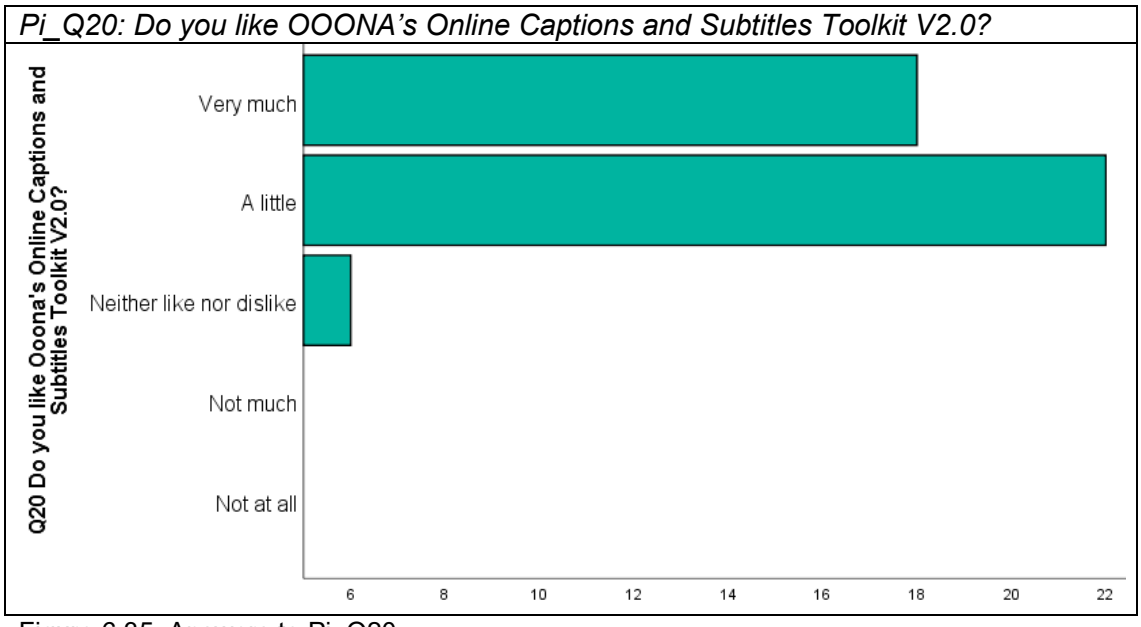

Figure 6.35. Answers to Pi_Q20

As previously mentioned, the Create tool allows users to originate their own templates and master files; however, due to time pressure, this exercise had to be removed from the workshop altogether. Results from Pi_Q21 have therefore been discarded.

The template translation tool was used by all respondents during the origination exercise, and 10 (22%) considered it to be very easy, whereas only 1 (2%) person claimed it was very difficult. Almost half of the respondents found the tool easy (13, 28%) or neither easy nor difficult (9, 20%), but 11 (24%) considered it to be difficult, as seen in Figure 6.36:

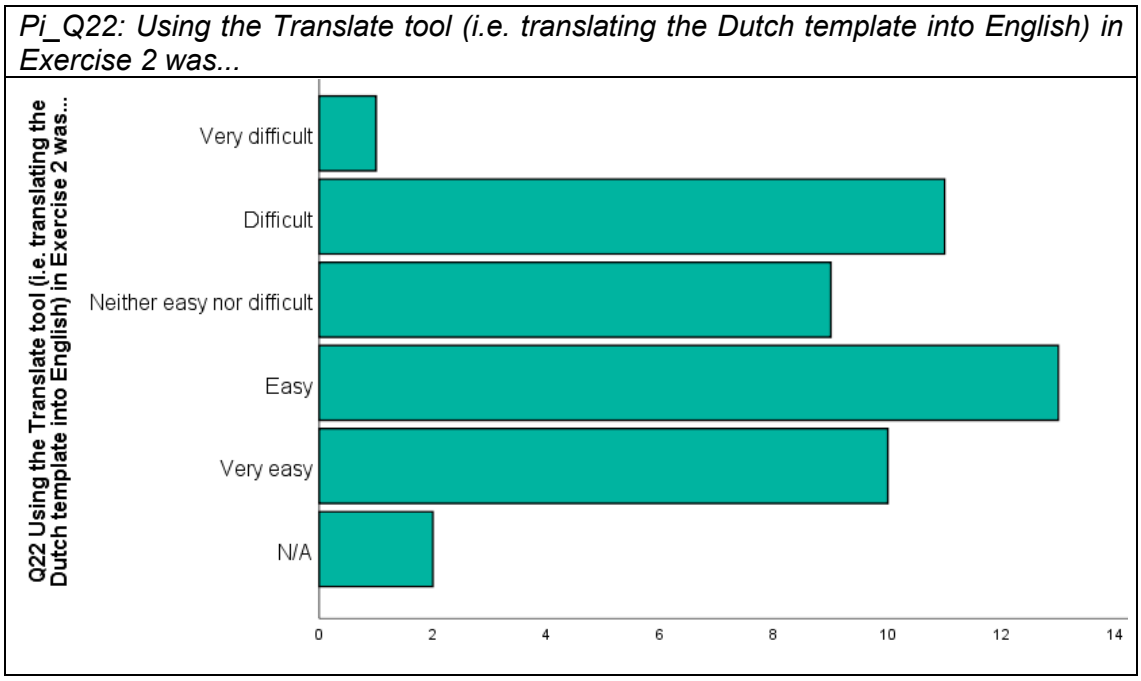

Figure 6.36. Answers to Pi_Q22

Some of the answers from Pi_Q26 help elucidate the reasons why some respondents could have found the tool cumbersome. For instance, one of them argued that “it's a little bit difficult to use if I was picking it up without any help”, whereas others claimed that:

Sometimes it was difficult to find your place in the video.

[It] was quite hard to log onto it at the beginning, but once it had loaded, all was fine.

[It was] difficult to know how to export.

[It was] complicated saving/sending.

These statements are proof that some students required more detailed instructions to be able to carry out the exercises included in the booklet. Yet, in sharp contrast, eight respondents explicitly expressed that there was nothing that they did not like, and one of them even wrote:

> *We didn't actually do anything challenging. The time limit was far too long for the little work we did. While it was interesting, it would've been more challenging to do more, or do transcribe the dutch [sic] and then do the english [sic]. Just something more.*

It goes without saying that the diversity of backgrounds among students, especially concerning their previous experience in translation and subtitling, may have played a decisive role in these responses (Section 6.2.1).

There seems to be a slight proportional correlation between the students' level of satisfaction with OOONA Tools and the level of difficulty perceived (Figure 6.37). Out of the 18 (39%) respondents who liked OOONA Tools very much, 16 (35%) found the Translate tool to be very easy, easy or neither easy nor difficult, and out of the 22 (48%) who liked OOONA Tools a little, 14 (30%) answered in a similar vein (Figure 6.39). Yet, 8 (17%) respondents considered the Translate tool difficult, which constitutes a marked difference with the previous answers.

This calls for further attention to the students' input from the open-ended questions and for the re-structuring of the teaching methodology in upcoming workshops.

Pi_Q20 and Pi_Q22 stacked

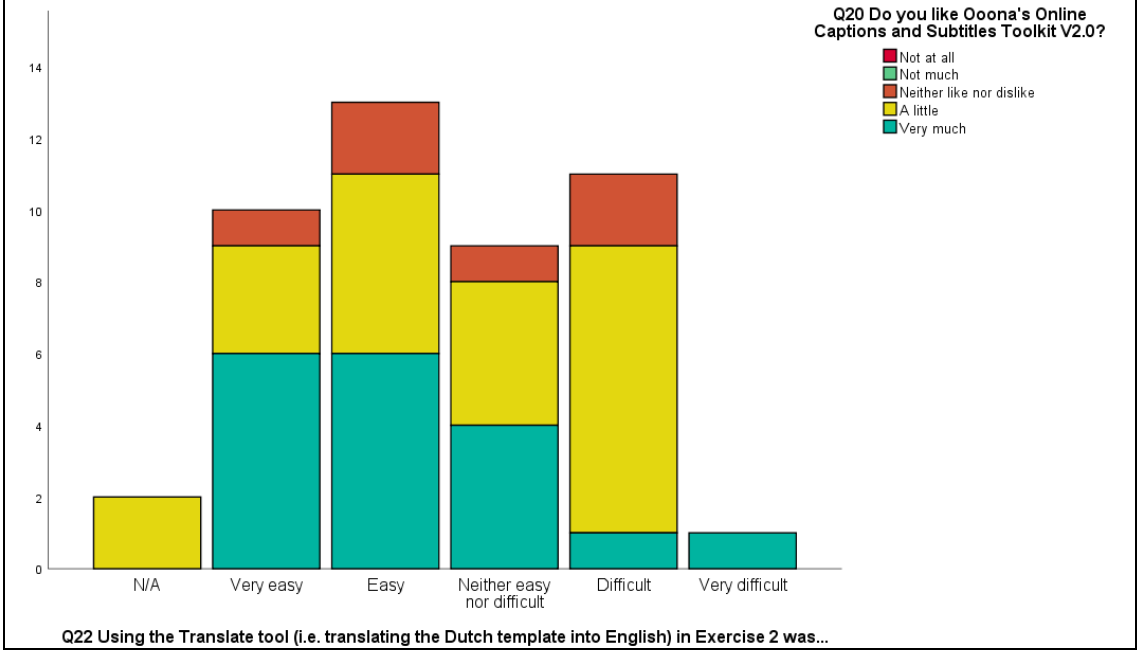

Figure 6.37. Answers to Pi_Q20 and Pi_Q22 stacked

Question Pi_Q24 asked students whether or not they would consider using OOONA Tools in the future, to which 38 (83%) answered that they would (Figure 6.38). In fact, only 2 (4%) respondents reported that they would not use it in the future, while another 6 (13%) remained doubtful. This result shows the respondents' positive disposition to use the tool in the future, although they were not asked to specify whether this would be for professional or educational purposes.

Pi_Q24: I would like use OOONA's Online Captions and Subtitles Toolkit in the future...

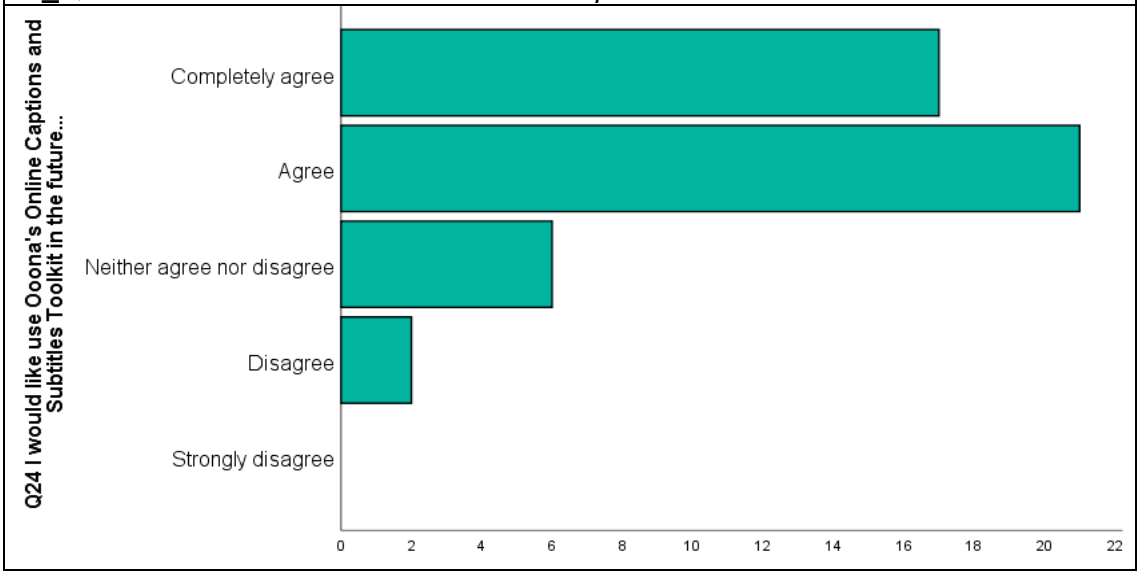

Figure 6.38. Answers to Pi_Q24

When compared to the results from Pi_Q20, the confirmation of the following trend can be observed: students who claimed to have enjoyed using the tool were more prone to want to use it in the future. A total of 35 (76%) students liked the tool, a little or very much, and also claimed that they were likely, or very likely, to use it in the future.

Again, students who liked OOONA Tools a little (13, 28%) were also prone to agree that they would use it in the future, while those who liked it very much (12, 26%) were equally prone to completely agree with such statement. As obvious as it may seem, these results testify to the students' overall satisfaction with the tool. Having said that, there was also a minority of students who, having answered that they liked or neither liked nor disliked the tool, were less eager to use the tool in the future, as seen in Figure 6.39:

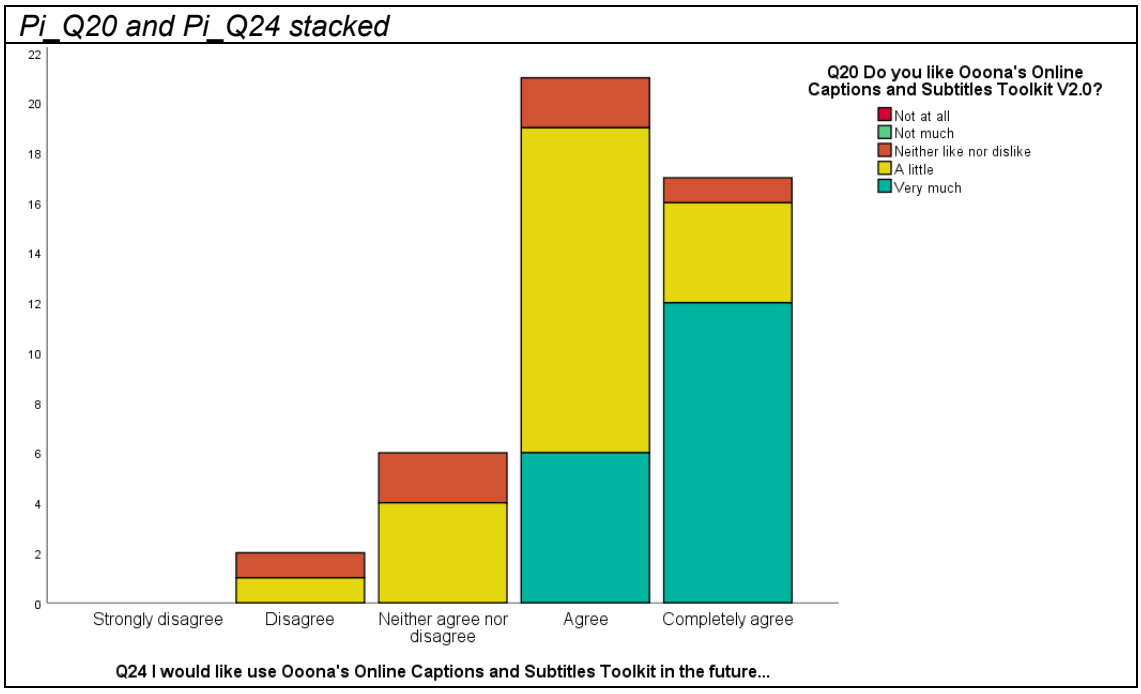

Figure 6.39. Answers to Pi_Q20 and Pi_Q24 stacked

The values shown in Table 6.6 below show that, again, overall mean and median values remain steadily high, except for Pi_Q22, and this is simply because the low values assigned to such question were 'easy' and 'very easy', which ought to be considered equivalently positive in this context.

QUESTION	MEAN	MEDIAN	STANDARD DEVIATION	VARIANCE
Pi_Q20	4.26	4	0.68	0.46
Pi_Q22	2.43	2	1.259	1.58
Pi_Q23	4.28	4	0.75	0.56
Pi_Q24	4.15	4	0.82	0.66

Table 6.6. Average, median, standard deviation and variance for Pi_Q20 to Pi_Q24

Yet, Pi_Q22 also shows, as opposed to similar values from previous questions, considerably higher standard deviation and variance values (Figure 6.40). These reflect the students' diversity and confirm that whereas many students found the Translate tool to be easy and user-friendly, others experienced serious difficulties in grasping the nuts and bolts of the application, as confirmed by qualitative data extracted from Pi_Q26.

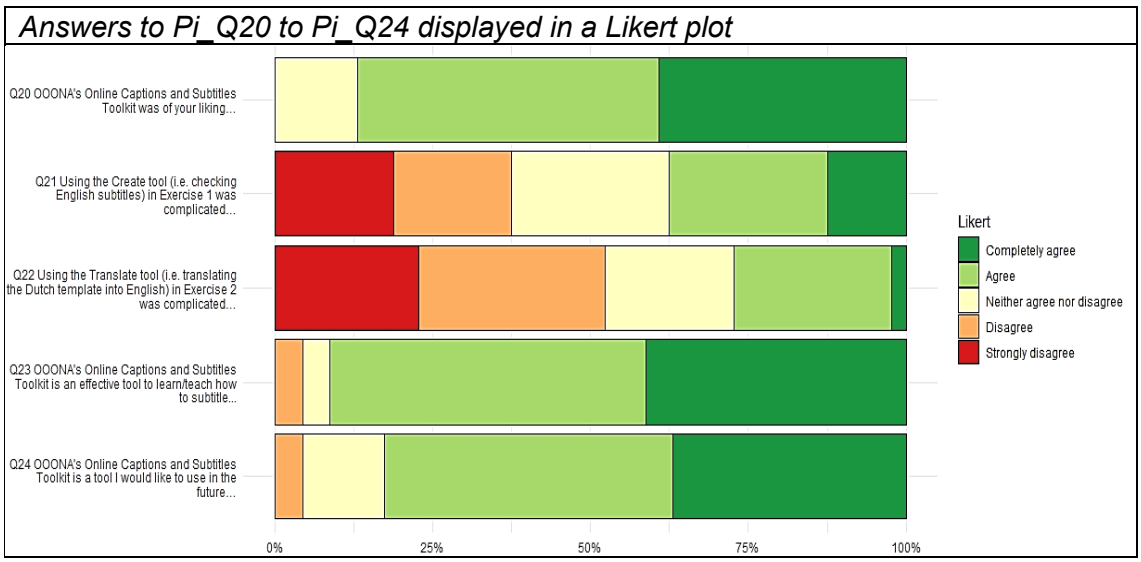

Figure 6.40. Likert plot showing the percentage of scale values for Pi_Q20 to Pi_Q24

Finally, in Pi_Q25 and Pi_Q26, students were asked what they had enjoyed the most, and the least, of OOONA Tools. The most prominent characteristic was its user-friendliness and overall ease of use – 16 (35%) responses include the word 'easy' –, whereas only a few respondents claimed that the software was difficult to use – 3 (7%) responses include the word 'difficult'.

Several respondents highlighted the fact that the tool was web based and had a lean and easy interface, and one of them even claimed that OOONA Tools is a good simple tool for beginners. Many others found the whole experience enjoyable and fun. A respondent, however, claimed:

Having used more professional subtitling software previously, it was a little restricted in its features. Also [sic] sometimes frustrating because it is browser based so misclicks etc were dangerous.

The above comment was valuable as the subsequent workshops and easy guides made a greater emphasis on the use of OOONA Tools-specific hotkeys. Other problems reported by the participants were:

Inability to edit time in and time out.

Couldn't change timings.

When you click on the box and you go accidentally to the bottom line of the subtitle but there's no way of telling "sometimes it didn't synchronise.

Sometimes it was difficult to find your place in the video.

Difficult to know how to export.

Complicated saving/sending.

Lagging before every subtitle makes it difficult to check timing.

It goes without saying that it is intricate to ascertain whether some of the aforementioned problems are due to the tool's deficiencies or the students' lack of sufficient training, but they can certainly inform training practices by pinpointing some of the main bottlenecks: adjusting in and out timings and checking them against the video player. User feedback has prompted OOONA to fine-tune certain aspects of the former version of their applications. For instance, their default set of hotkeys and introduce new shortcuts that, similarly to other paid subtitling software, such as Wincaps Qu4ntum, capitalise on the numeric keypad for video playing and subtitle cueing (Section 6.4).

6.2.4. Workshop Organisation and Content

This section also reports on Likert-scale questions, Pi_Q28 to Pi_Q30, which aimed to collect information on the appropriateness of the films, the organisation of the content, and the students' level of participation during the experience.

QUESTION	VALUES	FREQUENCY	PERCENT	CUMULATIVE PERCENT
Pi_Q28	N/A	0	0	0
	Strongly disagree	0	0	0
	Disagree	0	0	0
	Neither agree nor disagree	4	8.7	8.7
	Agree	22	47.8	56.5
	Completely agree	20	43.5	100
Pi_Q29	N/A	0	0	0
	Strongly disagree	1	2.2	2.2
	Disagree	3	6.5	8.7
	Neither agree nor disagree	10	21.7	30.4
	Agree	24	52.2	82.6
	Completely agree	8	17.4	100
Pi_Q30	N/A	0	0	0
	Strongly disagree	0	0	0
	Disagree	1	2.2	2.2
	Neither agree nor disagree	7	15.2	17.4
	Agree	21	45.7	63.0
	Completely agree	17	37.0	100

Table 6.7. Frequencies and percentage values of Pi_Q28 to Pi_Q30

In general terms, most students found the short films to be very suitable (20, 44%) or suitable (22, 48%), with a very small proportion of students claiming that they would not consider them either suitable or unsuitable (4, 9%) as shown in Figure 6.43:

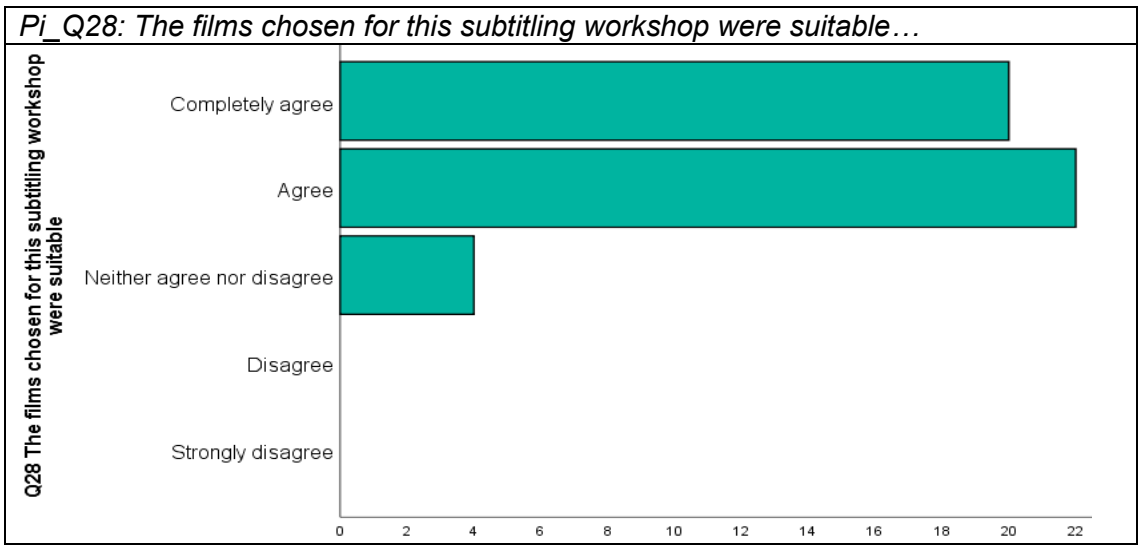

Figure 6.41. Answers to Pi_Q28

Previous research, further discussed in Section 2.2, has already reported on the didactic benefits of using short films as teaching materials in the foreign language classroom (López-Cirugeda and Sánchez-Ruiz 2013), whereas the use of edited short film scenes seem to prevail in AVT training (Dorado and Orero 2007; Bartoll and Orero 2008; Matamala 2008). Be they short films or film excerpts, videos shorter than ten minutes are often preferred to longer videos, especially at an early stage, as claimed by Talaván (2010, 2011). Students did not comment on the films in the open-ended questions and no post-screening questionnaires were distributed, but it is understood that they were happy with the nature of the clips as confirmed by this data.

Responses were more heterogeneous vis-à-vis the manner in which the workshop contents had been organised. While 8 (17%) students completely agreed, and 24 (52%) agreed, that the contents were well organised, a small proportion of students (4, 9%) did not consider these to be satisfactory enough, as displayed in Figure 6.42:

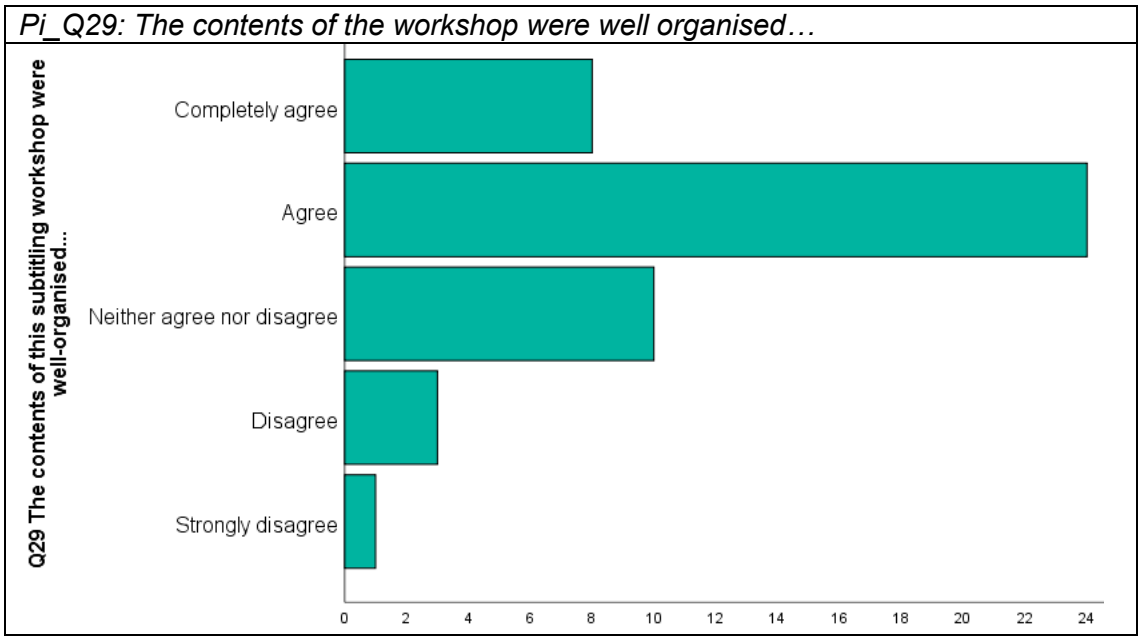

Figure 6.42. Answers to Pi_Q29

As established in the previous sections, many students reported their discontent with the amount of time devoted to theory in detriment of the practical exercises in open-ended Pi_Q19, which may well be the reason why values in Pi_Q29 are somewhat low, too. Furthermore, several respondents claimed that they would

have preferred to have a longer break, which might be advisable so that students have the time necessary to digest the information covered during the theoretical lesson. As de Bruyckere et al. (2015:88) explain:

> different research studies have shown the importance of occasionally stopping with the learning process, so that the learners can actually practice what needs to be learned. You will learn nothing if you don't rest and sleep at the end of a long day's training. And overtraining can also have a limiting effect on learning, if you don't allow enough time for information processing.

Last but not least, students were prompted to express their opinion on how actively they could participate in the workshop, which was conceived as a situated and project-based experience.

Following the literature, and as seen in Section 4.2, in situated learning, "learners become involved in a 'community of practice' where the student advances from 'novice', at the periphery of this community, to 'expert', at its centre" (González-Davies and Enríquez-Raído 2016:8). This goes in line with project-based and socioconstructivist learning experiences, in which the learning process revolves around the completion of a semi-authentic project that is monitored by the educator, acting as a facilitator of knowledge.

That is precisely how the workshop was conceived: the first theoretical lesson was followed by a scaffolded practical session that led to hands-on exercises in which students were divided up in teams to complete a step-by-step subtitle origination assignment. All students had been made aware of the need to work in teams and deliver their translation in time. During the workshop, their work was monitored by several subtitling trainers to whom they could pose questions.

The careful preparation of the workshop vis-à-vis student participation was very positively reflected in the students' answers to Pi_Q30 (Figure 6.43) since only 1 (2%) student disapproved and 7 (15%) neither approved nor disapproved of how the workshop had been organised. In contrast, 21 (46%) respondents agreed, and 17 (37%) completely agreed, that the workshop allowed students to participate actively throughout. This data seems to back the idea that project-

based, situated subtitling workshops improve active participation by means of teamwork.

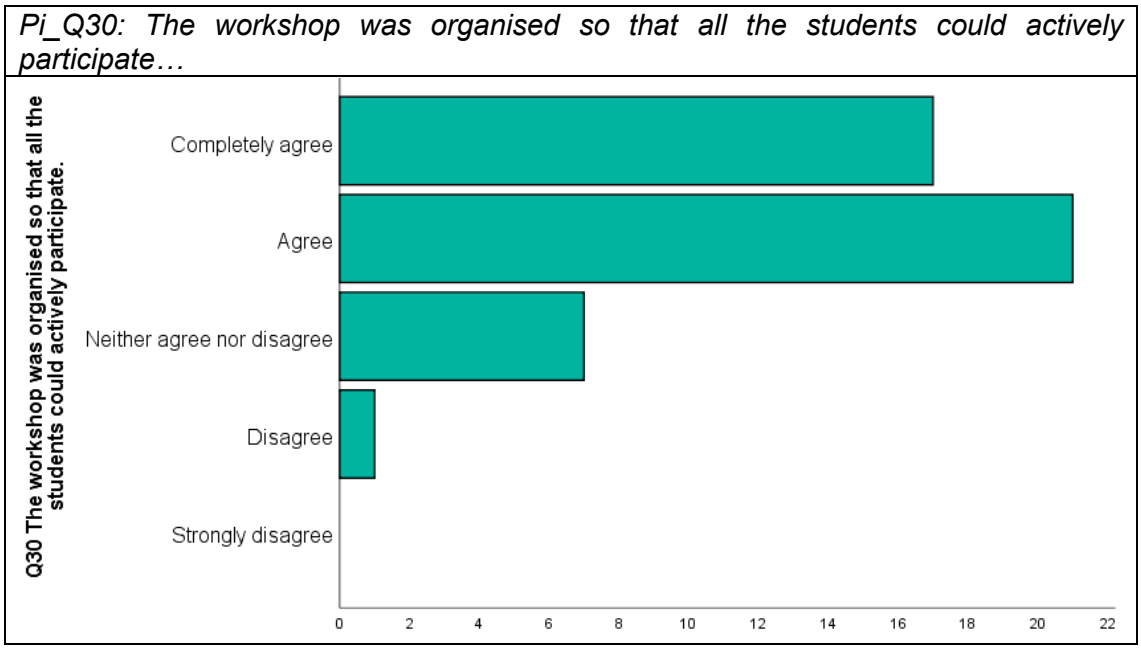

Figure 6.43. Answers to Pi_Q30

Table 6.8 below confirms an overall high satisfaction with the films, contents and organisation, although the former and the latter show higher means than the contents of the workshop. The slightly lower mean of Pi_Q29 may well respond to the respondents' answers from previous Pi_Q10 to Pi_Q18, like the difficulty, usefulness of exercises, theory, materials, etc., which have been covered in further depth in Section 6.2.2.

QUESTION	MEAN	MEDIAN	STANDARD DEVIATION	VARIANCE
Pi_Q28	4.35	4	0.64	0.41
Pi_Q29	3.76	4	0.90	0.81
Pi_Q30	4.17	4	0.77	0.59

Table 6.8. Average, median, standard deviation and variance for Pi_Q28 to Pi_Q30

The below Likert plot in Figure 6.44 demonstrates, in a more visual fashion, that most respondents agreed, or completely agreed, with the statements in Pi_Q28 to Pi_Q30, thus demonstrating their overall satisfaction with the workshop, in terms of both content and format:

Answers to Pi_Q28 to Pi_Q30 displayed in a Likert plot

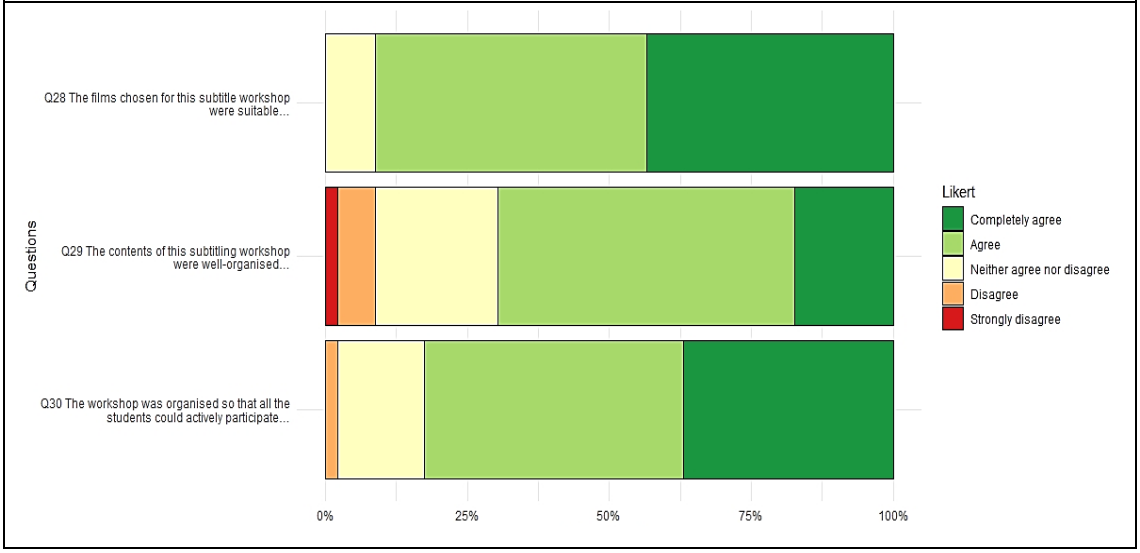

Figure 6.44. Likert plot showing the percentage of scale values for Pi_Q28 to Pi_Q30

However, Likert-type questions offer little room to descriptive analysis and necessitate from open-ended questions, which is why respondents were given the opportunity to elaborate further in Pi_Q31. Some respondents provided the following feedback, making it clear that they would have appreciated more practice at the expense of theory as well as greater interactivity between groups:

Shorter theory.

The films were great and interesting.

More hands on and activities than lecture.

We could have peer reviewed other people's work and maybe switched groups halfway through.

It can therefore be concluded that students were overall satisfied with the way in which the workshop had been organised and how it developed.

6.2.5. Further Findings, Summary of Results and Action Points

Following the above state of affairs, a Pearson's correlation two-tailed test was carried out in SPSS, which resulted in the correlation table contained in Appendix 5. This table shows the significance levels between the results of each question, which is expressed in percentage values. When the value is lower than 0.05, or

0.01 in some cases, the data might be correlated to some extent (boxes highlighted in orange in Appendix 5). This data has been analysed in SPSS following different statistical techniques, including crosstabulation, and has been visually illustrated with clustered and stacked bar graphs. The sex factor, however, has been discarded altogether due to the bias caused by the considerably higher number of female students, which alters the statistical significance of the results in the $p<0.01$ test.

Drawing on the conclusions reached so far, and in order to expand on the previous analysis, a series of questions will now be analysed below.

1. How many students with no previous knowledge of subtitling considered the course to be useful, adequate and relevant, and easy?

Exactly half of the respondents had not taken any subtitling-specific courses prior to attending the workshop and considered the experience to be adequate and relevant (Figure 6.45):

Pi_Q9 and Pi_Q12 stacked

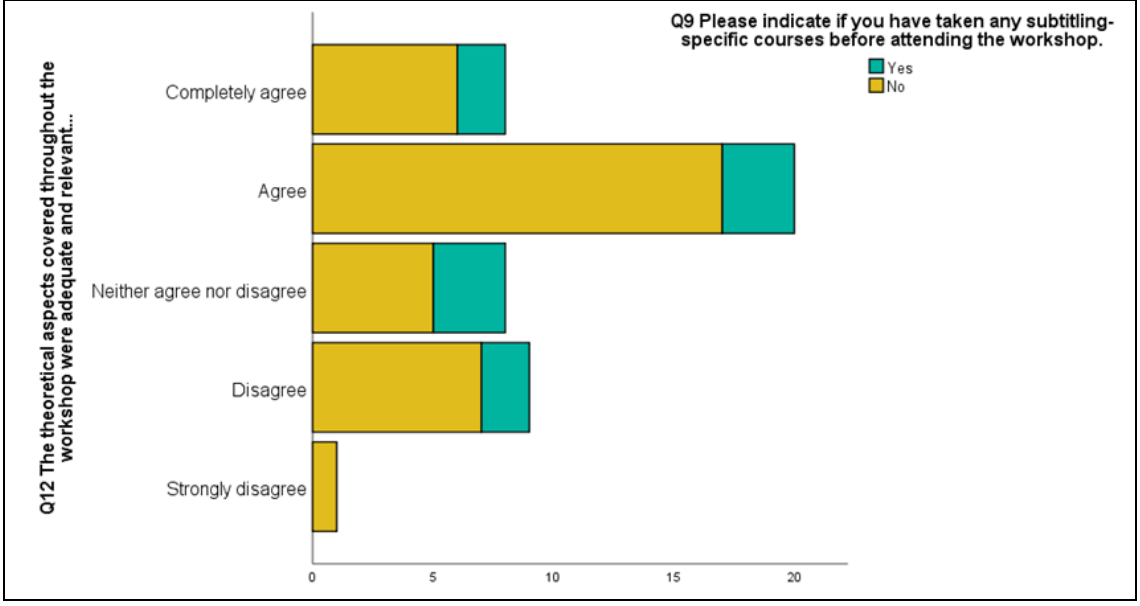

Figure 6.45. Answers to Pi_Q9 and Pi_Q12 stacked

The significantly smaller proportion of respondents who had taken subtitling courses before also seemed to have positive responses. A similar result can be

found in Figure 6.46, which shows that 29 (62%) respondents had not taken any subtitling-specific courses previously and considered the workshop to be useful (13, 28%) or very useful (16, 35%). None of the students with prior experience considered the workshop not useful, with a total of 7 (15%) claiming it was useful or very useful.

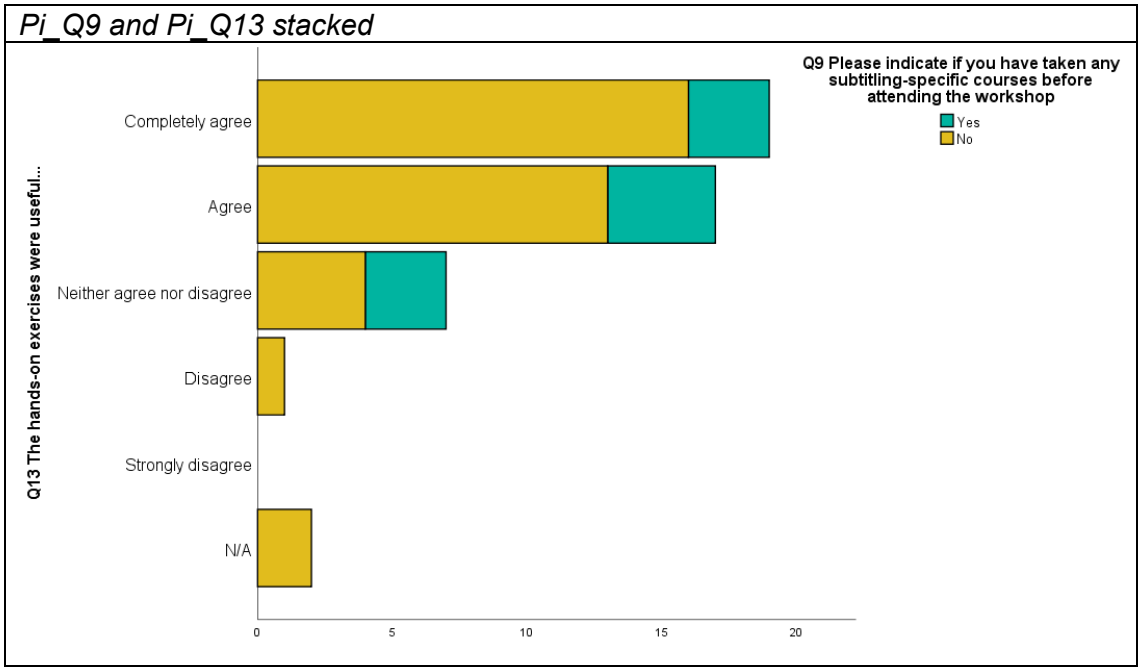

Figure 6.46. Answers to Pi_Q9 and Pi_Q13 stacked

2. How old are the students who had undertaken translation and subtitling training before and those who liked OOONA Tools the most?

As it turns out, there were no students younger than 20 years old that had previous training in subtitling, and only 10 (22%) were older than 21 years old and had taken subtitling courses before, while 14 (30%) of them had not (Figure 6.47). This data confirms some of the assumptions made in Section 4.5.2, in which it was stated that subtitling is often part of advanced-level undergraduate and postgraduate courses of study only.

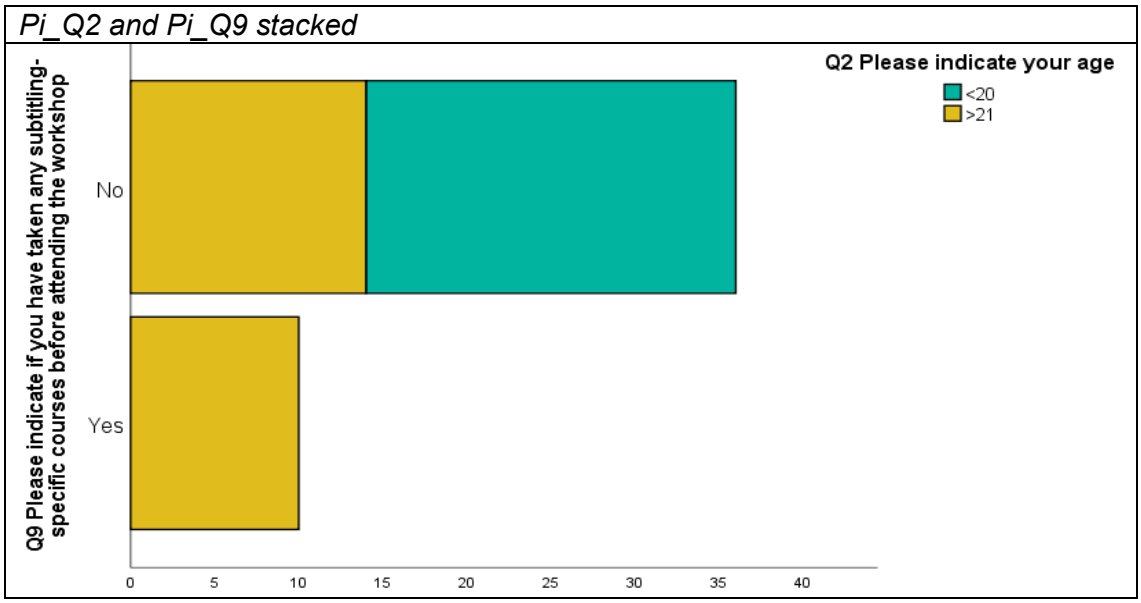

Figure 6.47. Answers to Pi_Q2 and Pi_Q9 stacked

As shown in Figure 6.48, there seems to be a smooth balance between respondents under and over 20 years old regarding how much they liked OOONA Tools; 20 (43%) were over 21 years old and enjoyed the tool a little or very much, while 21 (44%) were younger than 20 years old and also enjoyed the tool. These results confirm that, whereas the age factor seems to affect the training they have received at university, it has not influenced their perception on the usefulness of the tool.

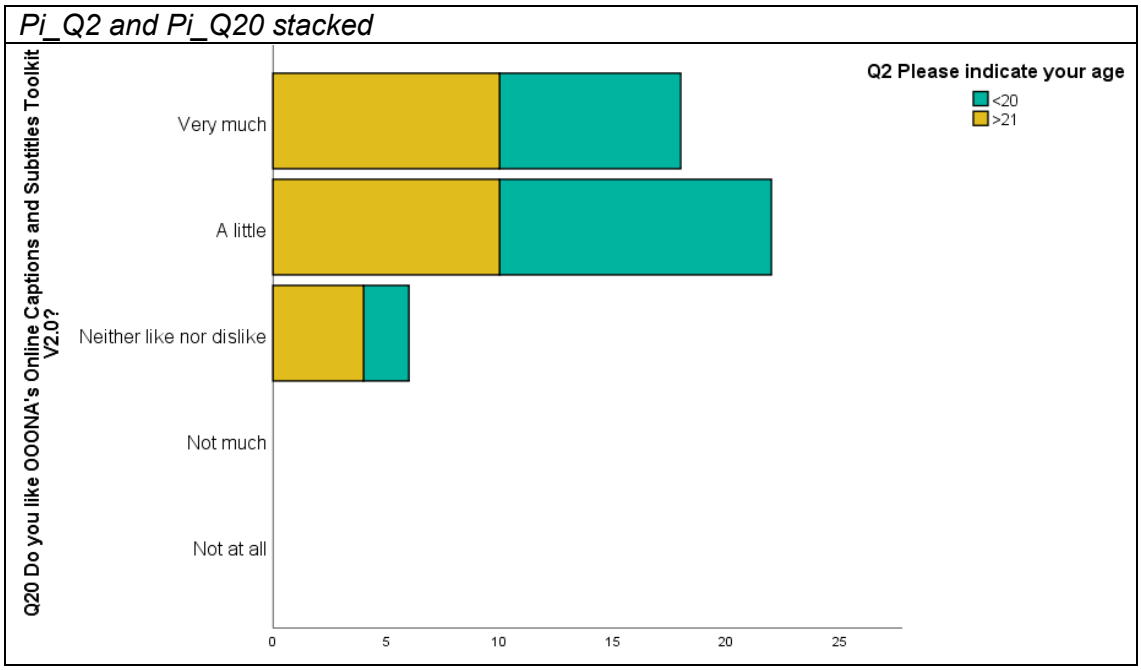

Figure 6.48. Answers to Pi_Q2 and Pi_Q20 stacked

3. How many students with no previous knowledge of translation/subtitling reported to have acquired a better understanding of what subtitling entails after the workshop?

As previously established, almost half of the students (22, 48%) had no previous translation training; all of them claimed to have a better or much better understanding of subtitling (Figure 6.49). A much smaller figure (17, 37%) of those with previous training in translation had a similar view:

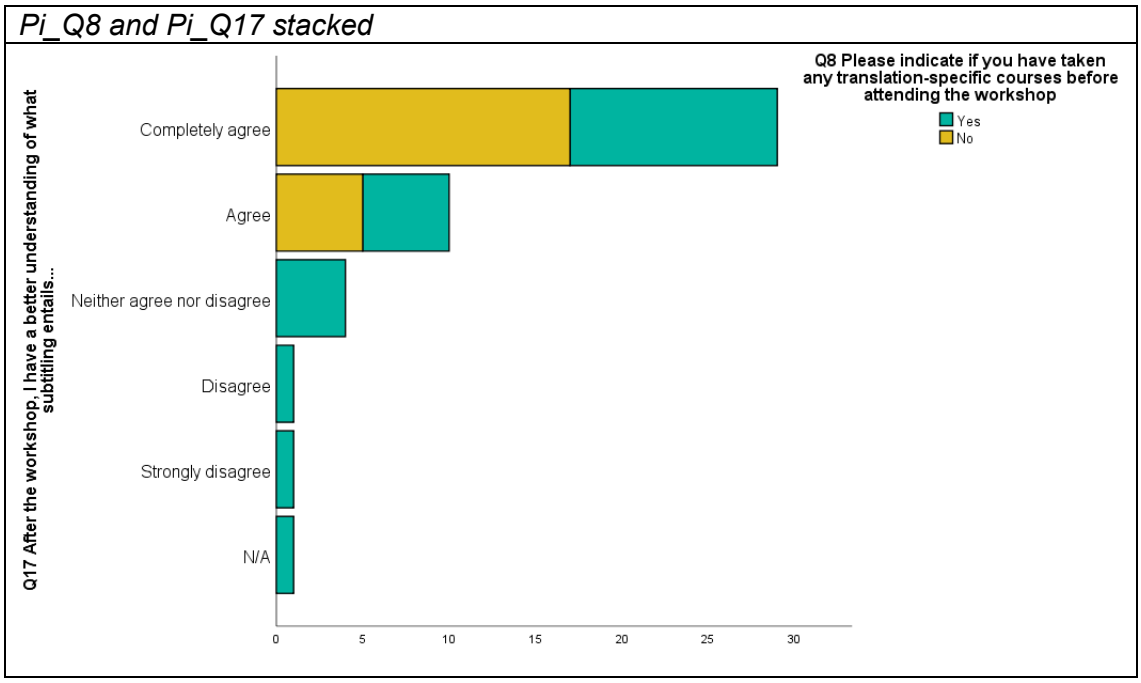

Figure 6.49. Answers to Pi_Q8 and Pi_Q17 stacked

Also illustrative of this trend is the fact that 28 (60%) students had previous subtitling-specific training and yet completely agreed that they, too, had a better understanding of what subtitling entails after having attended the workshop (Figure 6.50). Only one student with no previous training and another one with previous training disagreed with this statement, whereas 6 (13%) students with previous subtitling training admitted to having gained an even better understanding.

Pi_Q9 and Pi_Q17 stacked

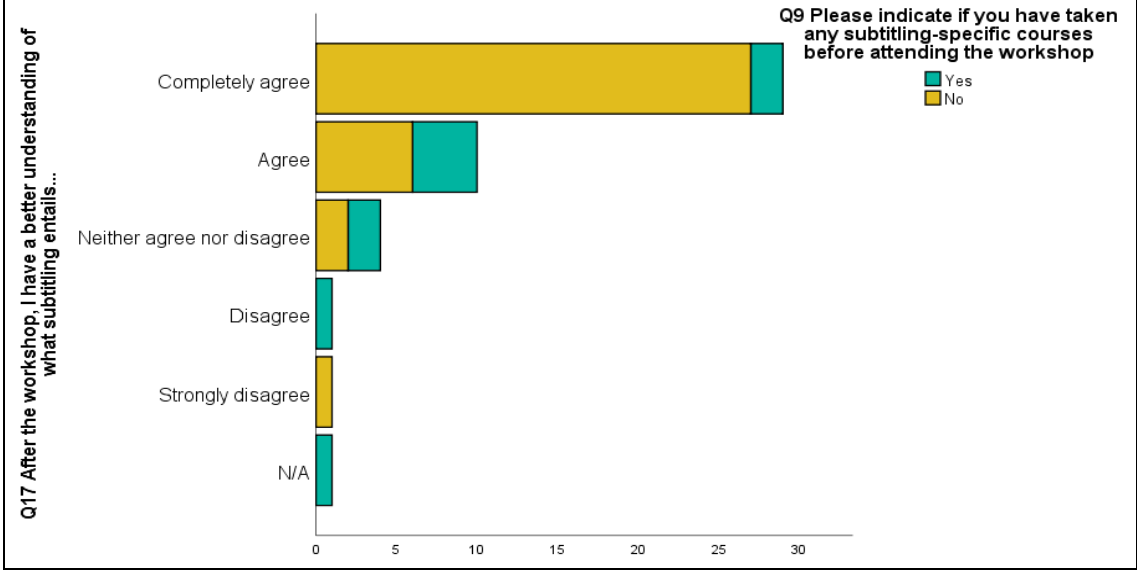

Figure 6.50. Answers to Pi_Q9 and Pi_Q17 stacked

4. Did students who found Moodle easy to use find it useful? How easy did they find the Translate tool to be?

A total of 31 (67%) students found Moodle and cloud-based learning tools easy and useful (Figure 6.51), thus reflecting a trend similar to previous correlations studied.

Pi_Q14 and Pi_Q15 stacked

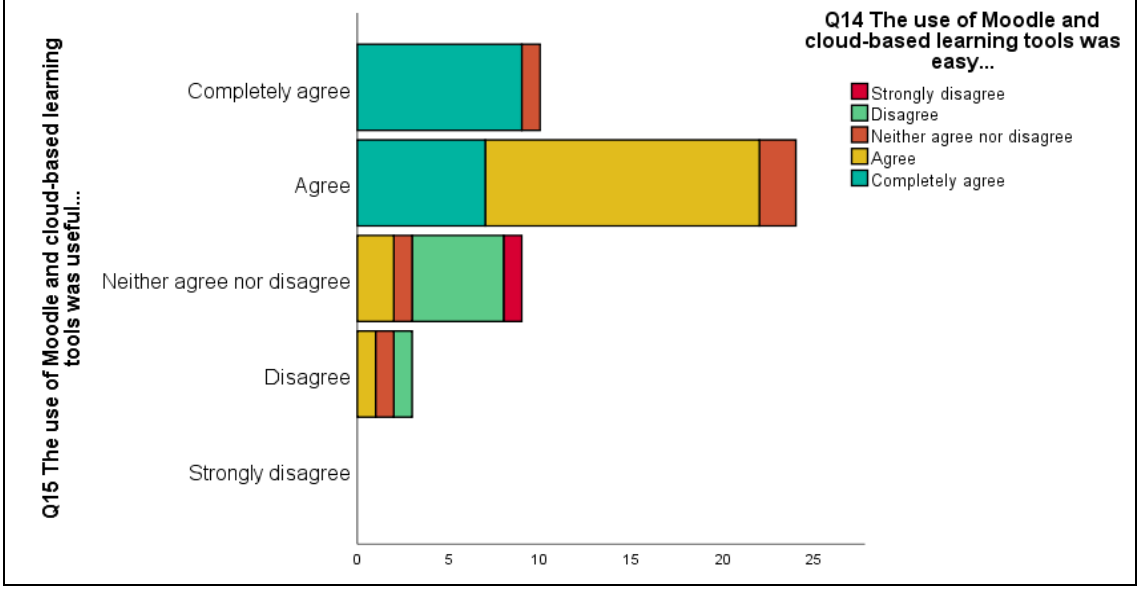

Figure 6.51. Answers to Pi_Q14 and Pi_Q15 stacked

The correlation of Pi_Q14 and Pi_Q22 show that students who found online learning tools easy did not necessarily found the Translate tool equally easy to use. In fact, 18 (39%) students did, whereas 8 (17%) found it difficult or very difficult, and 6 (13%) found it neither difficult nor easy, as presented below:

Pi_Q14 and Pi_Q22 stacked

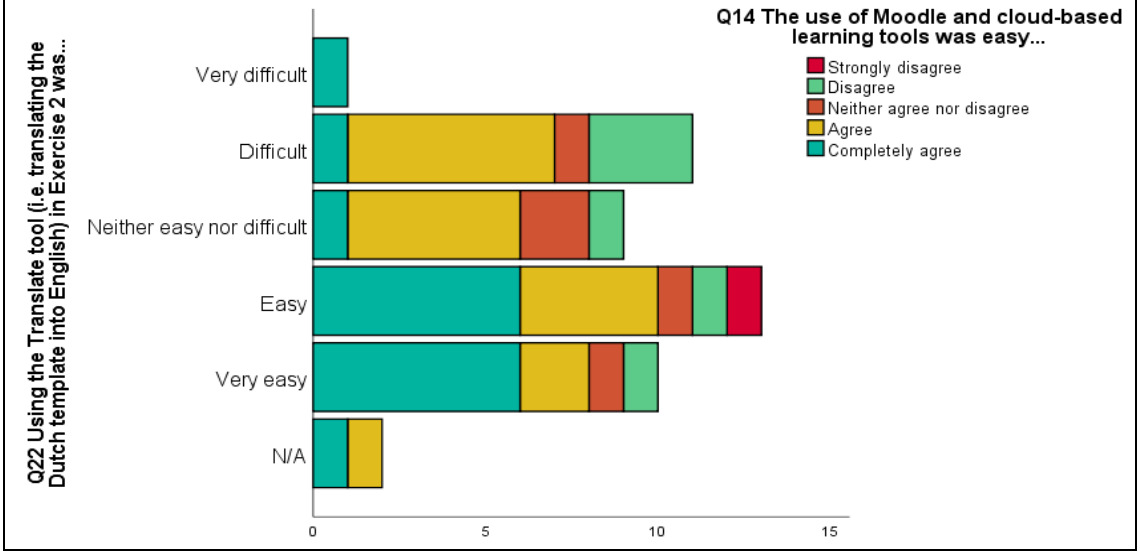

Figure 6.52. Answers to Pi_Q14 and Pi_Q22 stacked

5. Did students who found Moodle useful also (want to) know more subtitling?

A total of 29 (63%) students who found Moodle and cloud-based learning tools useful also reported having gained a better understanding of subtitling:

Pi_Q15 and Pi_Q17 stacked

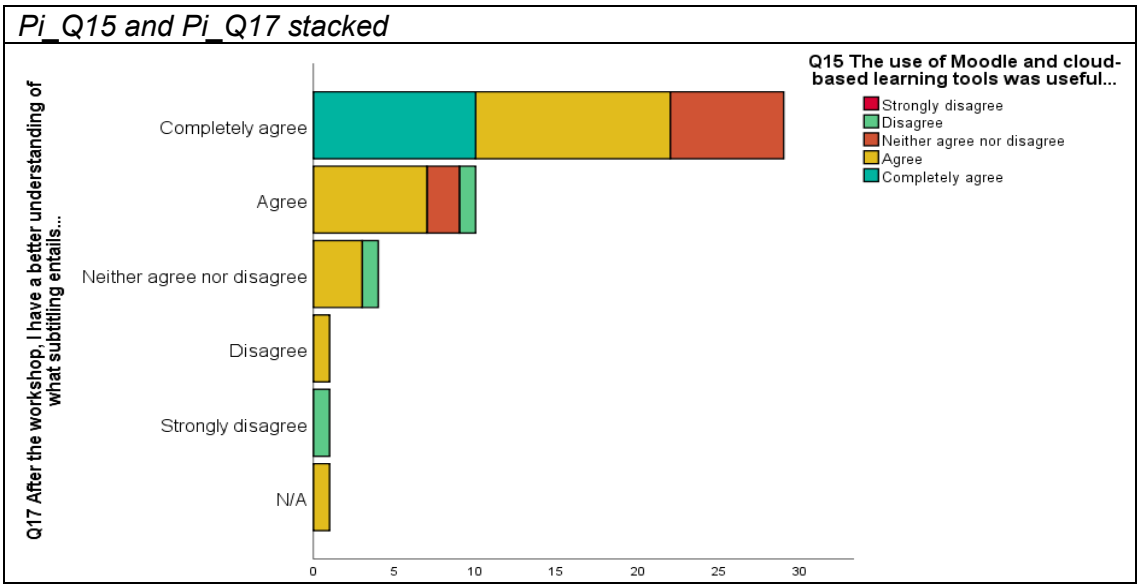

Figure 6.53. Answers to Pi_Q15 and Pi_Q17 stacked

In the same vein, as illustrated in Figure 6.54, 27 (59%) students were also eager to learn more about subtitling, but 6 (13%) were neither interested nor uninterested in learning more.

Pi_Q15 and Pi_Q18 stacked

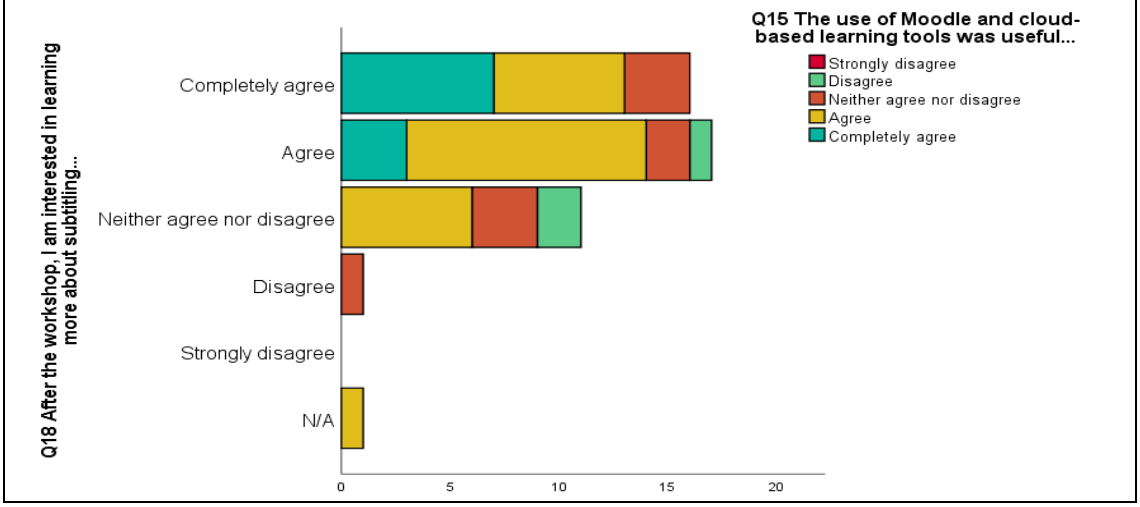

Figure 6.54. Answers to Pi_Q15 and Pi_Q18 stacked

6. Did students who gained a better understanding of subtitling show a greater interest in learning more? Would they like to use OOONA Tools in the future?

In Section 6.2.2, it was already ascertained that students who declared to have gained a better understanding of the discipline were also more likely to continue with their subtitling training (Figure 6.55):

Pi_Q17 and Pi_Q18 stacked

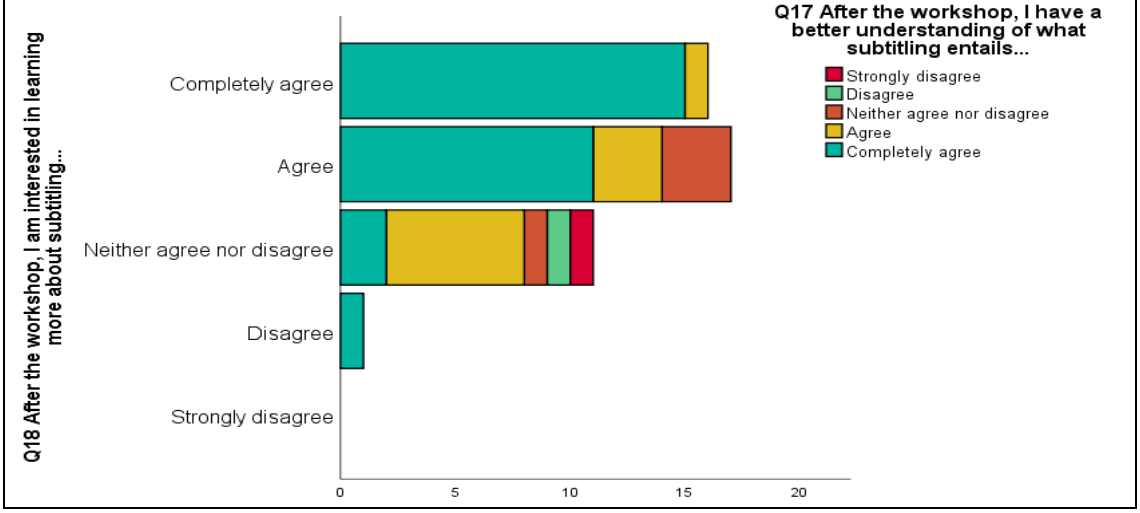

Figure 6.55. Answers to Pi_Q17 and Pi_Q18 stacked

Further to this data, the correlation between Pi_Q17 and Pi_Q24 show that 33 (72%) respondents that considered to have gained a better understanding of subtitling in the workshop also reported their willingness to keep on using OOONA Tools in the future, as illustrated in Figure 6.56:

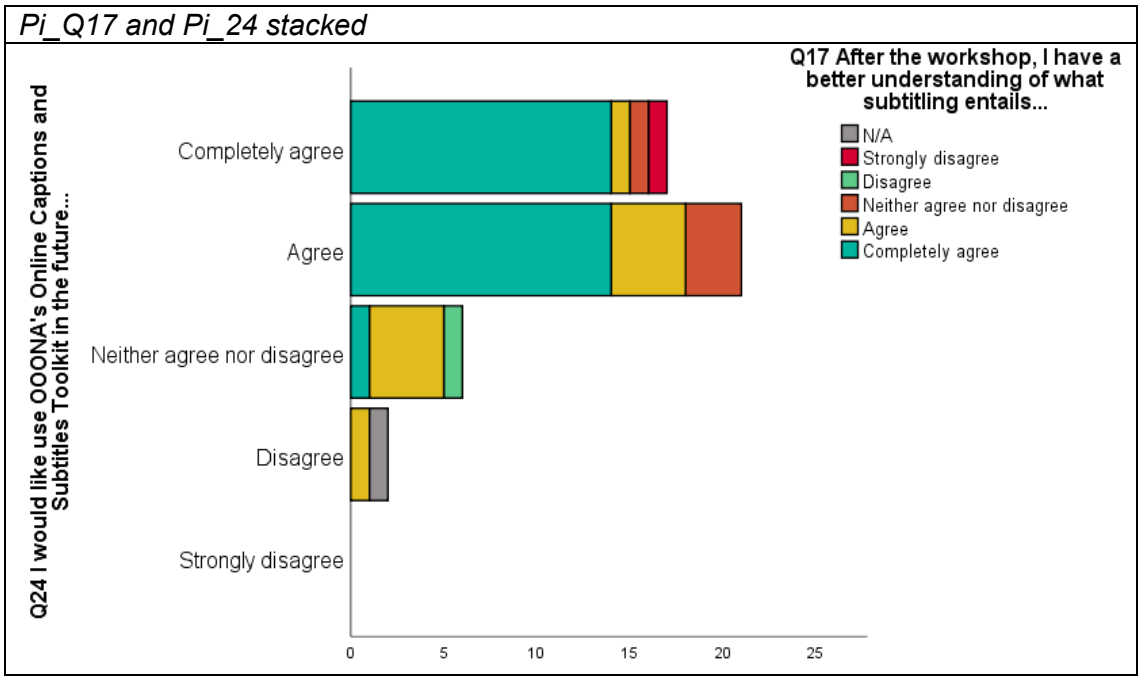

Figure 6.56. Answers to Pi_Q17 and Pi_Q24 stacked

This correlation somehow demonstrates that students are eager to continue using a tool that has allowed them to gain deeper insights into a discipline that has also caught their attention. The affective link established by the student between the tool and their will to continue learning might also prove to be an enthralling field of research in the psychological aspects of translator training.

7. Did students who wanted to learn more about subtitling show a disposition to use OOONA Tools for educational purposes or as a professional tool in the future?

The vast majority of students (42, 91%) claimed that OOONA Tools is a useful tool for training purposes, of which 31 (67% of all respondents) also showed an interest in learning more about subtitling (Figure 6.57):

Pi_Q18 and Pi_Q23 stacked

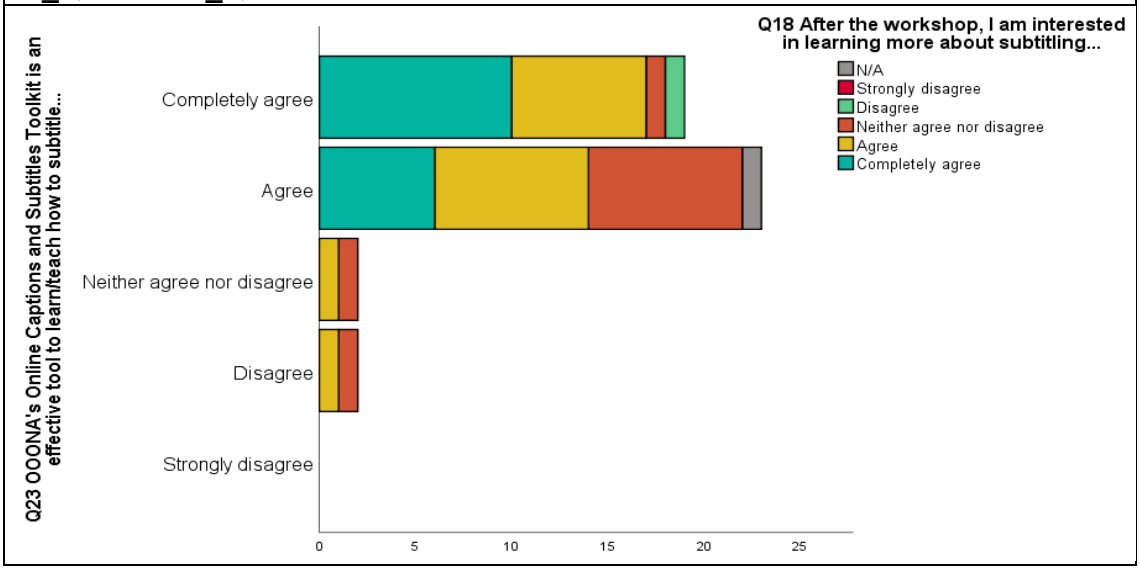

Figure 6.57. Answers to Pi_Q18 and Pi_Q23 stacked

Along with the previous finding, this one confirms that students who were interested in learning more about subtitling not only like the tool but also found it pedagogically sound. Additionally, the same number of students (31, 67%) who expressed their willingness to learn more about subtitling also would like to use OOONA Tools in the future, which reflects that the results of the correlations between Pi_Q17 and Pi_Q24, and Pi_Q18 and Pi_Q24, share great similarity (Figure 6.58):

Pi_Q18 and Pi_Q24 stacked

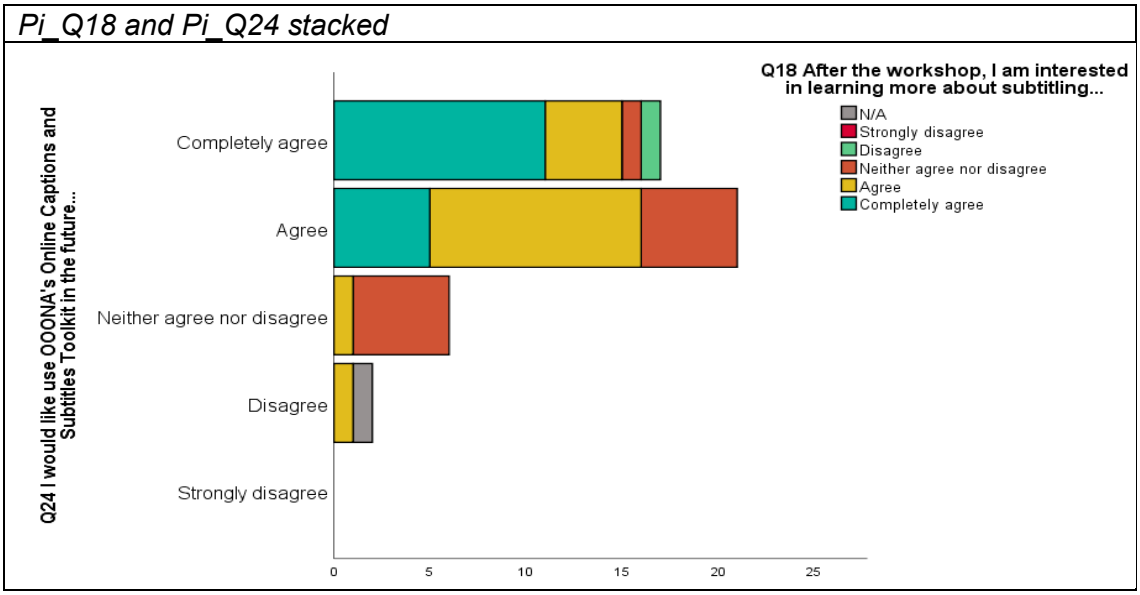

Figure 6.58. Answers to Pi_Q18 and Pi_Q24 stacked

8. Did students who liked OOONA Tools consider it to be an effective tool and would they use it in the future? Did students who considered the tool to be an effective learning and teaching tool express a will to use it as a professional tool in the future?

A total of 13 (28%) students liked OOONA Tools very much, 5 (11%) liked it a little, and found it a very effective tool to learn how to subtitle. Similarly, 16 (35%) students liked it a little, 4 (9%) liked it very much, and found it be an effective tool, too, as shown in Figure 6.59. This adds up to almost 83% of students who both enjoyed using the tool and considered it an effective means to receive subtitling-specific training.

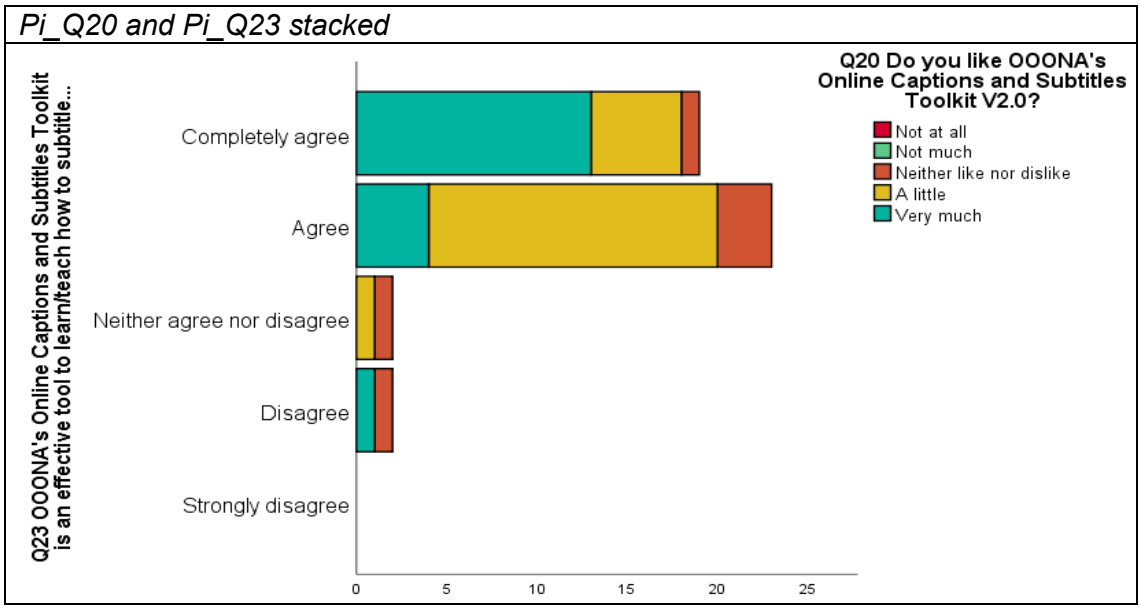

Figure 6.59. Answers to Pi_Q20 and Pi_Q23 stacked

Very similar results were observed when comparing the responses to Pi_Q20 and Pi_Q24 (Section 6.2.4). Yet, a different angle provides further insightful information on this matter: over 78% of students who agreed, or completely agreed, that they would use OOONA Tools in the future also considered it to be an effective learning tool (Figure 6.60), thus confirming that a clear link can be established between the overall degree of satisfaction with the tool and both the probability of future use and its applicability to learning environments.

Pi_Q23 and Pi_Q24 stacked

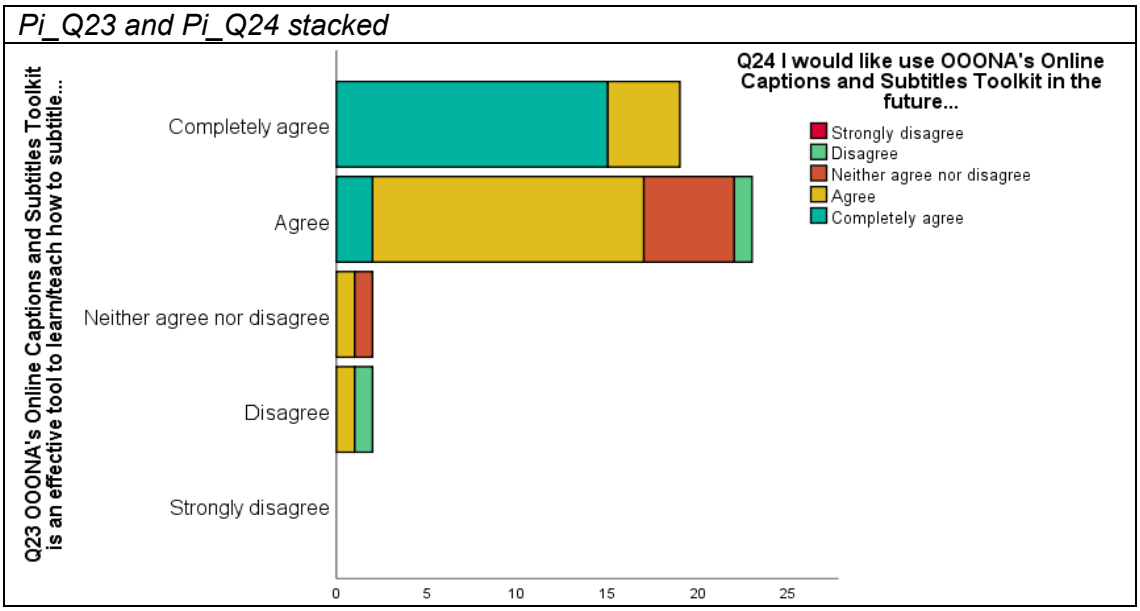

Figure 6.60. Answers to Pi_Q23 and Pi_Q24 stacked

The previous analyses helped to draw conclusions that informed the reshaping of the workshop in terms of content, configuration, format, and teaching methodology. Such changes proved pivotal for the initiation of the subsequent AR cycle, comprised by ten study experiments conducted in different institutions, as each of them was nurtured by these results and adapted to each HE institution and student cohort.

The results have informed the next AR cycle as follows:

- A three-hour workshop does not offer a minimum tuition duration so as to accommodate a comprehensive recount of subtitling theory, text-timing and origination exercises, especially at beginner's level. The longer the experiments, the more pre-subtitling content and complex text-timing exercises they can accommodate. For workshops that are similar to the pilot study, either theory or text timing ought to be curtailed.
- Despite the complexity of the exercises, the students were able to produce template translations that were ultimately used during a cinema festival on the same day. This could be considered a learning outcome in itself and is indicative of the tool's great potential in regards to its ease of use and user-friendliness, which could be further explored in subsequent cycles.

- It would be advisable to enhance cross-referencing between real-life case scenarios and the theory covered in the presentation as well as the one contained in the booklet, which ought to include a best practices section and examples, too. A clearer signposting of the contents covered in the workshop in alignment with the examples included in the booklet might result in smoother practical sessions.
- The students' level of satisfaction with the subtitling tool is not always directly proportional to their perception of how difficult or easy its usage is. Explanations on how to use template creation and translation applications ought to respond to the students' background knowledge on translation and subtitling and be accommodated to their needs. However, it has been ascertained that students who enjoyed the experiment and wanted to learn more about subtitling also reported a higher appreciation of the tool, both in pedagogical terms and for future personal use. It follows that, when purposefully utilised, a learning tool can be a powerful didactic means to enhance interest and stimulate knowledge building.
- The duration of the video clips that students are expected to subtitle has to be proportionally equivalent to the time devoted to the hands-on exercises. It has been established that shorter clips are often prioritised by AVT and modern languages researchers; however, and as shown in the open-ended questions, more advanced students might consider that translating templates of approximately 20 subtitles is not challenging enough. This calls for activities that are more easily customisable, depending on the students' background knowledge.
- Teamwork has been deemed a valid way for students to complete guided exercises. Following a project-based, situated approach, students receive a semi-authentic assignment that comprises of a series of semi-real subtitling tasks (e.g. amending spotting errors, translating templates, and converting and exporting subtitle files), and each team has to build on the workshops contents to work towards the delivery of the final subtitle files. As seen in socioconstructivist theory, peer scaffolding seems to be key in allowing students to acquire and utilise knowledge by means of co-operation.

- It has been noticed that students who enjoyed using OOONA Tools also reported an eagerness to use it professionally in the future. What is more, it has been discovered that there might be a direct link between the use of a tool in the classroom and its subsequent use out of the classroom. Most students remained positive about the pedagogical application of OOONA Tools as well as its future use out of the classroom. This somehow points to the following assumption: when used effectively in the classroom, a tool that meets a minimum degree of satisfaction among students may also become the students' preferred professional tool once their training has been completed.

Following the results of this pilot study, as well as the changes they triggered in the design of the study experiments that followed, Section 6.3 explores the quantitative and qualitative results of a new AR cycle comprised by a set of ten experiments undertaken at different European HE institutions (Section 5.2.2.2). It must be noted that the tool experienced several changes following the feedback provided to the industry partners, which took the form of email communications, virtual meetings, and written documents and reports. Consequently, the tool's new interface, along with its innovative features, prompted the updating of the booklet (e.g. shortcuts, screenshots, menu options) and legitimatised the nature of this AR study.

6.3. Cycle 3: Study Experiments with Learners

The ten subsequent study experiments carried out across different European universities in the form of hands-on subtitling workshops had the objective to gauge the students' opinion on the use of OOONA Tools. These sessions undoubtedly built on, and were informed by, the previous AR cycles (Section 6.1 and Section 6.2). The following statistical analyses of the qualitative and quantitative data shed light on the respondents' preferences and allow to draw several action points for putting forward a model of online AVT education. The results presented in the below sections are significant inasmuch as they confirm

that this type of experiment was perceived as relevant, interesting, and adequate to learn how to subtitle on the cloud.

To analyse the t-distribution, the Kolmogorov-Smirnov test (N=232) was performed on non-descriptive questions using SPSS. This test revealed that the responses to all questions did not have a normal distribution as the p-values were all lower than 0.05.

6.3.1. Personal Information, Education and Experience

In a similar vein to what was done in the case of the previous experiments, the first set of questions aimed to gather basic descriptive information to profile the experiments' subjects. The first set of questions, Q1 to Q8, helped to describe the respondents (N=232), all of whom attended the subtitling workshop presented in Section 5.2.2.2. Table 6.9 contains absolute and relative frequencies for the descriptive questions, which will be further discussed in the following paragraphs.

QUESTION	VALUES	FREQUENCY	PERCENT	CUMULATIVE PERCENT
Q1	Prefer not to say	6	2.6	2.6
	Male	51	22	24.6
	Female	175	75.4	100
Q2	17–20	100	43.1	43.1
	21–40	121	52.2	95.3
	41–60	11	4.7	100
Q3a	Spain	102	44	44
	UK	70	30.2	74.1
	Italy	27	11.6	85.8
	The Netherlands	11	4.7	90.5
	Latvia	7	3	93.5
	Other	15	6.5	100
Q3b	Spanish (including bilinguals)	101	43.7	43.7
	English (including bilinguals)	47	20.1	63.8
	Italian	32	13.8	77.6
	French	10	4.3	81.9
	Chinese	9	3.9	85.8
	Latvian	7	3	88.8
	Other	26	11.2	100
	Student	205	88.4	88.4

Q4	Translator	17	7.3	95.7
	Teacher	6	2.6	98.3
	Other	4	1.7	100
Q5	Primary/Secondary	79	34.1	34.1
	Undergraduate	125	53.9	87.9
	Postgraduate	21	9.1	97
	PhD	7	3	100
Q6	Yes, at university	116	50	50
	Yes, privately	2	0.9	50.9
	No, but I am self-trained	35	15.1	65.9
	No, but I have professional experience	5	2.2	68.1
	No, not at all	74	31.9	100
Q7	Yes	105	45.3	45.3
	No	127	54.7	100
Q8	Yes, main professional activity	6	2.6	2.6
	Yes, but not main professional activity	14	6	8.6
	No, but have professional experience	8	3.4	12.1
	No, not much	204	87.9	100

Table 6.9. Frequencies and percentage values of descriptive data Q1 to Q8

The vast majority of respondents were women (175, 75%), with 51 (22%) men and 6 (3%) individuals who preferred not to say. Over half of respondents were between 21 and 40 years of age (121, 52%), while 100 (43%) were between 17 and 20 and 11 (5%) between 41 and 60, as Figure 6.61 illustrates:

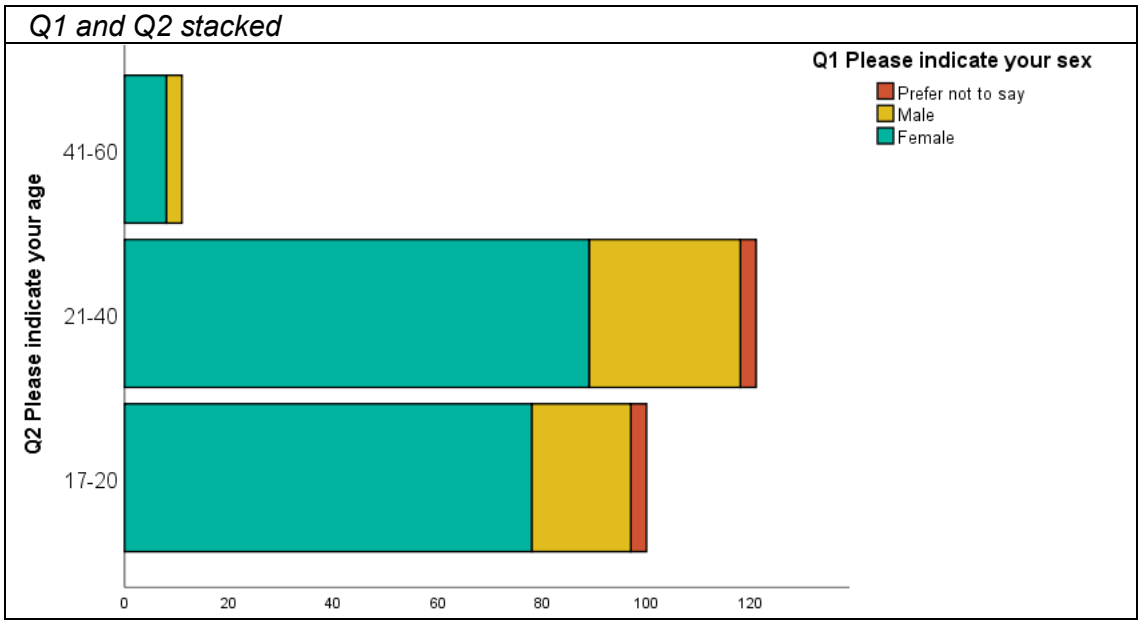

Figure 6.61. Answers to Q1 and Q2 stacked

Female respondents aged 21–40 constituted the largest group (89, 38%), followed by the ones aged 17–20 (78, 34%). Most male respondents were aged 21–40 (29, 13%) and a smaller proportion were 17–20 (19, 8%). Having said that, as the number of female respondents was considerably higher, it might be complex to establish whether the sex factor could have altered any of the results that follow.

Contrary to the previous AR cycle, the respondents of these surveys came from a wider variety of countries, including Spain (102, 44%), the United Kingdom (70, 30%), Italy (27, 12%), the Netherlands (11, 5%), and Latvia (7, 3%), where the experiments were carried out. Several respondents (15, 6%) came from countries other than the ones listed above, including China (4), Poland (3), France (2), Germany (1), Estonia (1), Switzerland (1), Portugal (1), the United States of America (1), and Slovakia (1), as displayed in Figure 6.62.

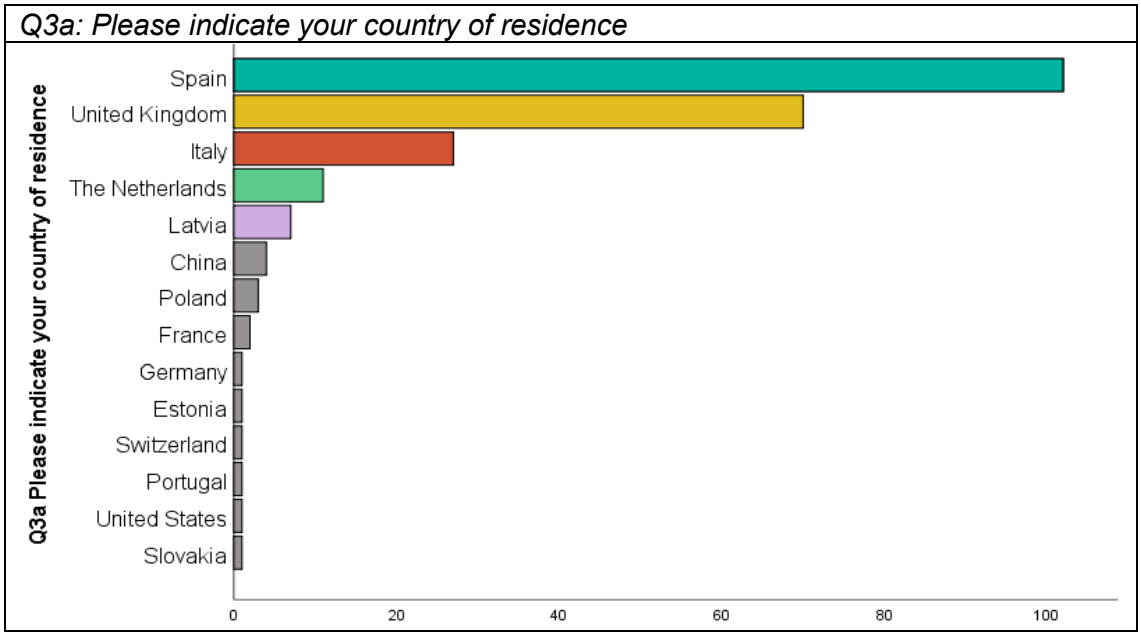

Figure 6.62. Answers to Q3

Participants were also asked to indicate their native language. Despite the fact that the workshops were carried out solely at European HE institutions, the data points to a vast array of different native languages. Spanish and English were the most widely spoken languages, including many cases of bilingualism, like, for instance, speakers of Catalan (15) as well as second and third generation UK-based students and workers (7). Respondents with Italian (32), French (10),

Chinese (9), and Latvian (7) also amount to a considerable number of experiment attendees.

Respondents came from a vast array of educational and professional backgrounds, but, for the purposes of this study, they have been classified under three main categories: students (205, 88%), translators (17, 7%), and teachers (6, 3%). The remaining 4 (2%) respondents are a video editor, a couple of filmmakers, and a graduate from a business school whose current role did not match any of the aforementioned options (Figure 6.63):

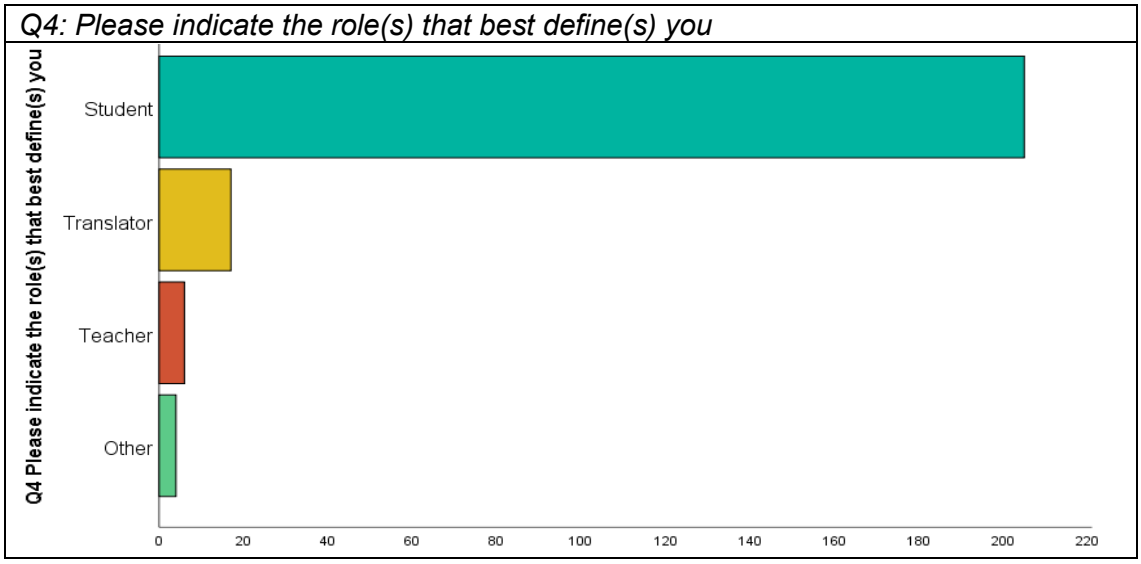

Figure 6.63. Answers to Q4

In terms of education, as shown in Figure 6.64, most respondents (125, 54%) had already completed, or were about to complete, an undergraduate course of study at a HE institution, whereas 79 (34%) were still doing an undergraduate course and had thus completed primary, secondary education, and/or short tertiary education. A minority of participants had completed postgraduate (21, 9%) or doctoral studies (7, 3%).

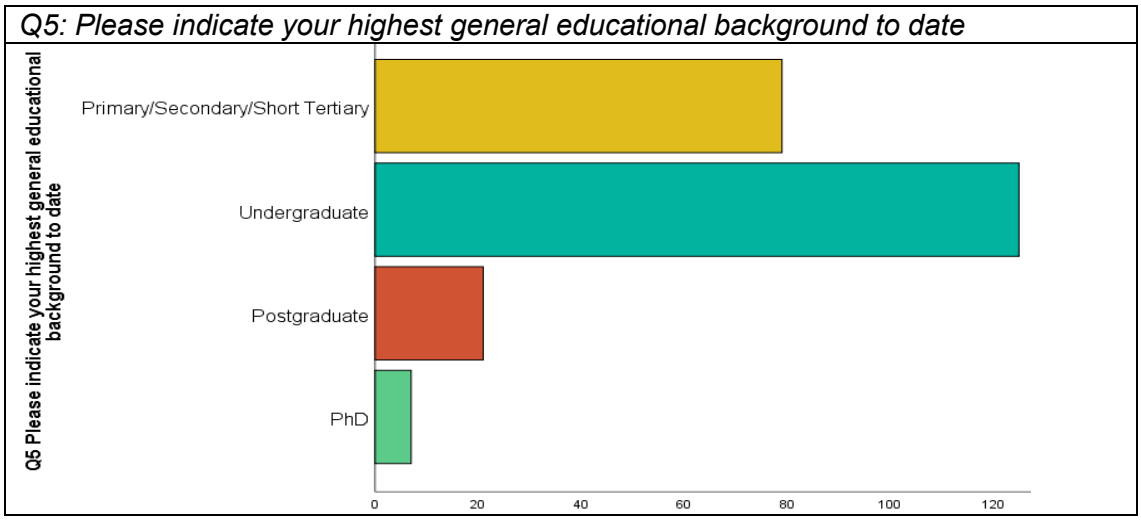

Figure 6.64. Answers to Q5

Looking at the data from Q6 (Figure 6.65), it was clear that half of the respondents (116, 50%) had a basic understanding of subtitling as they claimed to have undertaken subtitling-specific training at university. On the other hand, 74 (32%) respondents had not had any previous subtitling training, 35 (15%) had taken a private subtitling course, and 5 (2%) had professional experience that compensated for the lack of official training.

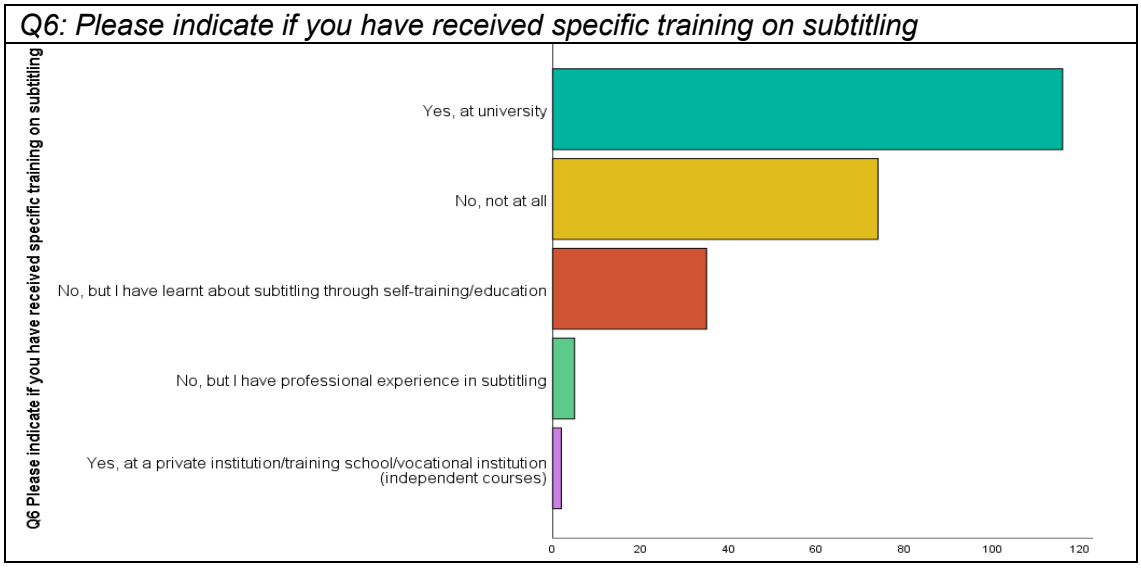

Figure 6.65. Answers to Q6

As previously mentioned, the majority of students claimed to have received subtitling-related tuition as part of their curricular studies at universities but, when questioned about the issue (Figure 6.66), it became clear that most of them (127, 55%) had not taken an AVT- or subtitling-specific course:

Q7: Please indicate if you have ever done an audiovisual translation-related, or more specifically subtitling-related, course on subtitling

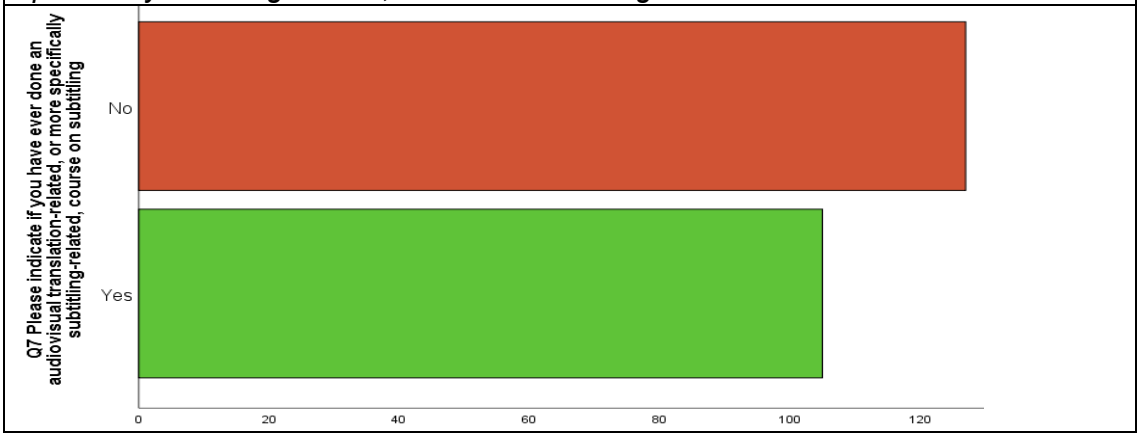

Figure 6.66. Answers to Q7

The cultural and regional differences of the term ‘course’ might as well have caused this numerical disparity, as it might be understood as synonymous with ‘module’ often in American English (i.e. part of a wider course of study), or as a ‘programme’ often in British English (i.e. the whole of the course of study itself, like a master’s degree or a professional course, for example). Most respondents did not include the applications or tools they had previously used in class, except for experiment group no. 6, comprised mainly of postgraduate students who were already familiar with Wincaps Q4 as they had previously studied it in class, and a couple of other respondents who also mentioned the latter as well as Subtitle Edit. Be it as it may, it can be concluded that many of the experiment subjects already had a basic notion of subtitling since 105 (45%) of them had already undertaken some sort of training, irrespective of its nature and duration.

Last but not least, most respondents (204, 88%) answered that they did not work as translators and had from little to no experience at all in translating. A few respondents (8, 3%) did not exclusively work as translators but had professional experience, while 6 (3%) of them considered translation to be their main professional activity, and 14 (6%) did translation work on the side-lines of something else. All in all, as seen in Figure 6.67, the vast majority of respondents did not work as translators and did not have meaningful professional experience:

Figure 6.67. Answers to Q8

It can be concluded that some students struggled to understand the foundations of the experiment and several even misinterpreted some of the questions, especially concerning previous training received in subtitling and AVT.

6.3.2. Use of Cloud-based Tools

Workshop attendees were systematically asked whether they knew what cloud-based subtitling systems were and whether they had ever used any before. To better understand the respondents' awareness of and engagement with cloud-based subtitling tools, several questions of various natures were posed (Table 6.10)- The open-ended questions, Q14 and Q16, that will be analysed below, aimed to complement the responses from Q9 to Q15.

QUESTION	VALUES	FREQUENCY	PERCENT	CUMULATIVE PERCENT
Q9	Yes	19	8.2	8.2
	No	213	91.8	100
Q10	Completely dissatisfied	0	0	0
	Dissatisfied	2	9	0.9
	Neither satisfied nor dissatisfied	5	2.2	3.1
	Satisfied	9	3.9	7
	Completely satisfied	3	1.3	8.2

	N/A	213	91.8	91.8
Q11	Yes	190	81.9	81.9
	No	25	10.8	92.7
	Other	17	7.3	100
Q12	Yes	23	9.9	9.9
	No	209	90.1	100
Q13	Completely dissatisfied	3	1.3	1.3
	Dissatisfied	6	2.6	3.9
	Neither satisfied nor dissatisfied	33	14.2	18.1
	Satisfied	111	47.8	65.9
	Completely satisfied	67	28.9	94.8
	N/A	12	5.2	100
Q15	Yes	210	90.5	90.5
	Maybe	20	8.6	99.1
	No	2	0.9	100

Table 6.10. Frequencies and percentage values of Q9 to Q13 and Q15

As illustrated by Figure 6.68, a clear majority of respondents (213, 92%) had not used any cloud-based translation tools before attending the experiments, which means that only 19 (8%) of them were familiar with such tools and had used them prior to filling in these surveys. This datum matches the assumptions made in Section 3.4 and reflects a common trend: HE institutions are now timidly incorporating cloud subtitling tools into the curriculum, but they were almost non-existent in HE back when the experiments took place.

Q9: Please indicate if you had used cloud-based translation platforms before attending this course

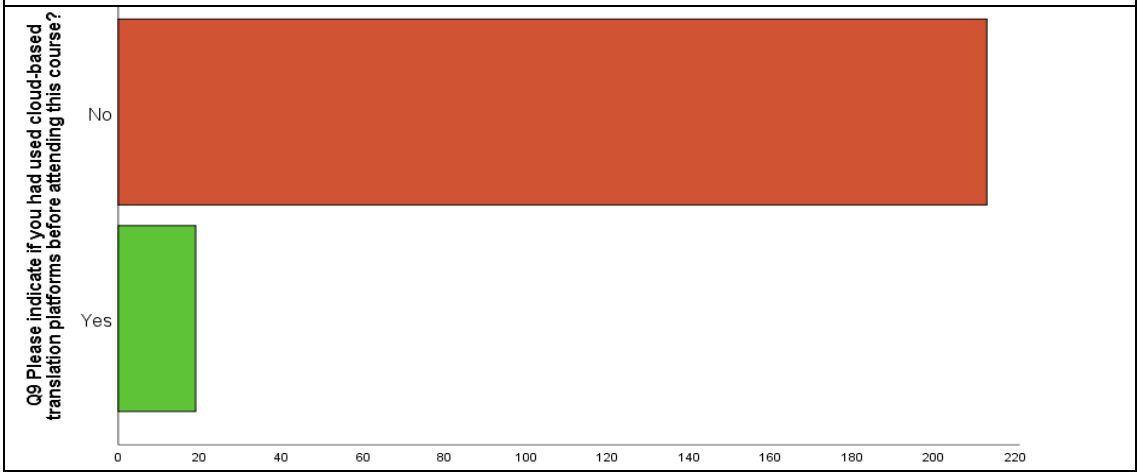

Figure 6.68. Answers to Q9

It seems only logic that the same number of respondents that claimed to not have used cloud-based tools in the past (213, 92%) would, consequently, leave Q10 unanswered, as it concerned their level of satisfaction with such tools (Figure 6.69). For this reason, it is virtually impossible to draw significant conclusions on the respondents' overall satisfaction with cloud-based translation tools' performance.

Q10: If you have used cloud-based translation platforms before, please indicate your satisfaction with their performance

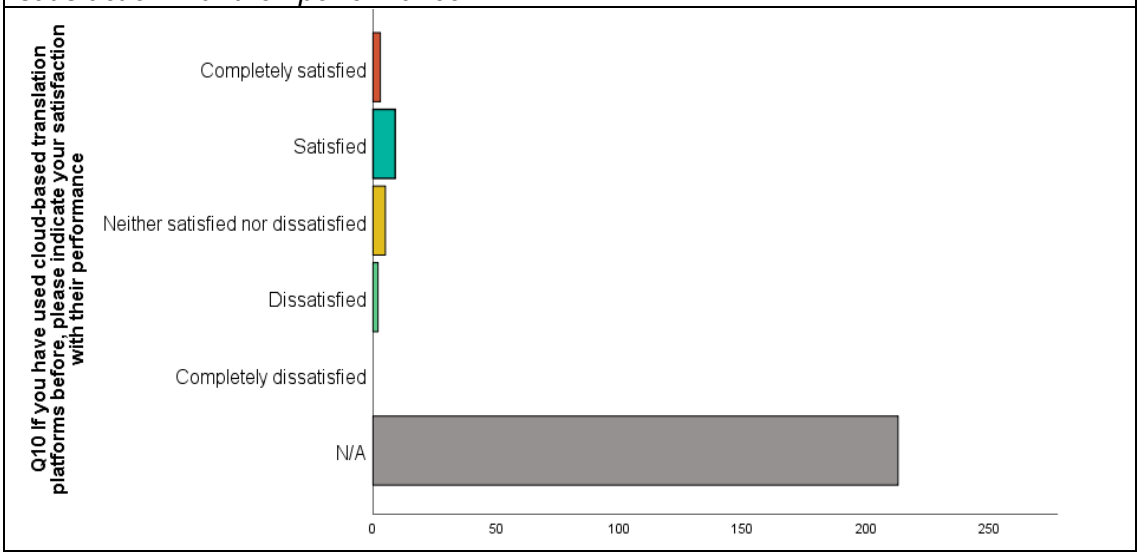

Figure 6.69. Answers to Q10

What is interesting, though, is the fact that, as shown in Figure 6.70, only 25 (11%) respondents declared that they would not use cloud-based translation tools after having attended the workshop, while 190 (82%) would use them, and 17 (7%) chose 'Other', some of whom could have chosen either two previous options.

Q11: If you have never used cloud-based translation platforms before, please indicate if you would consider using any in the future

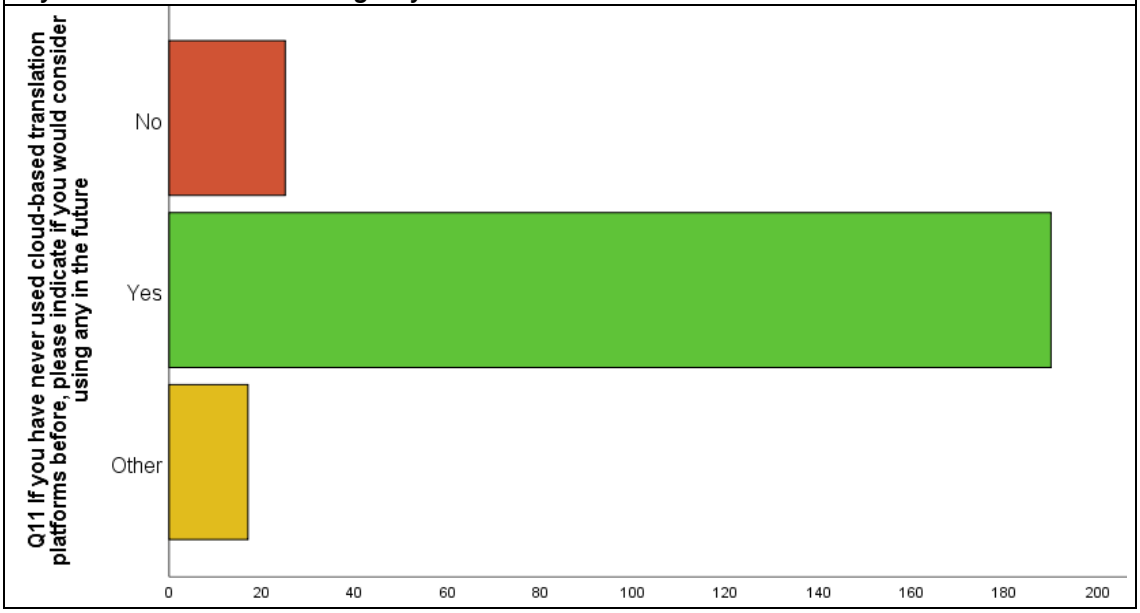

Figure 6.70. Answers to Q11

Among those who selected 'Other, some typed in "Maybe" or even "N/A", but many also left it blank. One respondent wrote "If I must", whereas another one wrote:

> *Subtitling probably would not be my profession in the future, so I doubt I would ever use any subtitling software in the future. But it was eye opening to attend this workshop, since I have a [sic] interest in technology in general.*

As illustrated in Figure 6.71, most of the respondents (209, 90%) were not aware of OOONA Tools. With the benefit of hindsight, it would have been advisable to ask the 23 (10%) participants who knew OOONA Tools whether they had used it in the past or whether they had just got wind of it in either academic or professional circles; however, this was not included in the questionnaire and remains to be ascertained.

Q12: Please indicate if, before attending this course, you already knew OOONA's Online Captions and Subtitles Toolkit

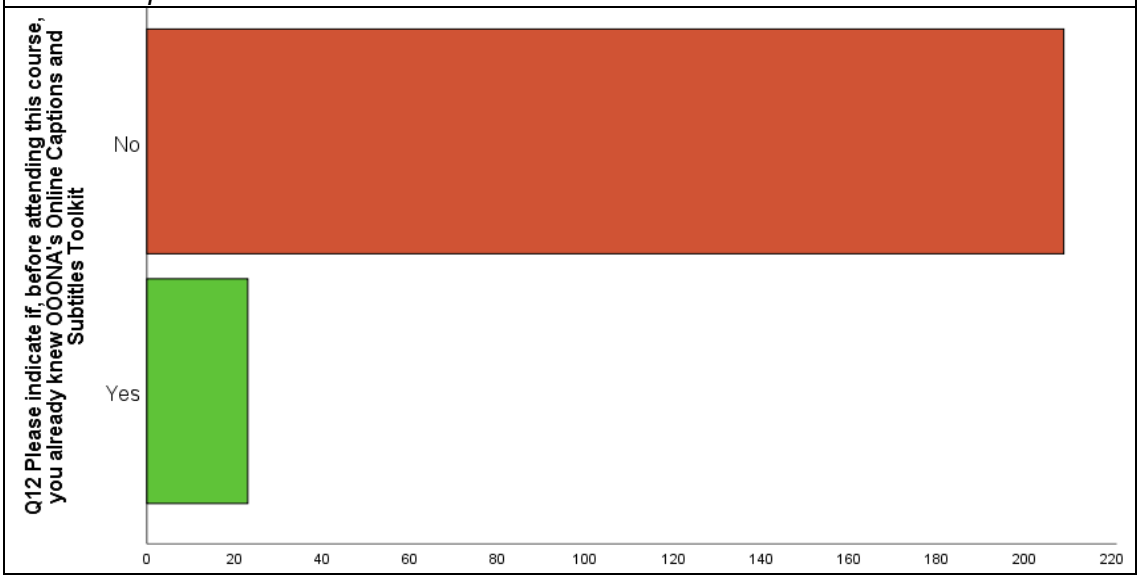

Figure 6.71. Answers to Q12

The overall satisfaction level reported by respondents is shown in Figure 6.72 and can be regarded as considerably high since only 3 (1%) manifested being completely dissatisfied or dissatisfied (6, 3%). On the contrary, 67 (30%) claimed to be completely satisfied or satisfied (111, 48%); whereas 33 (14%) were neither satisfied nor dissatisfied. These results are indeed very similar to the ones analysed in Section 6.3.2, where it was established that all pilot study participants liked OOONA Tools.

Q13: Please indicate your level of satisfaction with OOONA's Online Captions and Subtitles Toolkit

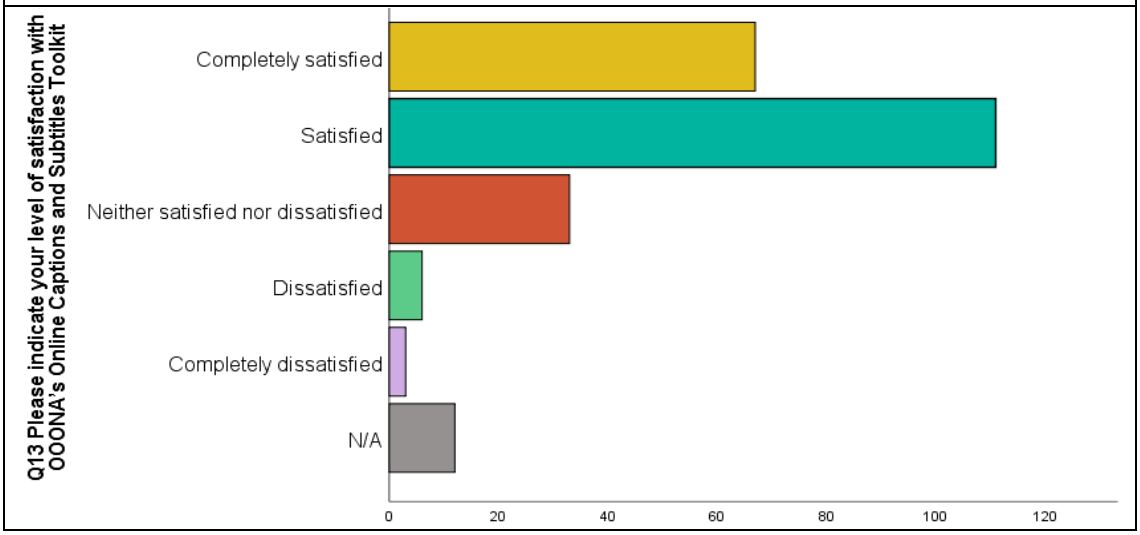

Figure 6.72. Answers to Q13

Figure 6.73 below depicts some of the most relevant information of this section as it shows that the vast majority of respondents (210, 91%) consider OOONA Tools to be a powerful tool and resource for the learning/teaching of translation and subtitling. Only 2 (1%) respondents opposed this idea, and 20 (9%) were not sure whether it was indeed a useful pedagogical tool.

Q15: Please indicate if you think that OOONA's Online Captions and Subtitles Toolkit is useful for translation/subtitling training purposes

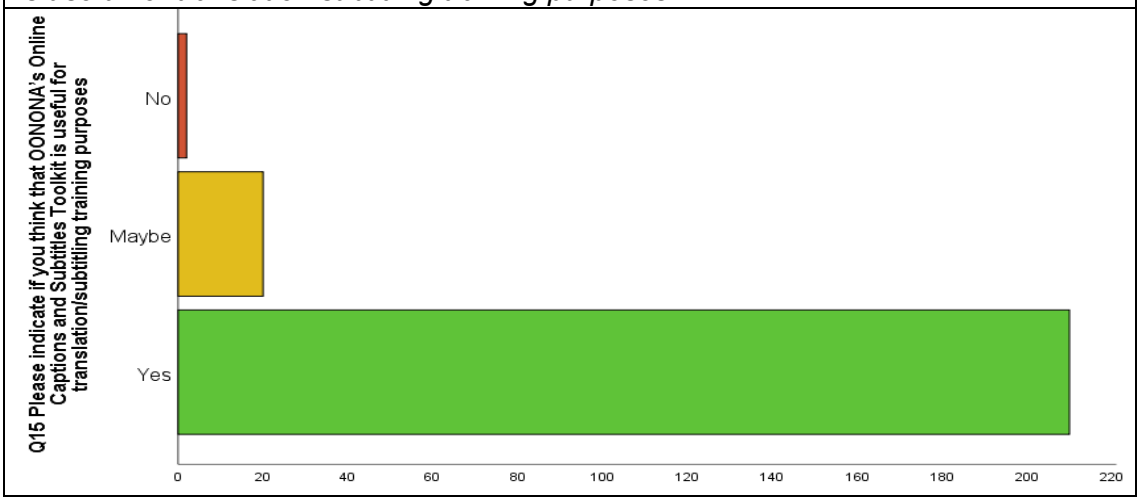

Figure 6.73. Answers to Q15

The fact that such a high number of respondents vouched for the pedagogical usefulness of OOONA Tools in the translation and subtitling classroom is exemplary of the didactic potential of professional cloud-based subtitling tools and a true stimulus for the development of an online model for AVT education.

Q14 ("Please give your opinion about the Online Captions and Subtitles Toolkit") and Q16 ("For the sake of completeness, please use this section to include your opinion on cloud-based subtitling and translator training") were open ended and aimed to gauge the respondents' perception of OOONA Tools and other cloud-based tools for AVT training. The responses offer a wider, and more comprehensive and detailed, inspection of the respondents' opinions.

The data contained in Table 6.11 shed light on the respondents' perception of the tool as well as its applications to professional subtitling and AVT training:

Q14: Please give your opinion about the Online Captions and Subtitles Toolkit			
WORDS	**COUNT**	**PERCENTAGE**	**SIMILAR WORDS**
use	236	8.98	enjoyable, enjoyed, exercises, functional, functionalities, functions, practical, practice, purposes, role, usage, use, used, useful, uses, using
easy	97	3.74	comfortable, easily, easy, light, loose, simple, slow, slowly
subtitling	82	3.34	caption, captions, subtitle, subtitler, subtitlers, subtitles, subtitling
translation	80	3.00	convert, conversion, reading, translate, translating, translation, translations, translator, translators, translators', understand, version
think	76	2.61	believe, consider, considering, mean, means, supposed, think, thinking, thought
work	85	2.61	acts, exercises, formed, functional, functionalities, functions, going, make, makes, making, play, process, running, runs, solve, studies, work, worked, working, workplace, works
good	90	2.58	effective, effectiveness, expert, full, good, just, near, practical, practice, right, safe, security, serious, skill, skills, sound, well
tool	44	1.79	tool, tolos
really	43	1.58	actual, actually, real, really, truly
cloud	31	1.26	Cloud
based	36	1.24	based, basis, found, home, mean, means
training	37	1.14	check, develop, developed, developed, education, take, taking, train, training
learn	46	1.09	check, instructions, know, knowing, knowledge, learn, learned, learning, reading, see, studies, take, taking, teach, watch
helpful	27	1.07	facilitated, help, helpful, helping, helped, helps, support
make	56	1.00	clear, create, creating, fix, formed, get, gets, getting, give, gives, giving, make, makes, making, reach, realizing, take, taking
Q16: For the sake of completeness, please use this section to include your opinion on cloud-based subtitling and translator training			
WORDS	**COUNT**	**PERCENTAGE**	**SIMILAR WORDS**
useful	87	5.98	enjoyable, enjoyed, exercises, functional, functions, practical, practice, purposes, role, usage, use, used, useful, uses, using
translation	53	3.97	translate, translating, translation, translations, translator, translators, translators', version
subtitling	52	3.94	subtitle, subtitler, subtitlers, subtitles, subtitling
think	54	3.45	believe, consider, considering, means, supposed, think, thinking, thought
good	47	2.69	effective, good, just, near, practical, practice, right, safe, security, serious, skill, skills, well
work	42	2.39	acts, exercises, formed, functional, functions, going, make, makes, making, process, runs,

			solve, studies, work, worked, working, workplace, works
based	29	2.14	based, basis, found, means
cloud	27	2.04	Cloud
training	30	1.94	develop, developed, take, taking, train, training
tool	24	1.82	tool, tools
really	24	1.56	actual, actually, real, really, truly
learn	30	1.55	know, knowledge, learn, learned, learning, see, studies, take, taking, teach, watch
future	17	1.29	Future
interesting	17	1.29	interested, interesting
helpful	17	1.25	help, helpful, helped, helps, support
easy	18	1.23	easily, easy, loose, simple, slowly
experience	21	1.02	experience, experienced, experiences, feel, get, know, receiving, see
way	14	1.00	means, way

Table 6.11. Word frequency results for qualitative terms in Q14 and Q16

Firstly, the word frequency analysis pointed to a wide abundance of terms related to 'use' and 'useful' (including 'practical', 'functional', etc.) to discuss both OOONA Tools and its professional and pedagogical applications (236 cases in Q14 and 87 cases in Q16). Terms like 'ease' or 'easy' also show up rather frequently, especially in Q14 (97 cases), as does 'good' (90 cases in Q14 and 47 cases in Q16). Other respondents also wrote terms like 'interesting' (17 cases in Q16) and 'helpful' (27 cases in Q14 and 17 cases in Q16) to refer to the 'training' (37 cases in Q14 and 30 cases in Q16) of subtitling in the 'cloud' (31 cases in Q14 and 27 cases in Q16).

Following the coding of the responses, the below five categories (and corresponding sub-categories) were created, as illustrated in Table 6.12:

NODES FOR ANSWERS TO OPEN-ENDED QUESTIONS		
CATEGORIES	**SUB-CATEGORIES**	**REFERENCES[19]**
DIDACTIC APPLICATIONS	Fun exercise or useful practice	12
	Should be taught in translation-subtitling courses	17
	Useful for beginners or inexperienced users	20
EASE OF USE	Difficult to understand or use	18
	Easy to understand or use (quick to learn)	103

[19] Responses from both Q14 and Q16 have been included.

PERFORMANCE SATISFACTION	Needs to be explained clearly to understand	3
	Dissatisfied (bad performance or useless)	6
	Satisfied (good performance or useful)	127
PROFESSIONAL APPLICATIONS AND USE	Affordable purchase	2
	Unaffordable purchase	7
	Industry standards (suitable)	9
	Potential and future use	9
	Insufficient free trial	4
CONFIGURATION AND CLOUD RESOURCES	Applications should be staggered in one interface only	2
	Cloud environment is convenient	20
	Cloud environment is inconvenient	4
	Complete tool (includes many features, is well developed)	14
	Convert tool is useful	1
	Faults, glitches or bugs (tool- or web-related)	25
	Features are missing and could be incorporated	2
	Incomplete tool compared to other tools	1
	User-friendly, intuitive or appealing interface	26

Table 6.12. Categories and sub-categories of qualitative responses (nodes)

The first category refers to the respondents' level of satisfaction (129 reference cases) with the overall performance and usefulness of the tool. Out of the 129 references, 127 were patently positive, indicating that the respondents were overall satisfied with the look, performance, efficiency, and usefulness of OOONA Tools; while only 6 references were negative. Among the tool's detractors, some reported that it implied too much extra work, it was slow, or there was a lack of technical completeness. Contrarily, positive responses pointed to the efficiency, convenience, comprehensiveness, practicality, and usefulness of the tool.

The second category focuses on the tool's ease of use and user-friendliness (124 reference cases), and reports on whether respondents found OOONA Tools to be easy or difficult to understand and use. The vast majority of respondents' answers (103) included references to the easiness and quickness that characterise the use of OOONA Tools, and some of them also highlighted the intuitiveness, user-friendliness and step-by-step guidance offered by the tool. The remaining 21 references were more critical and suggested that, due to the tool's complexity, previous and exhaustive training is necessary to understand the tool, but also that navigation is far from ideal and the interface could lead to confusion at times.

The third category is the tool's configuration and resources (95 reference cases), which includes aspects like the convenience or inconvenience of cloud resources, the existence or absence of certain features, and the completeness or incompleteness of the tool as opposed to desktop-based software. The information provided by respondents is very useful to gauge their perception of cloud-based systems such as OOONA Tools. For instance, there were 20 references to the benefits supplied by cloud systems, such as their portability and flexibility on account of their leaner and remote access, as well as the fact that lack of local storage is no longer an issue and the possibility of working across compatible devices with instant access to automatically saved work. Detractors of cloud systems pointed to the potential problems caused by weak broadband and loss of network. There were two different references to the fact that the applications could be more easily managed if they were staggered within the same interface; that is, if the spotting and originating applications could be merged into the same application. For one respondent, such separation meant that "the process is more fragmented, but this is inconvenient for a person who wants control on the whole project". Yet, several respondents went in the opposite direction as they preferred to access applications separately to be able to clearly distinguish between different subtitling tasks.

There were over 14 references to the fact that OOONA Tools is handy, well developed, detailed and complete inasmuch as it offers many different options as well as useful features such as warnings and reading speed displays along with a very powerful conversion tool. In addition, there are 26 references to the fact that the interface is user-friendly, intuitive and appealing, with most features displayed in a visually attractive way as reported by a respondent: "convenient functions are there as icons on screen. Also being able to drag the box to fix the duration of a title is very welcome." On the downside, a respondent advised that auto-suggest features, including MT and TM engines, would be useful add-ons, and 25 references focused on faults, glitches, and bugs: slower performance of the machine (4), disparity of shortcuts between Macintosh and Windows machines (4), lack of audio wave (3), browser's incompatibilities and poor performance (2), and unstable movement between subtitles (2). Some respondents expressed a reluctance to use a specific browser only (i.e. Google

Chrome), and others reported having spotted glitches and experienced malfunction repeatedly.

The fourth category is the tool's professional applications and uses (31 reference cases), which included comments related to subscription prices, industry conventions, and potential and future use of the tool. OOONA Tools' subscriptions were considered affordable by 2 respondents, whereas 7 considered it to be expensive and far from ideal from a monetary point of view. One of them also highlighted that some users, including HE institutions, prefer licenses that do not expire after a one-off purchase. Another 4 references regarded the limitations of the free trial, one of which highlighted that the duration was scarce whereas another suggested that such a tool should be free for learning purposes. There were 9 references foregrounding that cloud subtitling is widely used in the industry nowadays, thus acknowledging that tools like OOONA Tools reflect the professional reality rather closely. In this respect, several respondents opined that cloud applications are "the future of the industry", "a trend in the future", and, therefore, a necessary skill to have. Another 9 references were retrieved in which the respondents explicitly said that they would consider using OOONA Tools in the future.

Finally, the fifth category makes reference to the tool's didactic applications and uses (49 reference cases), which included the adoption of cloud subtitling in translator training programmes, the usefulness of the tool for translators-to-be and students, and the ludic aspects of cloud subtitling tasks. There were 17 references to the urgent need of integrating cloud subtitling specifically, and cloud-based translation tools in general, into existing translation courses. Some respondents mentioned that such tools help to hone specific skills, whereas some others believed that having a solid command of them would increase their employability as their potential use in the industry is, apparently, immeasurable. Many respondents commented that OOONA Tools' ease of use and intuitiveness made it a helpful resource for trainee translators, non-experts, amateurs, and beginners altogether. The following statements are examples of the above and testify to the respondents' overall satisfaction with the pedagogical potential of the tool:

It certainly is a useful tool for training and taking the first steps into subtitling and audiovisual translation in general.

I think cloud-based subtitling is really useful and I will surely use it again in the future to train myself.

I think cloud-based subtitling is a great tool for those who have just started working with subtitles and want to make the most out of it.

As previously mentioned in references pertaining to the first category, some students found both the experience and the tool confusing, but others argued that the instructions provided made the whole experiment easier to follow. Most claims were made by participants from experiments 3 and 4, comprising of undergraduate students of modern languages, who were given a briefer software introduction on account of time constraints. Independent learning was therefore key for taking part in the experiments, and students were provided with detailed instructions and step-by-step exercises to complete the activities from home. Some respondents claimed that further guidance might have been needed and one wrote:

I found it very difficult to use, especially with all the file conversions. However, this may just be my own fault. However, it does seem like it could be a useful too once you get used to it.

Another student from experiment 5 also confirmed that initial guidance is a must: “It is a very simple tool, if you know what to do. After the introduction, you can start right away.”

Other respondents reported on concrete features that they found useful or interesting: “Clear layout of Toolkit, and very easy to use to its full potential. The simple introduction slides at the beginning are useful. Gives guidelines on word limit per line. Displays your subtitling work on the video as you write it. Easy to play back your work.” Many students found that producing and translating subtitle templates on OOONA Tools constituted practical and useful translation practice:

It has proven to be very useful and easy to use. Caption softwares [sic] may sometimes be hard to understand, but it was not the case with Oona's [sic].

In other teaching sessions, like experiment 6, respondents were openly critical and listed several drawbacks and areas of improvement:

> *I can see the potential but there are flaws which need to be dealt with before it is fully functional.*
>
> *Audio wave is missing. The export to RTF, doc and docx are not working.*
>
> *There are some things that need to be improved: shortcuts, for example.*
>
> *I think it is a good start and if improved, it will be useful.*
>
> *Good, but should be improved. The tool has some issues, such as short cuts, no audio wave.*

It seems logic that the aforementioned responses are more complex than the ones provided in previous experiments as the respondents were highly specialised: four were active professional translators, three teachers, and six master's students. All of them had received translation- and subtitling-specific training and were familiar with, at least, one piece of subtitling software (including Wincaps Q4, EZTitles, etc.).

Another contribution worth being discussed is the following:

> *Since I have some business background, for every product (such as this toolkit), I am curious about the target customers and profitability of selling this product. I am not sure how big market share of this toolkit, but seems like it can be an open source for volunteering translators (volunteers to share some foreign series on internet) or students who need translator training. I think if this toolkit is targeted to students, the profitability is limited, since students may not be willing to spend money for a software. If this toolkit is targeted for academy/universities, it seems challenging to sell a product to an organisation and negotiate a licensing fee.*

Four years after this research started, the reality is that OOONA Tools seems to have found its place in the market and is starting to be more widely used by HE institutions offering AVT courses. Far from being a toolkit aimed at amateurs, this modular cloud software has consistently targeted active professionals and LSPs working with major media distributors. The main point made by this respondent was that cloud-based subtitling tools like OOONA Tools can be marketised so as to appeal translators-to-be and junior freelance translators, however. The use of paid software has been fairly adopted by trainers, as seen in Section 4.5.1, who

remain sceptical about the fact that students often have little access to such software outside the classroom. Therefore, adapting an existing cloud subtitling tool to be used in the classroom could be more advantageous.

The following is another incisive comment, reflecting on the potential that the use of cloud-based tools can have to stimulate situated learning practices, and socioconstructivism, in translator training environments (Section 4.2):

> *This idea could be used to create an online cloud shared between teachers and students, so they could share their work, collaborate in different projects, etc This application could allow students to co-work with their teachers, so the teachers would loose [sic] for a while their role of controllers and become co-worker and workmates of their students.*

This statement, too, tallies well with the concept being developed in this research, i.e. that cloud-based tools can be re-designed, or fine-tuned, so as to accommodate a leaner pedagogical approach for the teaching of AVT practices. The cloud-based tools would reflect the real-life professional ecosystem and the trainer would act as a facilitator by scaffolding knowledge building through the development of tasks online.

The next section draws on the above analyses to draft up the action points for the next and last AR cycle.

6.3.3. Further Findings, Summary of Results and Action Points

Following the above state of affairs, and similarly to what was done in Section 6.2.5 for the pilot study, a Pearson's correlation two-tailed test was carried out in SPSS, which resulted in the second correlation table contained in Appendix 5. This table shows the significance levels between the results of each question, which is expressed in percentage values. When the value is lower than 0.05, or 0.01 in some cases, the data might be correlated to some extent (boxes highlighted in orange in Appendix 5).

This data has been analysed in SPSS following different statistical techniques, including crosstabulation, and has been visually illustrated with clustered and stacked bar graphs. The sex factor, again, has been discarded altogether due to the bias caused by the considerably higher number of female students, which alters the statistical significance of the results in the $p<0.01$ test.

It has been found that, depending on the experiment subjects, correlations are present in Q4, Q6, Q7, Q11, and Q15. It was anticipated that this factor would lead to variations between the experiments as, for instance, experiments 1 and 6 comprised a higher number of educators and professional translators (60% in the former and 55% in the latter) as opposed to experiments 3, 4, 7, 8, 9, and 10, which included a prevailing majority of undergraduate and postgraduate students. Besides, not all institutions offer AVT- or subtitling-specific tuition, so some experiments, like 2 and 7, were attended mainly by subjects unfamiliar with such practices; in fact, in the former, only one respondent had received such training, whereas in the latter there were five.

The same scenario was observed in experiment 3, where all undergraduate students had been exposed to mainly pedagogical translation and AD applied to foreign language learning in the previous year, and experiment 4, where a number of Erasmus+ students had already taken AVT-specific modules in their home institutions (16, of which five had previous done subtitling too).

These figures, however, prove to be considerably low when compared to experiments 6, 8, 9, and 10, which were attended by a higher proportion of undergraduate and postgraduate students with some sort of AVT or subtitling training.

Drawing on the conclusions reached, and in order to expand on the previous analysis, a series of questions will now be analysed below.

1. How old are the respondents who have received subtitling training at university? How old are the respondents who would like to continue using OOONA Tools in the future?

Students who had received no training in subtitling were chiefly 17–20 years old (55, 24%). Among those respondents aged 21–40, 83 (36%) had undertaken university training, and 17 (7%) had learnt about it through self-training. Fewer 17–20-year-old respondents (29, 13%) had received formal training at university. Out of the 11 respondents older than 41, only 4 (2%) had taken university training, which might be due to the fact that early programmes of study in AVT date back to the late 1980s, if not 1990s, as discussed in Section 4.5.1.

It can be deduced that, in today's programmes of study, formal subtitling training is considered and specialised and thus tends to occur in the final years of language and translation studies when students have acquired a basic understanding of translation. Consequently, subtitling training is often found when would-be translators and linguists are over 20 years of age (Figure 6.74):

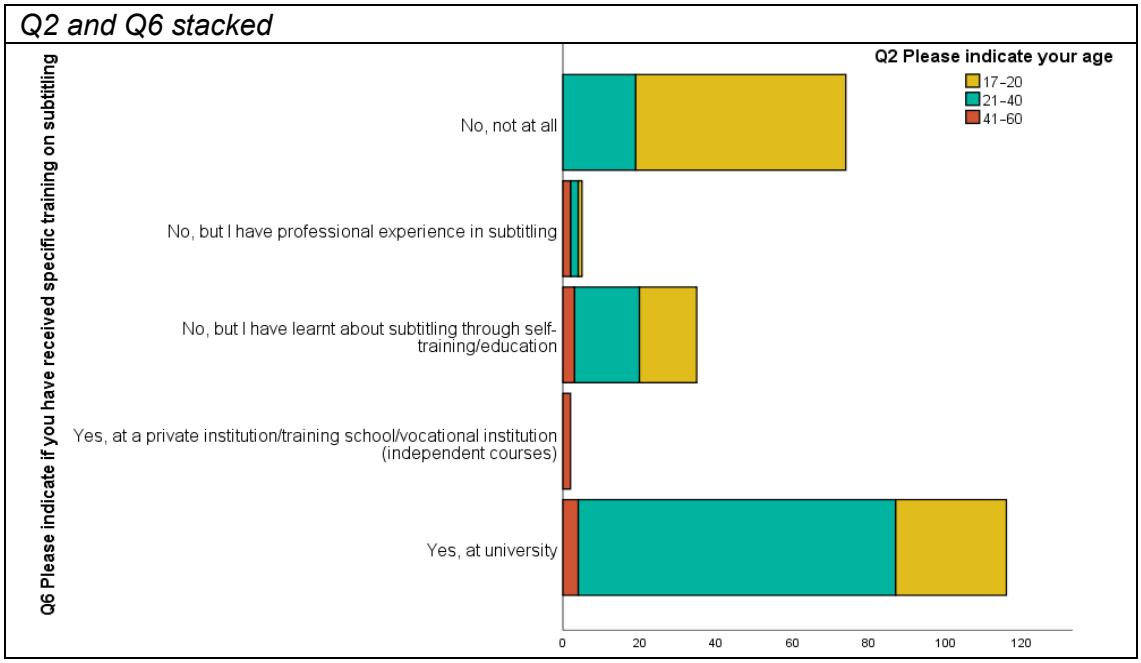

Figure 6.74. Answers to Q2 and Q6 stacked

Similar results can be found in Figure 6.75, as the number of 21–40-year-old respondents that took an AVT-specific course (67, 29%) doubles the number of respondents under 20 years of age that did the same (33, 14%). There is a scarce difference between the number of 21–40-year-olds (54, 23%) and 17–20-year-olds (67, 29%) that had not previously taken an AVT-specific course. In the 41–60-year-old range, 5 (2%) answered positively and 6 (3%) answered negatively).

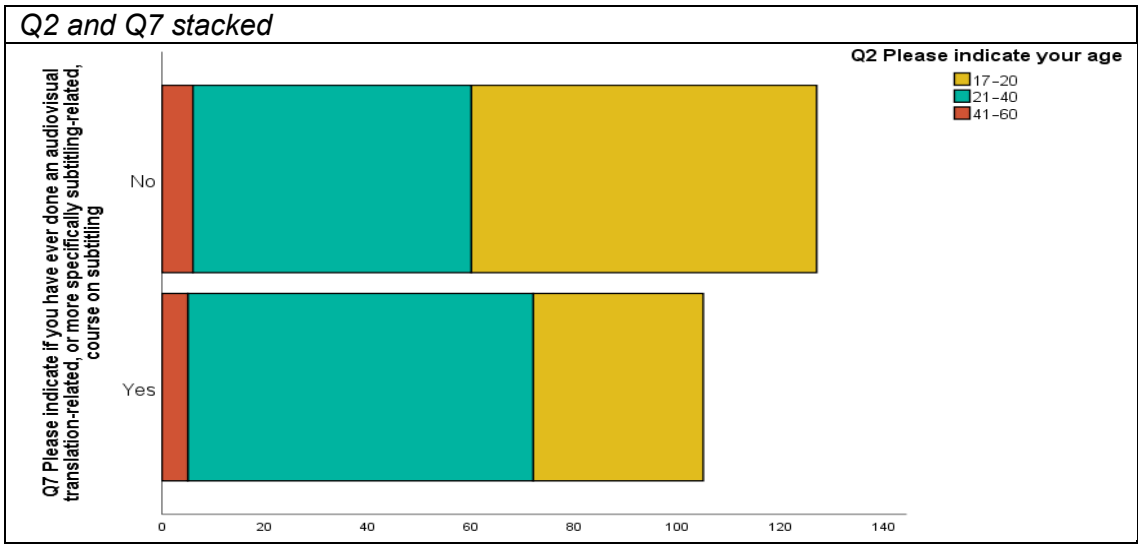

Figure 6.75. Answers to Q2 and Q7 stacked

Interestingly, as displayed in Figure 6.76, the number of respondents willing to use cloud-based tools in the future was higher in the 21–40-year-old range (103, 44%) than it was in the 17–20 one (76, 33%). The former also were less prompt to answer negatively (7, 3%) than the latter (18, 8%) when it comes to personal use of the tool in the future. All 41–60-year-old respondents expressed a positive attitude towards the future use of the tools.

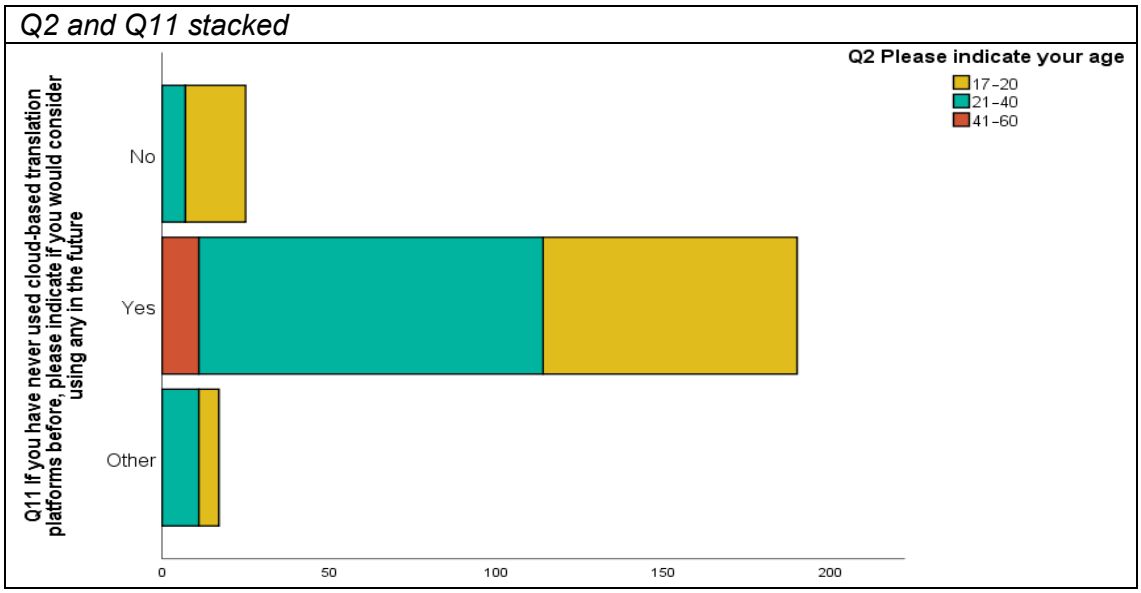

Figure 6.76. Answers to Q2 and Q11 stacked

As illustrated in Figure 6.77, most respondents considered OOONA Tools useful for training purposes (210, 91%), but more 17–20-year-olds (12, 5%) gave a negative response in comparison to 21–40-year-olds (5, 2%) and 41–60-year-

olds (3, 1%). Almost half of respondents (114, 49%) were 21–40 years of age and considered OOONA Tools to be a useful educational resource.

Q2 and Q15 stacked

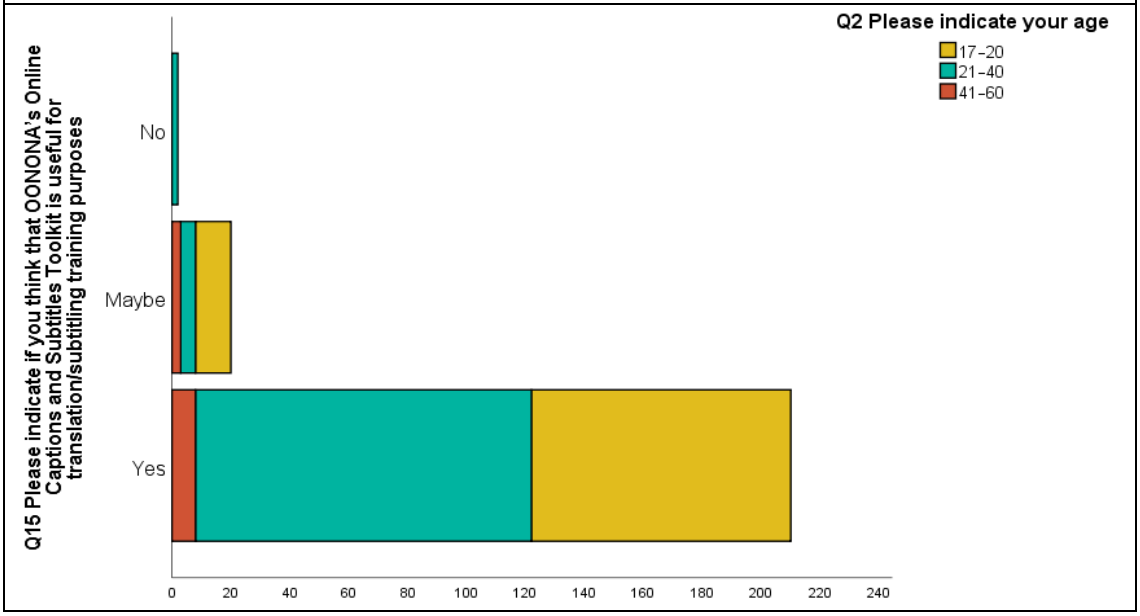

Figure 6.77. Answers to Q2 and Q15 stacked

The above results confirm that age is a determining factor when it comes to users receiving AVT-specific training and utilising the tools. It also seems to affect their opinion on their uses and applications, with older people being more positive on the whole.

2. What studies and roles do those who have received specific training in subtitling have?

In Figure 6.78 below, it can be observed that many respondents identified as students and also undertook formal subtitling training at a HE institution (100, 43%); similarly, all 4 (2%) trainers as well as 11 (5%) out of the 17 translators answered in the same way. On the contrary, the respondents (74, 32%) who had not undertaken any formal training were all students. This means that those who identified as active professionals, be they trainers or translators, did have subtitling knowledge to some extent.

Q4 and Q6 stacked

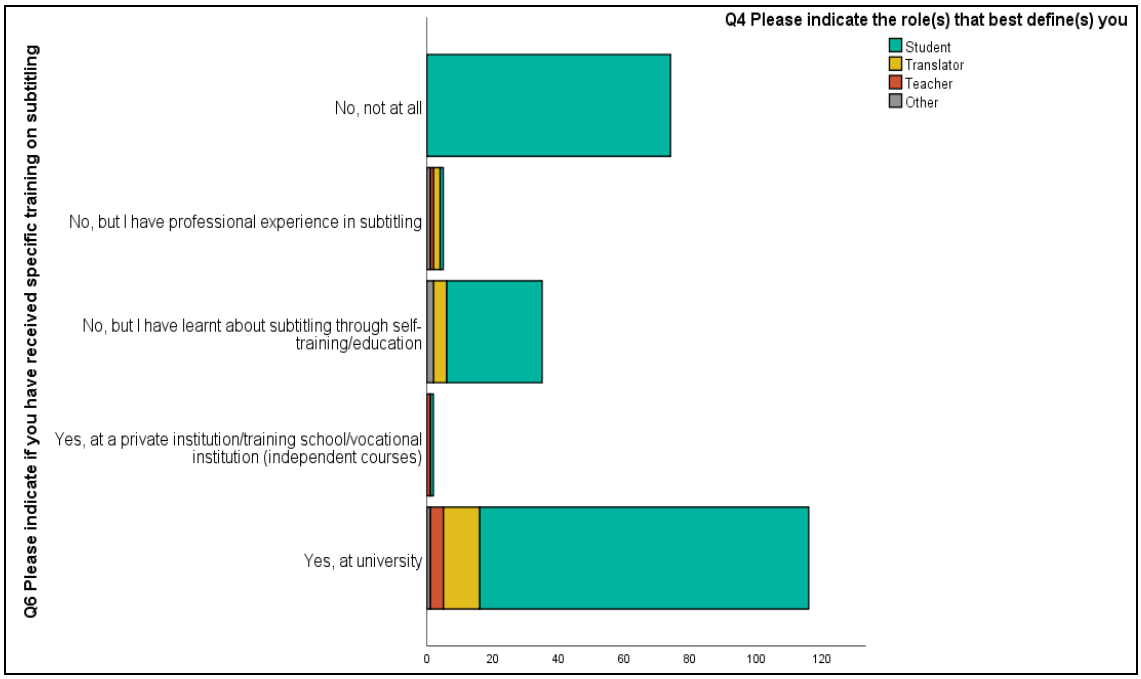

Figure 6.78. Answers to Q4 and Q6 stacked

Of interest is the fact that the higher the level of studies the respondents have attained, the more likely it is that they have also undertaken subtitling training at university (77, 33%, of undergraduate students; 12, 5%, of postgraduate students) or as self-study (12, 5% of undergraduate students; 7, 3%, of postgraduate students).

Conversely, 40 (17%) pre-undergraduate students and 33 (14%) undergraduate students had not received any formal training prior to taking part in the experiments (Figure 6.79).

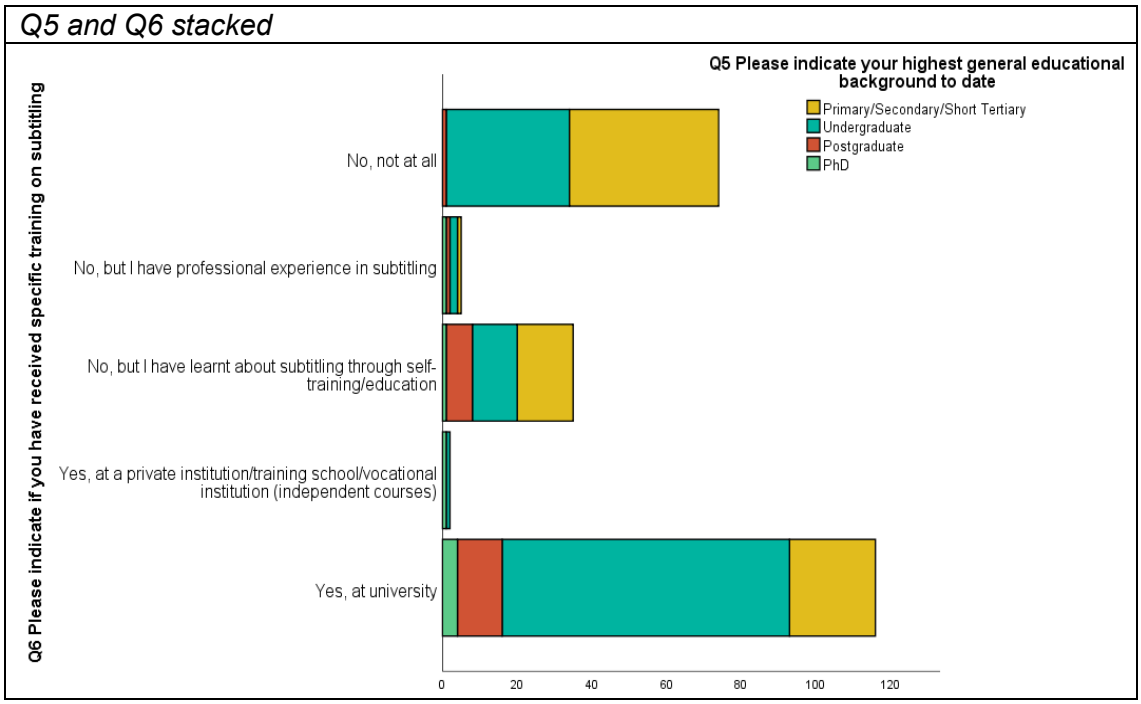

Figure 6.79. Answers to Q5 and Q6 stacked

The above results confirm the following trend: the higher the level of studies the respondents had attained, the more likely it is that they have pursued subtitling-specific training.

3. What studies and roles do those who have received specific training in subtitling have?

As a reasonably young cloud-based subtitling solution, it did not come as a surprise that most students (189, 82%) did not know about OOONA Tools, which was also the case among translators and linguists: 15 out of 17 did not know about it either.

As for the trainers, 4 out of 6 knew about OOONA (Figure 6.80). It could thus be argued that practitioners and teachers were proportionally more aware of the existence of OOONA Tools than the rest of respondents, although the number of students that knew about them still constitutes de highest number (16, 7%) among the rest of positive answers.

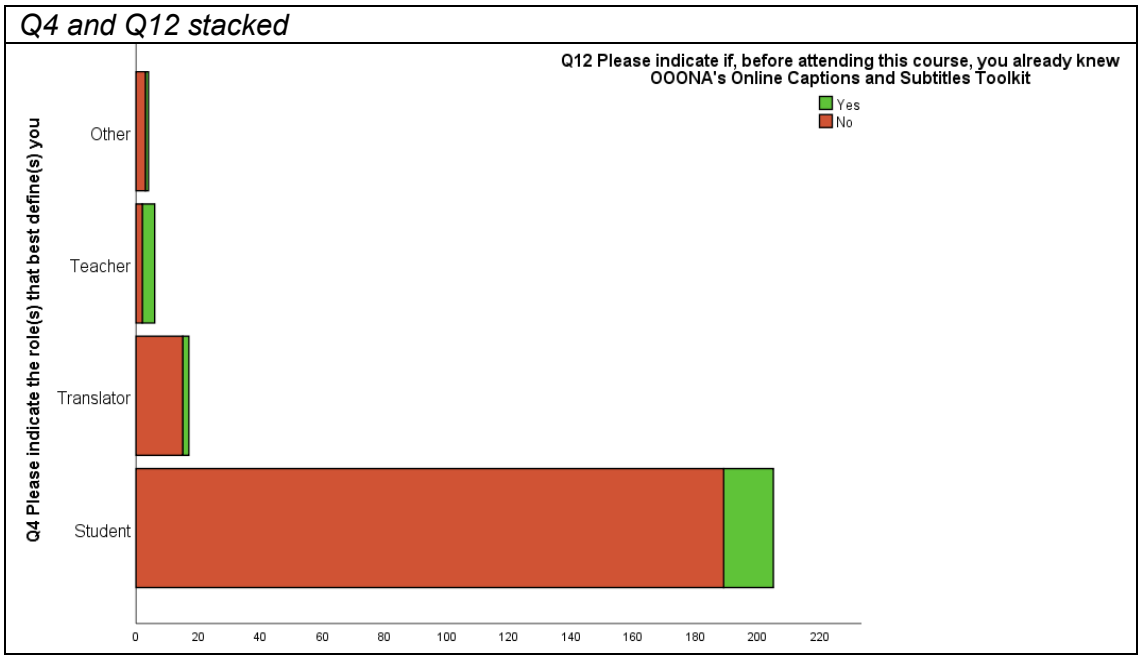

Figure 6.80. Answers to Q4 and Q12 stacked

A similar contrast can be established by looking at the respondents' study levels. Once again, a higher proportion of respondents, whose level of studies was either undergraduate (113, 49%) or lower (74, 32%), did not know about the tool. Only 3 out of 21 respondents at postgraduate level knew about the tool as opposed to 3 out of 4 respondents at PhD level (Figure 6.81):

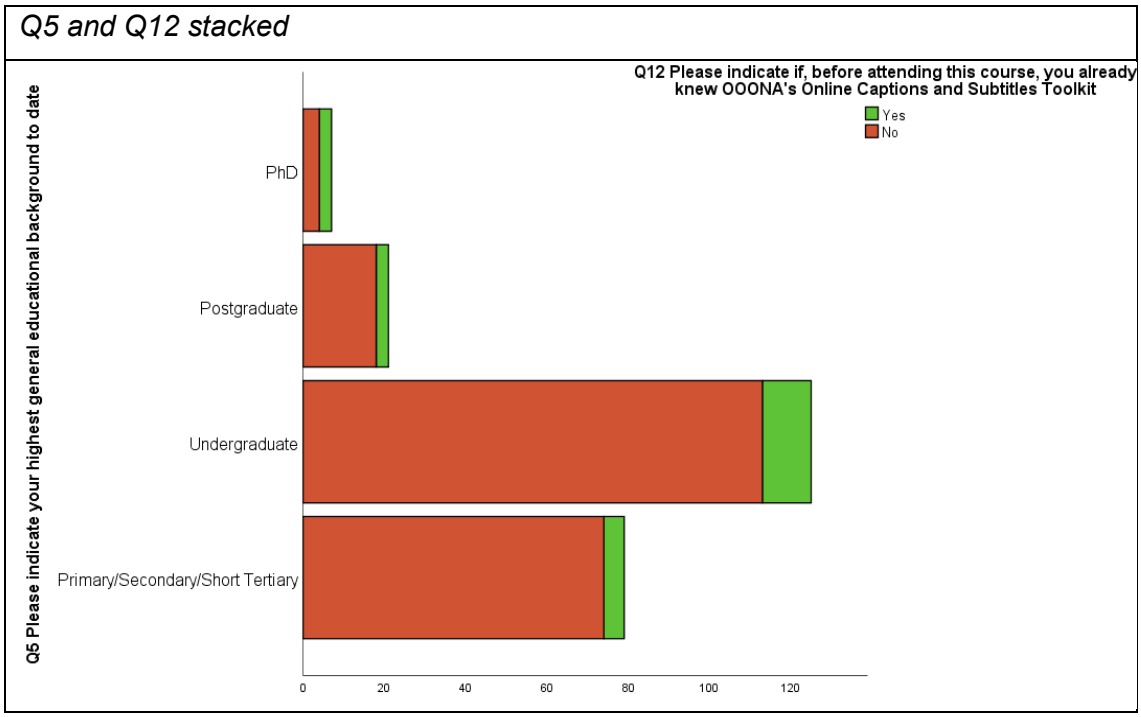

Figure 6.81. Answers to Q5 and Q12 stacked

The above results confirm the following trend: the lower the level of studies the respondents had attained, the less likely they were to be any familiar with OOONA Tools, or OOONA altogether, prior to attending the experiment.

4. Are those who have taken AVT-specific courses actively working or have extensive experience in the field?

In Figure 6.82 below, a peculiar scenario can be observed, where a significant percentage of respondents had already taken an AVT-specific course but did not have much professional experience (87, 38%). The number of respondents who claimed that translation was not their main professional activity and had taken an AVT-specific is slightly higher (8, 3%) than those who had also taken such a course and considered translation to be their main professional activity (5, 2%). A much higher proportion of respondents (117, 50%) answered both questions negatively.

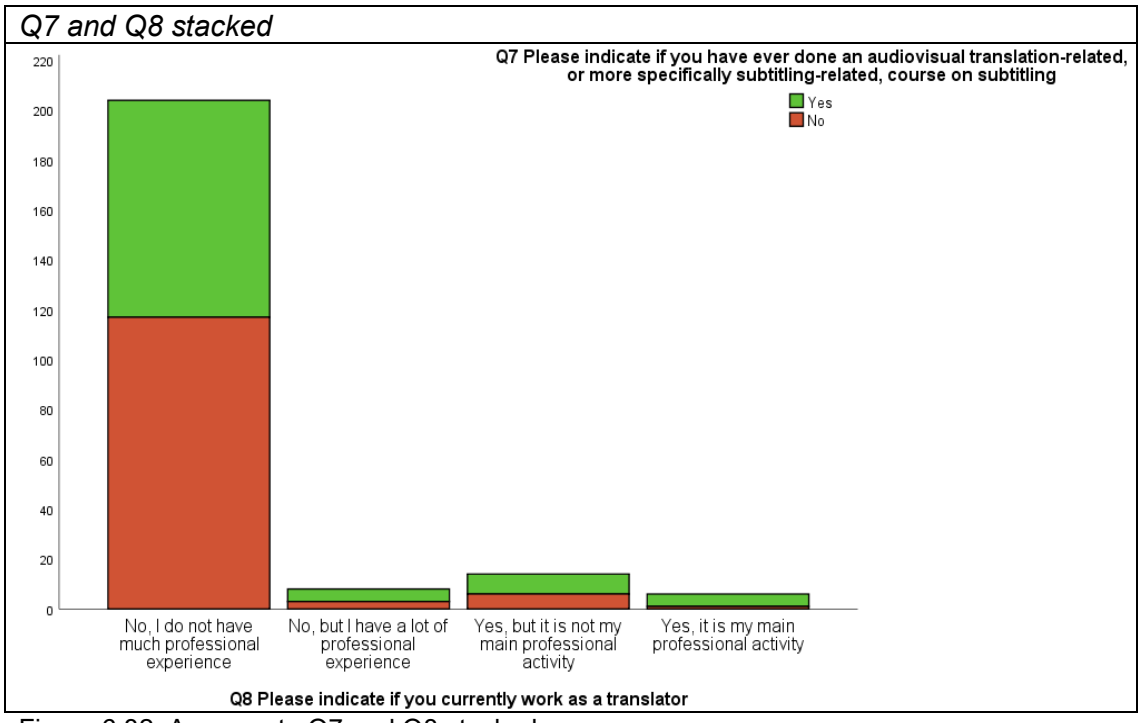

Figure 6.82. Answers to Q7 and Q8 stacked

The few respondents who were actively working as translators had also done an AVT-related, or subtitling-specific course, in the past. Over half of the

respondents had not received enough training and were not actively working, so they ought to be considered as beginners in subtitling training.

5. How likely are those respondents who indicated OOONA Tools is useful for training purposes to use the tool themselves in the future?

The results shown in Figure 6.83 are promising for the use of cloud-based tools inasmuch as most respondents (178, 77%) considered OOONA Tools to be a convenient tool to learn and teach subtitling and would also like to continue using it in the future. Some respondents (11, 5%) were more doubtful in regards with the pedagogical uses and applications of OOONA Tools but would still like to continue using it in the future, while 16 (7%) considered OOONA Tools to be pedagogically beneficial but would not use it in the future.

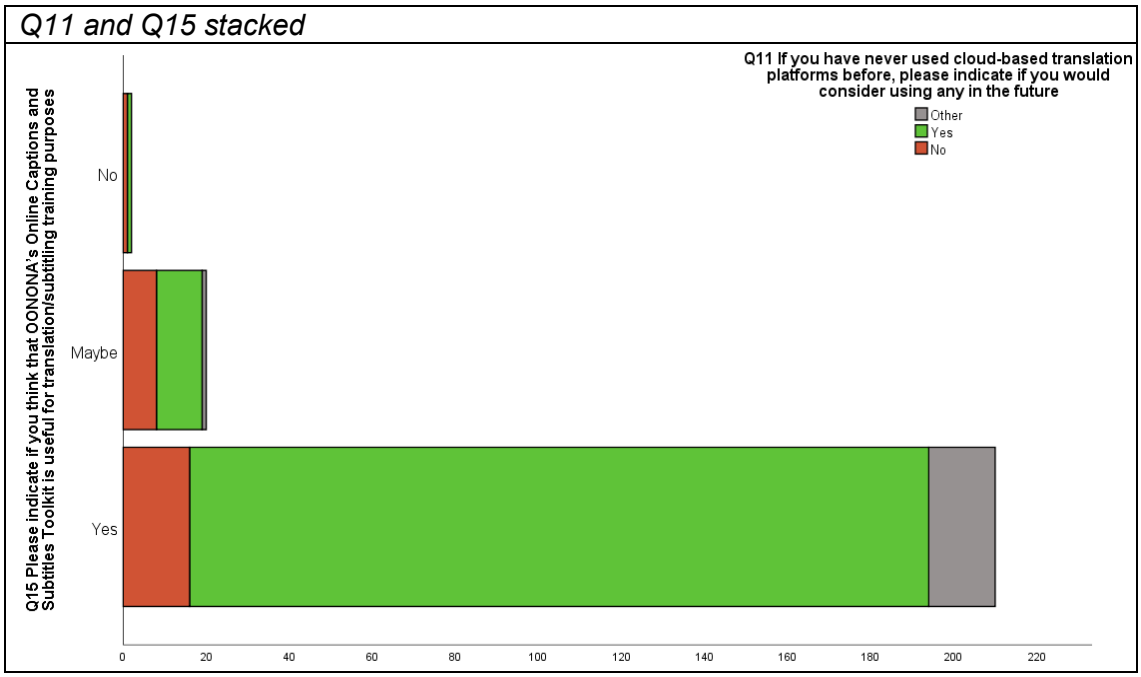

Figure 6.83. Answers to Q11 and Q15 stacked

The above results confirm that a direct link can be established between the didactic potential of the tool and its future use, although such a statement is subjectively biased and could inevitably be contested.

6. How likely are respondents who indicate OOONA Tools is useful for training purposes to be more satisfied with the tool overall?

It could be argued that any respondents who were dissatisfied with OOONA Tools would inevitably consider it of little pedagogical use too. As illustrated by Figure 6.84, only one respondent reacted in this way, nevertheless. As a matter of fact, the rest of respondents who were completely dissatisfied or dissatisfied would still consider that OOONA Tools could be used for pedagogical purposes (2, 1% for the former; 3, 1% for the latter), whereas another 4 (2%) decided to leave the answer blank. Almost the majority of respondents were overall very satisfied or satisfied with the tool and considered it to be pedagogically advantageous (105, 45% for the former; 66, 29% for the latter), but there were 7 (3%) respondents who, despite being satisfied or completely satisfied with OOONA Tools' performance, were not completely sure whether it constitutes a useful learning/teaching tool.

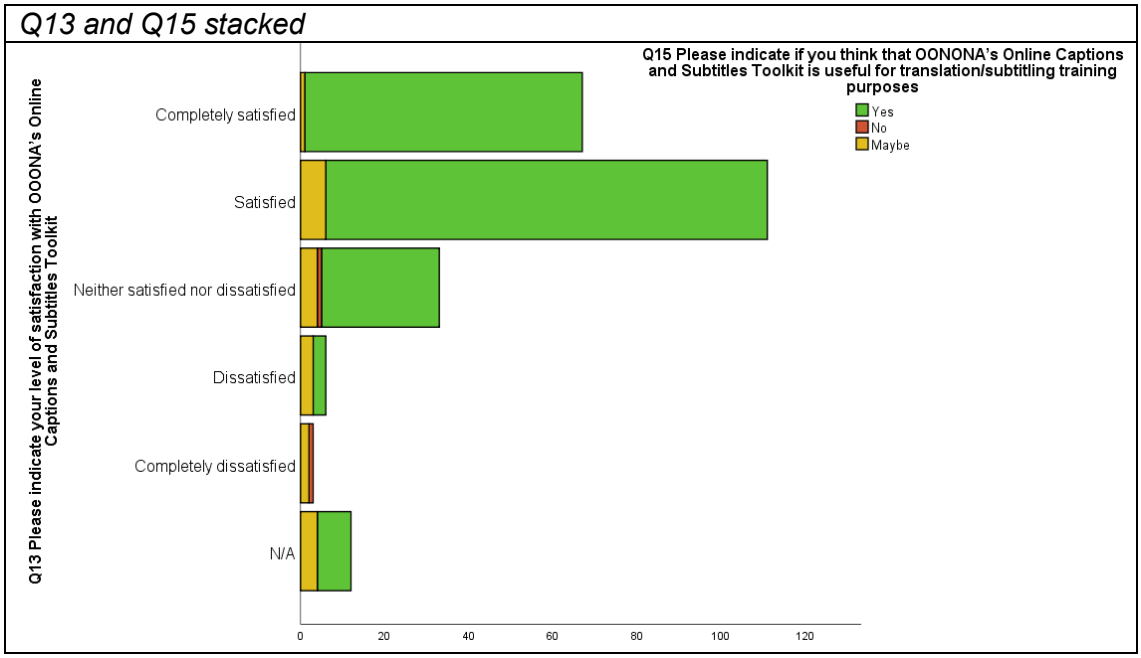

Figure 6.84. Answers to Q13 and Q15 stacked

The above confirms the following trend: despite the odd outlier, most respondents who liked OOONA Tools also considered it to be pedagogically useful.

7. What differences are there, between experiment groups, regarding roles, previous subtitling and audiovisual translation training, previous use of cloud-based translation tools and propensity to consider OOONA Tools a useful instrument to learn and teach subtitling?

These are perhaps the correlations that necessitate from further descriptions and context as they concern the differences that exist across the various experiment groups in specific answers. The below analysis draws on the previous experiment groups descriptions presented in Section 5.2.2.2.

The first correlation concerns the respondents' main roles (Figure 6.85). Only in experiment 4 were there respondents whose profiles did not correspond with the set categories, some of which identified as filmmakers and video editors. Most respondents were systematically students, except for experiments 1, 5, and 6, where there were also active language and translation professionals as well as translator trainers. The largest experiment groups were, in descending order, experiments 4, 10, 3, 8, and 7, all of which had a higher percentage of students compared to the rest of groups.

Q4 across experiment groups

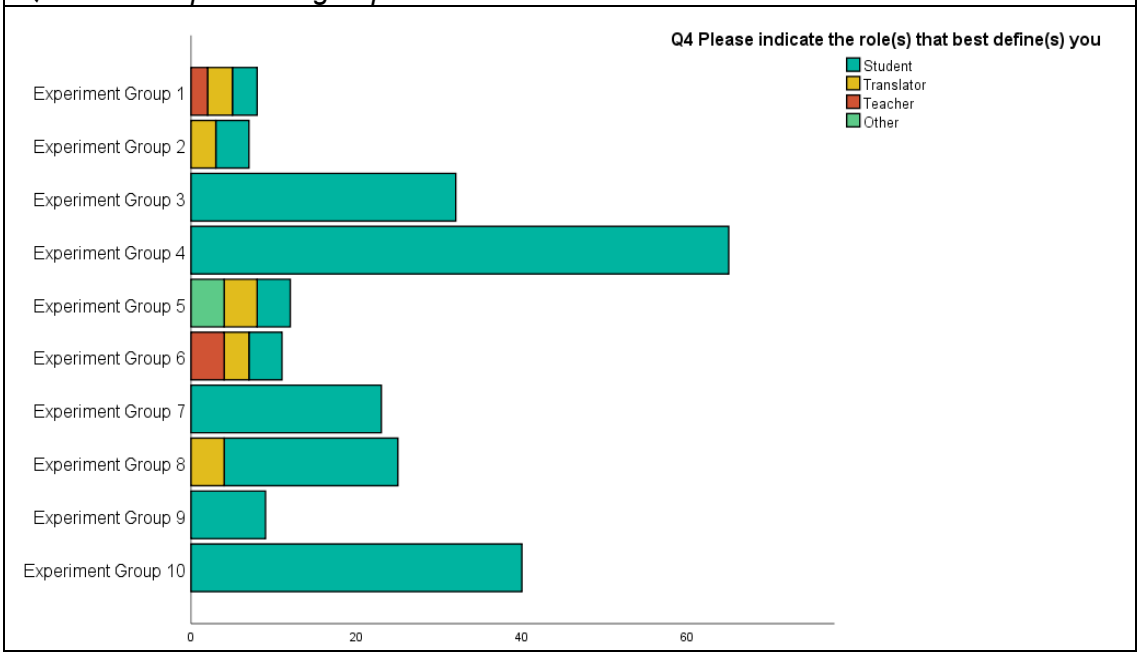

Figure 6.85. Answers to Q4 across experiment groups

The second correlation concerns the respondents who had received previous subtitling-specific training. As seen in Figure 6.86, on the one hand, the largest groups of respondents who took university-led subtitling training were in experiment groups no. 10, 8, 3, and 6 (in decreasing order), with 38, 21, 15, and 11 respondents (16%, 9%, 7%, and 5%) respectively; on the other hand, the number of respondents who had received no subtitling training whatsoever was considerably higher in experiment groups no. 3 and 4 (17 and 44, 7% and 19%, respectively).

Interestingly, 12 respondents from experiment no. 4 reported to have learnt about subtitling through self-training; so did 12 respondents from experiment no. 7. In experiment no. 1, where all respondents had previously received some sort of subtitling-specific training, two of them (1%) took an independent course (the only two respondents that answered like so across all experiments). Finally, experiments no. 2 and 5 showed the lowest response rate for university-led training: one (0.5%) and three (1%), respectively.

Q6 across experiment groups

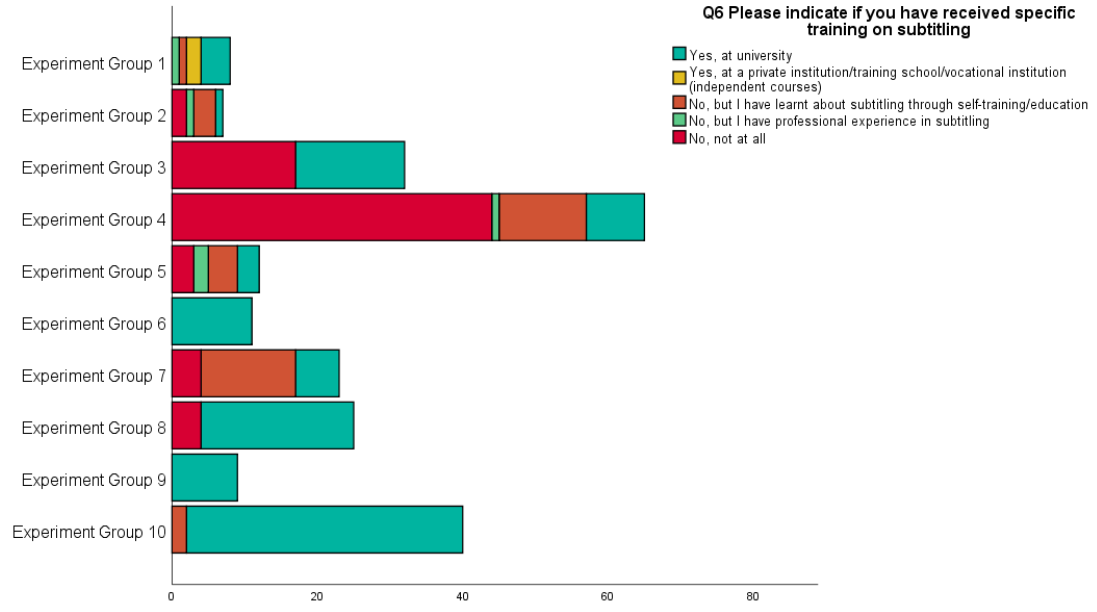

Figure 6.86. Answers to Q6 across experiment groups

The third correlation concerns the respondents that had taken, or were taking, an AVT-specific course at a HE or vocational institution. The results seen in Figure

6.87 are similar to the ones above, although not exactly equal: the largest groups of respondents who took AVT-specific courses were in experiment groups no. 10, 4, 8, and 6, (in decreasing order), with 31, 20, 15, and 11 respondents (i.e. 13%, 9%, 7%, and 5%), respectively.

There seems to be a sharp contrast between the previous results from experiment no. 3 and these ones since only five respondents (2%) claimed to have taken a course as opposed to the 15 respondents that claimed to have received subtitling-specific training at university; the same disparity can be consequently observed in the number of negative responses. The number of respondents who had not taken a course in AVT was considerably higher in experiment groups no. 3, 4, 7, and 8, with 27, 45, 18, and 10 (12%, 19%, 8%, and 4%) responses, respectively.

Q7 across experiment groups

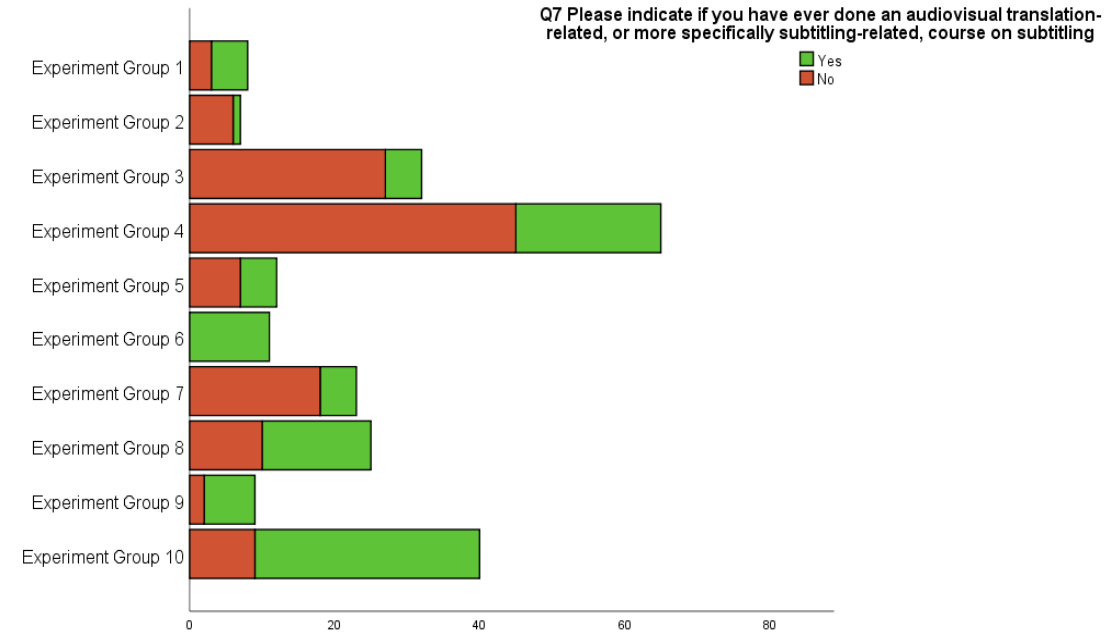

Figure 6.87. Answers to Q7 across experiment groups

The fourth correlation concerns the respondents' inclination to potentially using cloud-based tools in the future. Again, experiment no. 4 encompasses highly relevant data as it is the group where 15 respondents (7%) claimed they would not like to use such systems in the future, the second largest cohort being in experiment 3 (6, 3%). It must be acknowledged, however, that the former was

considerably larger than the rest of experiment groups (65 respondents), so the number of positive answers (45) also constitutes the largest proportion seen in Figure 6.88 (20%).

Also within experiment group 3 there were five respondents (2%) whose response was neither positive nor negative; and the same goes for experiments 7, 8, 9, 3, and 5, which had the following number of similar answers: four (2%), three (1%), 2 (1%), 2 (1%), and 1 (0.5%), respectively.

Q11 across experiment groups

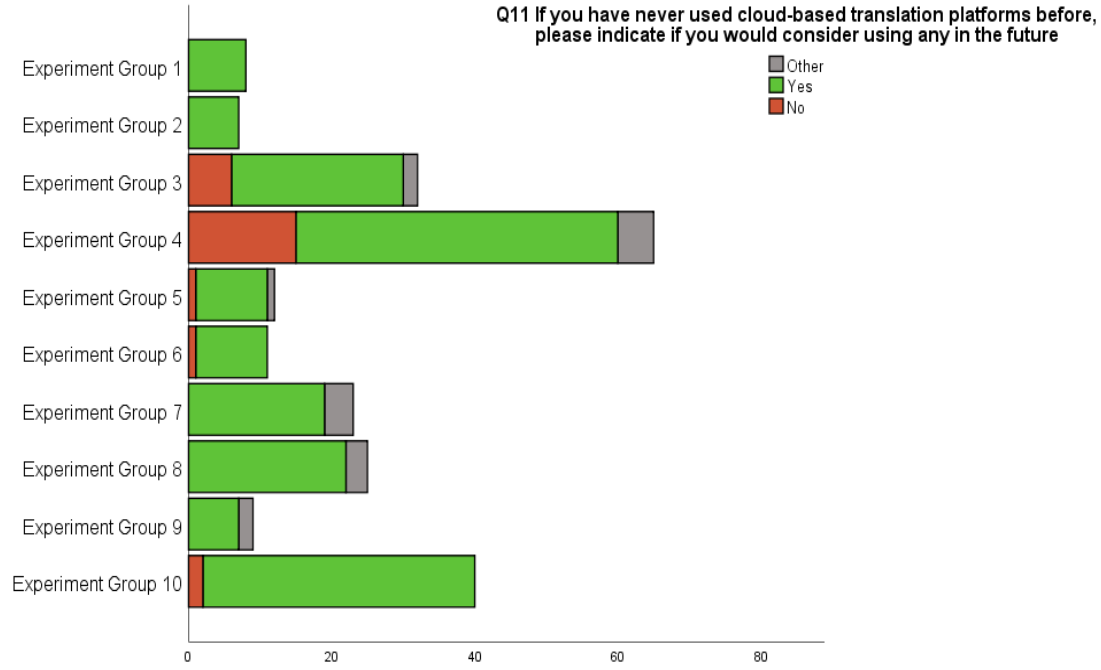

Figure 6.88. Answers to Q11 across experiment groups

The final correlation concerns the respondents' opinion sought on whether OOONA Tools constitutes a useful resource to learn and teach subtitling. Again, experiment no. 4 includes the highest number of undecided respondents who chose 'Maybe' (11, 5%), whereas the rest of experiment groups primarily have positive answers. Only two respondents answered negatively (in experiments 4 and 10) and another nine respondents answered 'Maybe' (Figure 6.89).

Q15 across experiment groups

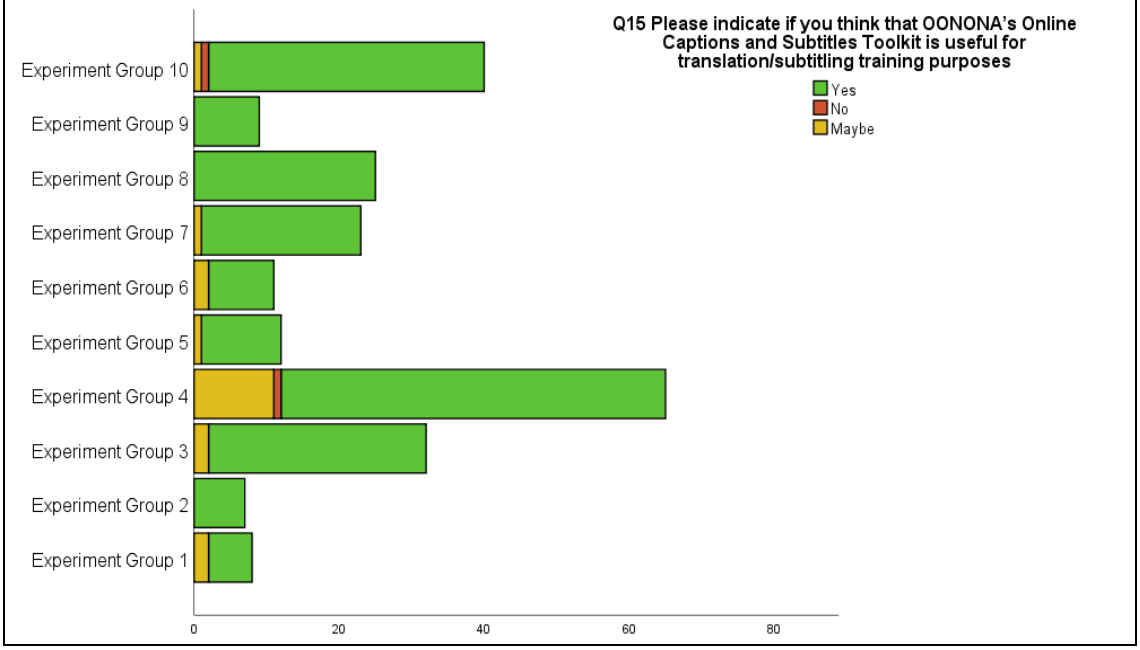

Figure 6.89. Answers to Q15 across experiment groups

Below are some of the conclusions extracted from the previous analyses to be considered for the next AR cycle.

Firstly, the vast majority of respondents identified as women, did not work as translators, did not have enough professional experience and were aged 17–40. Only 19 (8%) respondents were already familiar with cloud-based translation tools prior to undertaking the experimental sessions, which confirms the fact that HE institutions are rather slow when it comes to incorporating new technologies and also that cloud-based solutions have become popular only very recently. The overall satisfaction level reported by respondents was perceived as considerably high and only 9 participants out of 232 manifested being completely dissatisfied or dissatisfied. In the same vein, the vast majority considered OOONA Tools a useful resource and educational resource for the learning/teaching of subtitling.

Secondly, most respondents emphasised the user-friendliness and usefulness of the tool in their open-ended responses. The node containing references to performance satisfaction (including usefulness and overall quality) scored the highest value (127 positive references), whereas the node containing references to the tool's ease to use is in second place (103 positive references). The fact that most workshops were rather ambitious and yet students were systematically

able to complete the tasks also supports the idea that the tool is user-friendly and satisfactory, even for those with a more limited technical dexterity.

Thirdly, the students' motivation, which was, admittedly, neither tested nor measured at any point throughout the experiments, could have affected the respondents' opinions. For instance, the feedback from the participants that took part in experiment 4 demonstrates that they were more reluctant to consider any future use of OOONA Tools that other groups and did not label it as useful either. This rather negative attitude may be down to the fact that the members of this group were undergraduate students that participated in the experiments during class time, had previously received minimal training in AVT (and none in subtitling) and were undertaking translation as a mandatory component of their studies in Spanish language. The participants' motivation, which is suspected to be fairly low, could have therefore played a major role in the overall negativity of their responses.

Fourthly, all 41–60-year-old respondents expressed a positive attitude towards the future use of the tools. Similarly, the higher the level of studies the respondents had attained, the more likely they were to have undertaken subtitling-specific training at university.

The findings discussed in the previous two sub-sections have informed the design of a pedagogical model for the learning/teaching of AVT in cloud ecosystems, which is fleshed out in the following section.

6.4. Cycle 4: Tool Analysis and Summary of Suggestions

Building on the previous experiments, this one constitutes the last AR cycle of this research project and consists of a summary of improvements made to the existing tools to enhance their inclusion in the AVT classroom as well as proposals for improving AVT education in cloud ecosystems.

Alongside the experiments discussed in Sections 6.1, 6.2, and 6.3, AR cycle 4 consists of a series of technical reports containing areas of improvements for OOONA Tools were drafted, followed by a flow of electronic communications with the industry partners, during the development of the pilot and study experiments. Appendix 4 constitutes a sample of a technical report, and some of the points highlighted in it have now been incorporated to OOONA Tools, such as:

- Pro versions: the early cloud-based tools were limited to Create, Translate, Review, Convert, and Burn and Encode, which were more rudimentary than today's tools. The main additions were the Pro versions of the Create, Translate, and Review tools, which require the OOONA Agent plugin to work. The functionalities present in these professional versions of the tools are supposed to grant the user a more comprehensive subtitling experience.
- Layout: the new version of the tool is more accessible and can be easily customised to suit the user's needs, whereas the early version of the tool was more rigid and left little room to user-specific changes. What the user sees on the screen can now be customised as per the user's needs by dragging the edges or scrolling up or down with the mouse.
- Technical information display: contrary to the early versions of the tool, which only included a coloured bar to indicate the subtitle display rate, the actual reading speed values (cps or wpm) as well as the number of characters in each subtitle line (cpl) are now indicated in each subtitle box within the text editor.
- Timing glitches: there were basic timing-related problems in the early version of the tool that used to make the introduction of in and out timecodes complex. The new version of the tool offers a smooth, straightforward way to cue subtitles in and out, and no glitches seem to be present.
- File conversion: there were some errors introduced by the tool when converting and exporting subtitle files. When imported back into the tool, issues like extra blank spaces and positioning-related alterations could be found. Moreover, the new conversion tool allows the user to select subtitle-

specific features such as format, layout, language, and the like and is able to recognise languages automatically. The video preview has not been included yet, nonetheless.

- Shortcuts: the early tools' hotkeys were not straightforward and coincided, at times, with other operations (i.e. keyboard clashes and traps). The pre-set hotkeys menu was soon reconfigured so as to reflect long-standing conventions from other software programs, which have traditionally used the numeric keypad.
- Timeline, waveform and shot change detection: the early version of the tools had a timeline that included timecodes as well as the subtitles in the form of blue boxes. The newer versions include a waveform as well as shot changes indications alongside the subtitles' in and out timecodes, thanks to the previously mentioned plugin OOONA Agent. The timeline allows the user to easily customise the subtitles' timecodes, as well as to locate particular frames within the video. The user can now zoom in and out for the waveform and shot change indicators whenever needed.
- Work and review modes: these two modes are now more clearly separated. In the latter, subtitles are synchronised with the video, whereas in the former they are not. The work mode then allows students to play the video and change the timing of their subtitles on the fly without triggering any changes in the video preview screen and player; however, the review mode is far more common nowadays and allows for a continuous synchronisation between the user's position in the timeline and the frame being shown on screen.
- Error identification automation and review application: the Pro versions of the tools allow the user to semi-automate the process of locating and fixing errors. Moreover, the new Review tool, which was still being developed when this research first started, has incorporated new features that allow the user to introduce comments and track changes made to files.
- Tool switcher: along with new applications, the most recent version of OOONA Tools also include easier ways in which the user can move between different subtitling phases. The project files and properties are automatically transferred, thus making subtitling work more efficient.

- Help section: OOONA created a help menu where the user can find information on how to use certain features of the tools. It can be accessed from any of the tools and offers many insights as to how to use the tools more efficiently.

The above updates showcase the eagerness expressed by software developers to improve cloud tools in the age of agile software. Further issues have been encountered and are yet to be added to the tools, such as the many limitations posed by the Review (Pro) tool, which does not allow the user to have an overview of tracked changes in exportable format, and neither does it have a way to display all remarks or comments in a shareable file. In terms of navigation and hotkeys, there is still room for improvement as some features cannot be customised, e.g. pressing keys down to rewind or go forward when watching the clip.

The most urgent matter that requires consideration for cloud-based AVT tools is perhaps the role played by AI and language automation in the industry, where TM tools, such as memoQ and SDL Trados Studio, have recently embraced AVT. Conversely, the integration of TM and MT in existing AVT tools has been timider compared to other translation domains (Bywood 2020),

The changes that have been introduced thus far have targeted professionals, moved by industry needs and the company's business targets. Such changes have also benefitted would-be subtitlers and their trainers, but it remains to be ascertained whether developers are eager to incorporate pedagogically oriented changes too.

On the basis of the results obtained from the experiments, the feedback volunteered by the participants as well as my personal experience as an AVT trainer and researcher, what follows is the proposal of a series of features that ought to be reunited in an educational platform for the teaching of AVT in cloud ecosystems. Some scholars had previously called for "the integration of existing technologies in a single platform in order to consider the specificities of

audiovisual texts and of audiovisual translation" (Baños 2018:25) in the context of professional translation, but it is understood that a didactic platform that reunites all tools has the potential of boosting AVT education significantly too. A platform of this kind would constitute an immersive learning space for all participants and would therefore have to be user-friendly and intuitive. Ideally, such a platform would incorporate the latest technologies so as to allow the user to work on all revoicing and subtitling modes, but also all media accessibility practices including respeaking, as well as integrated CAT tools. Furthermore, the growth of multilingual projects at a global scale that are handled by project managers has not witnessed an equal increase of PM training in T&I and AVT education. So, the future design of an AVT educational platform ought to take into consideration the urgent need of teaching PM for AVT productions.

A didactic platform can be conceived as a learning hub where learners perform tasks that are set up by the instructor, so it should include existing professional tools that closely reflect current industry trends and conventions. In the below sections, a distinction will be made between the features that a platform should include and the modes that allow the user to set up, carry out, submit, and review tasks.

On the one hand, the platform ought to have a dashboard as well as some functionalities common to all modules:

- It will have different applications, or modules, for each individual AVT practice (Section 2.4). Following a modular model, the user should be able to select a specific practice – i.e. AD, dubbing, respeaking, subtitling, SDH – in each application, which is something currently unoffered by OOONA Tools or other existing cloud-based solutions. Being an instructional platform, it might be ill-informed to offer these applications straight on the main dashboard; instead, they could be offered in a list of options when launching a specific tool mode.
- There should be, at least, two different access modes depending on the user's role, i.e. one for the instructors and one for the students. This would

allow the teacher to utilise certain functions and resources not available in the student's interface, which is highly important for both task creation and assessment.

- The platform should contain a series of tools as well as a help menu and a communication centre including a chat box, a message inbox, and a notification menu to enhance interactivity. The latter would be key to alert the students of the release of new activities that they ought to complete. Ideally, push email notifications would be sent to the student's email address to remind them of any outstanding tasks.
- Educational tools should contain a list of basic hotkeys; in subtitling, for instance, these are related to the video player, spotting, and text editing. Shortcuts can help the user to make quick changes that concern line breaks, colours, symbols, position, formatting, and styles. As it happens, the existing tools' hotkeys menu can be relatively complex and hence too difficult for would-be subtitlers, especially at the earliest stages of learning. It would be best if there were several predetermined menus depending on level of difficulty, so that the user was given the option to customise hotkeys as the learning progresses. On another front, it has been observed that the number of students working on machines or laptops that contain independent numeric keypads seems to be decreasing, which leads to the conclusion that other hotkeys may be needed. It is only reasonable that the tools in a platform of this kind would offer a pre-defined set of shortcuts that take into consideration laptops. Finally, since cloud-based tools operate within browsers, it is essential to avoid keyboard clashes and traps. For text editing in all of the above, students should be able to move up and down, i.e. from one subtitle box to the next and vice versa, with the arrow keys as well as to apply all shortcuts that are commonly used in text editors (e.g. copying, cutting, pasting, delete, backspacing, italicisation, etc.) as can be done in OOONA Tools.
- The platform should allow for educational material (videos, subtitle files, or any other kind of document) to be stored in the platform so that it can be shared among all users in a leaner fashion. The materials would be in a repository so that they can be used in any of the applications.

- The help menu ought to contain video tutorials as well as sample projects that students could open in the tools. Such projects would include pre-configured files and clips that the students can open, as well as step-by-step guides pointing them towards the features with which they ought to become more familiar. As seen in the experiments, many students interested in the tools were complete beginners and thus required further help and guidance, despite them arguing that the existing tools were user-friendly and easy-to-use.
- A didactic platform necessarily has to offer a note-taking feature in which the student can pass on comments back to their assessor, or counterparts, as well as to initiate a more formal discussion of their work via messaging or chat. They should also be allowed to have their own notepad to store information for future reference.
- Finally, integrating videoconferencing tools – as browser add-ons or plugins, for example – would enhance the immersive experience of the users and allow the instructor to offer synchronous lessons on the platform without having to leave the cloud ecosystem.

On the other hand, an AVT educational platform should contain at least four specific modes, such as (1) design, (2) work, (3) assessment, and (4) submission and discussion:

- In the Design mode, and in the same vein as the creation of projects in some modes, the user will be able to create activities for the different AVT practices available. Upon selection of, for instance, interlingual subtitling, the user will then be able to select the type of exercise and to create a text-timing or template-translation activity from scratch. So, taking OOONA Tools as an example, the user can decide whether the activity will be to time text (Create), translate a template (Translate), revise a template (Review), convert subtitle files (Convert), burn and encode video clips (Burn and Encode), or something else.

The platform would allow the user to set up the file properties as well as to import the video clip (via URL, cloud storage, or local file upload) and then time it. Cloud storage is currently not available in OOONA Tools and would constitute an important asset for a platform of this kind. OOONA Tools restricts users to YouTube, whereas there are other video streaming platforms that may be consider by trainers too, e.g. Vimeo and Bilibili. Furthermore, many HE institutions have their own audiovisual repositories, but their functions are often rather limited. It may be advisable to allow the user to upload repository contents onto the platform to avoid the time waste posed by the downloading and uploading of the materials from and to the platform.

In OOONA Tools, the subtitles are saved on the cloud, but not the video. One can download a pre-set subtitle project in .json format, which is primarily used for transmitting data between a web application and a server. Although this is a useful way to share project files with students and tutors, it is time consuming and implies abandoning the ecosystem, which detracts from the immersive feeling that a platform of this kind could provide. A learning platform would allow the instructor to set up a task and post it directly on the students' dashboards for them to start working on the application without any further ado. Each project's properties would be set up depending on aspects such as the students' command of the software, previous knowledge of subtitling, and the brief or instructions given by the trainer.

The user should be able to make tasks visible, or invisible, as well as to set submission deadlines and instructions (e.g. translation brief). Upon creation, new tasks will be made available in the students' dashboards. When posted, tasks automatically appear in the work mode. Any changes applied after having posted a task should be automatically notified to the involved parties (i.e. creator and students being assigned the task).

This mode can be exploited by the students, whenever prompted by the instructor, to create their own task. For instance, they may be asked to

create an activity for their counterparts, e.g. a template. When ready, the student would then assign it to another individual as previously specified by the tutor. The possibilities brought by making the students creators of their own activities are indeed many and can be further explored in future research studies.

Design options made available to students, however, should be duly tailored to the students' needs depending on the learning context. In the early stages of the learning process, for instance, it may not be advisable to let students share their designed tasks with the rest of students.

- In the Work mode, the trainer will act as a project manager and allocate work to the students. The interface should include a list of visible tasks (including key information such as name, submission deadline, level, or module name) and an option to select which cohort of students will be assigned each task. It might be advisable to be able to assemble students and create level- or module-specific groups, although tasks could also be assigned to individual students. Upon selection of which students will do a given task, they should receive an instant notification and be able to access it.

  A work progression viewer would be advisable, in the form of, for instance, a Gantt chart. Many CAT tools include a similar function, which would state, in the form of a percentage or numerical figure (e.g. number of words, minutes, or subtitles left), the completion status of each project. This information would allow the trainer to have a better understanding of the students' progression as well as to identify potential bottlenecks. The trainer can also adapt the pace of the teaching and plan tasks and submissions according to the students' learning patterns.

  In the student's interface, this mode would display a list of visible tasks, including key information such as name, submission deadline, level, or

module name. The student would be prompted to work on the task as well as to submit it directly for the instructor's records.

The tool ought to have a function that allows students to submit their work and automatically switch to assessment mode in a single click, following which a default confirmation message can be displayed whereby students acknowledge they are willing to submit their work.

More importantly, it is urgent that solutions such as OOONA Tools integrate language automation. A platform conceived to teach AVT should therefore use TM and MT engines, as well as termbases and auto-suggest dictionaries that draw on AI. The technological strides witnessed in the language industry, such as the creation of video plugins in existing CAT tools, are exemplary of the need to, conversely, incorporate CAT tools in existing AVT tools too.

- In the Assessment mode, the trainer will have access to the students' submissions in order to assess them. It ought to allow the trainers to have full access rights and self-assign the assessment of individual projects or assign it to a different instructor from a drop-down list. It could also allow them to assign the revision of individual projects to other students in peer-review or peer-assessment activities.

  This option would be innovative and make the process of marking and grading AVT projects more efficient. The subtitles and videos would be saved in the cloud ecosystem, so the trainer does not have to retrieve the student's work from a third party or learning tool to then import it in the corresponding software program.

  Tasks can be formative (i.e. non-assessed) or summative (i.e. assessed), which has certain implications depending on each HE institution as some might require summative assessments to be fully anonymous. Learning tools such as Moodle, which often includes subsidiary essay submission

tools like Turnitin, allow instructors to make submissions anonymous until fully marked. The platform would, ideally, contain a similar option whereby students are given unique identifiers upon submission of their work. These unique identifiers should be directly linked to the students' email addresses and personal details so that their work can be easily traced in the event of technical failure. Submissions have to be de-anonymised at the instructor's discretion.

The assessment process could benefit enormously from enhanced automation of the revision. For instance, a technical error checker in the subtitling tool compare the template's timing against the properties to identify any discrepancies. Similarly to OOONA Tools' error check functionality (Section 3.5.7), any mismatches or illegitimate reading speed and character-per-line values, for example, would be automatically highlighted in red or a similar colour. Ideally, this feature would also generate a detailed report containing the technical errors present in the task as well as their location. Spelling and grammar checks can be semi-automatised in the target language by utilising spell-checking add-ons, although careful attention should be paid to the quality of the tools used. Ideally, a built-in thesauri and auto-suggest dictionaries would help the review task by offering a series of alternatives to the assessor.

The teacher's comments ought to be automatically track-changed so as to allow students to understand which aspects of their version need to be improved, and why. The interface should also allow the instructor to generate a report containing the comments, or annotations, written in the subtitle boxes. As it stands, the existing comments functionality does not allow for a comfortable reading of lengthy feedback. Furthermore, it would be useful to have a list of repeated comments and errors that could be incorporated by means of text recognition or from a drag-and-drop menu. The teacher might also want to include an overall comment on the student's performance, be it in written or oral form, as done in other grading online platforms such as Turnitin.

A help menu containing key reference information about the tool as well as customisable marking criteria and focus areas would be advantageous to guarantee consistency across the marking of AVT projects. Such documents would be particularly useful in multilingual settings where several tutors share the teaching of a component in a specific cohort of students or module.

This application will only be made available to students when they are prompted to peer-review or peer-grade exercises as instructed and duly monitored by the trainer. Once the students have been manually allocated their counterparts' submissions for revision, they will then have full access to them.

Students can thus be given the opportunity to evaluate each other's work. Whereas the former encompasses formative assessment only, the latter could include summative assessment in which the students grade the work of their counterparts. For tasks of this nature, it is paramount that the platform shows the previously agreed marking criteria and marksheets that the students have to use to assess their classmates' projects and give feedback.

- In the Submission and Discussion mode, instructors will have access to a menu containing AVT projects that have been marked as complete in the previous mode, which may include both student- and teacher-led assessments, as explained above. This mode would include the results of the assessment, along with the students' fulfilment of the marking criteria and an overall comment on their performance. It would then allow them to re-work on the file for re-submission whenever prompted by the trainer. This practice would encourage students to reflect on the areas of improvement of their work and come up with a revised version of their project.

In this mode, students will access their work's evaluation along with feedback on their performance. Adherence to the marking criteria could be visually presented in the form of Likert scales or similar charts so that students can easily tell the quality of their work in a visually attractive fashion.

Monitoring the students' learning progress more closely would allow to better inform teaching practices and avoid cross-posting and content repetition as well as to enhance the teaching of specific aspects with which students may have struggled. This could be done by assigning tutors' rights under task creation or work and progression checker modes.

At times, different AVT practices belong to different modules, or module components, so there might be more than one instructor for the same module. An instructor could potentially lose access rights due to technical problems or administrative issues (e.g. casual teaching staff whose contractual obligations are renewed annually). In some AVT courses, instructors might as well benefit from having access to the students' work for monitoring purposes although this should be previously agreed with the students. it might be advisable then that trainers have full access to the students' work records, in the form of an archive or portfolio to which trainers can be granted access on demand and upon request.

It goes without saying that the above-mentioned features and characteristics do not constitute a comprehensive list of items that a cloud-based AVT learning platform ought to have; however, it does offer an introspection into what a prototype could look like.

To sum up, it has become clear that OOONA Tools has improved significantly since the early versions of their cloud-based tools that were first used five years ago. A retrospective analysis has shown that considerable updating work has been carried out by the software developing company to better meet industry demands and offer a more resilient piece of software. The role played by cloud infrastructures, in the age of agile technologies, has undoubtedly been key for

the developers to fine-tune the tools in such a short space of time all by enhancing their customisability. There is room for improvement in a number of aspects, so it is highly possible that further changes will be witnessed in the near future. Be that as it may, the tools are currently suitable for professional use in the industry and also meets the demands of professionally oriented subtitling teaching by offering a solid cloud ecosystem in which would-be subtitlers can learn the ropes of professional subtitling. A salient point in case is the fact that the tools can be easily integrated into an ad hoc educational platform by means of applying the changes proposed in this section. It remains to be ascertained, however, the extent to which such a platform would be more or less adequate and pedagogically sound than the existing cloud-based tools.

CHAPTER 7

CONCLUSIONS AND FURTHER REMARKS

The scope of this thesis has been to evaluate the uses and applications of cloud-based tools, presently used in the AVT industry. Prior to the start of this research, there were no records of previous studies carried out on this topic in TS, let alone AVT, and neither were there any studies that also utilised AR approaches for the same or a similar purpose. The use of cloud subtitling tools was also limited to the HE training centre where this research has been carried out. Therefore, this research study can be considered exploratory and is expected to open up new research avenues for subsequent studies exploring the didactic values of cloud-based translation technologies in AVT research.

Cloud systems have been and are still being developed mostly by private agents in the translation industry, following a vast increase in the global workflow handled online in the ever-changing AVT landscape. On the one hand, large media distributors and broadcasters of audiovisual productions have created their own audiovisual localisation systems, such as Netflix' Subtitle Originator, to improve the overall productivity and quality of the translation outcome achieved by their preferred vendors. On the other hand, smaller LSPs have also introduced their own online translation tools, which they make exclusively available to their pools of translators (e.g. iYuno, Plint, and Zoo). Other software developers, however, have opted for making their web-based systems open to all users on a pay-per-use basis (e.g. OOONA).

The ground-breaking transformations spearheaded by globalisation in terms of data sharing, audiovisual distribution and consumption, and translation workflows have posed a number of challenges to AVT professionals and educators alike. In this sense, the immediateness and de-localisation of work have characterised this century's AVT landscape. Desktop software programs that have been traditionally used in the industry may have some limitations when dealing with projects of this nature, especially on account of their more rigid nature and their file-sharing restrictions. Today's shift towards 'glocal' translation labour, and

translators' workbenches thereof, has clearly been steered by technological advances in cloud computing.

New technological developments are currently looking into the integration of further automation, including CAT tools and AI, within cloud AVT systems. This would allow professionals to utilise a wider variety of language technologies in a single interface, which could potentially be located solely on the cloud rather than local computers thanks to promising advancements in cloud computing. Indeed, this research points towards a greater presence of cloud tools, which will continue to grow or even replace desktop software in the long run. Yet, although the use of internet resources, CAT tools, and cloud ecosystems is expected to prosper, it will always be subject to the human factor. As argued by Gough (2011), the success of any new AVT tools will be dependent on whether translators remain open or reluctant to embrace technology.

The AVT industry is, and has traditionally been, technologically driven, and the cloud has brought about a vast array of new possibilities that have the potential of maximising resources and improving efficiency in the revoicing and subtitling of audiovisual programmes. Workflows are increasingly web based, with projects being handled from beginning to end on the cloud with the aid of online PM platforms. Peer-to-peer communications and file-sharing, which are essential components of any AVT project, are handled exclusively online nowadays. Moreover, no longer do distributors share physical copies of translatable material (e.g. audiovisual products) with translators; instead, clips are safely kept in cloud servers and shared in the form of tokens so as to avoid the disclosure of sensitive information to third parties.

From the perspective of the freelance translator, the cloud has also contributed to providing further flexibility and dynamism, especially for those who do not have a fixed workstation and do not work full-time, or those who often work in projects other than AVT related. Translators now have the possibility of purchasing a temporary license to use cloud-based tools whenever they happen to require one. That said, many LSPs do provide, more often than not, their linguists with access to cloud-based tools for certain projects. These alternatives can help alleviate the

otherwise stress and pressure suffered by translators when they have to set up, or update, their workbenches. The fact that they may be called upon to work on projects of varying nature together with the wide arrange of files and formats that are used in the industry constitutes a challenge for freelancers who may feel reluctant to make lump sum investments to keep up with the technology, especially at the earliest stages of their career.

It is clear that cloud systems have acted as true catalysts for a change of paradigm in the localisation – and subsequent distribution and consumption – of audiovisual products. These changes, however, are still to make deeper inroads into the AVT classroom as previously argued in this thesis. The major transformation spearheaded by cloud computing in the AVT industry is not being reciprocated at HE institutions, which normally struggle to keep up with technological changes.

The inclusion of digital technologies in the T&I curriculum is ever-more patent today than in previous decades. The UK, as with other European countries, has experienced a major transformation in HE settings in the past few years. Alongside such changes is the unprecedented rise of undergraduate as well as postgraduate courses of study that include instances of AVT tuition. The academic study of AVT practices, which was timidly integrated in HE in the last quarter of the 20th century, seemed to gain momentum at the turn of the century although this rise of AVT scholarship has not been so homogeneous in many countries outside of Europe. The integration of AVT in curricular programmes, though not exactly simultaneous to the booming of audiovisual and media localisation experienced in the industry, is exemplary of the necessity of HE to accommodate new fields of study as well as the need to strike a balance between theory and practice by introducing industry-informed training courses.

AVT has been, and still is in some countries, a rather late-comer to education. Yet, it is perhaps one of the areas that has evolved apace on account of its close links to technology and industry innovation. The way the first courses taught AVT, with VHS tapes and virtually no access to the specialist applications, has now changed rather radically. In today's training landscape, instructors need to be on

top of the swift changes occurring in the industry; else, AVT modules risk becoming obsolete in a rather short space of time.

Having said that, the importance conferred to new technologies in the AVT classroom varies enormously across the globe, and the use of desktop-based software, especially open-source freeware, is still today an enduring reality, with commercial software being often limited to wealthy HE institutions, with many trainers sticking to desktop-based freeware. The study of cloud tools, which at the moment are taking the form of paid systems, remains barely untouched in AVT education. There is therefore room for reflection and reconsideration on the ways in which AVT is being taught today, and AVT educators ought to acknowledge the rising importance of cloud tools in the industry by updating the existing curriculum and train students accordingly.

To simulate real-world practice, AVT instruction needs to build on long-standing educational approaches such as socioconstructivism as well as project- and task-based methods, while at the same time raising awareness on the importance of AVT-specific competences. Programmes of study ought to be professionally oriented and industry informed so as to better prepare translators-to-be and make them more employable in a rather competitive professional market. Existing models for the study of translation competence, however, have traditionally paid little attention to the honing of instrumental competences and knowledge of the industry. The most recent competence framework published by the EMT Expert Group (2017) as well as the set of AVT competences put forward by Cerezo Merchán (2012, 2018) constitute far-reaching attempts to bridge such a gap and serve as a stepping stone to better situate AVT in HE.

Additionally, the AVT classroom has experienced profound changes as HE institutions are increasingly embracing the use of b- and e-learning. Traditional, exclusively face-to-face lessons are gradually leaving more room to instances of remote education and independent learning, especially after the application, throughout Europe, of the measures taken during the Bologna Process by EU members at the turn of the century. In the past few months, due to the COVID-19 pandemic, HE institutions have also been forced to quickly adapt lessons and

delivery methods so that students can follow their studies remotely. No wonder a dramatic surge in the usage of distance-learning tools, including videoconferencing and virtual tutoring, is more manifest today than ever before (Li and Lalani 2020). In this scenario, one of the main bottlenecks HE institutions encounter for the provision of AVT training in both b- and e-learning remains the use of specialist software that can simulate professional real practice in the industry. Closely linked to this, the creation of ad hoc study spaces in virtual environments for the teaching and learning of AVT is also becoming of fundamental importance.

In traditional face-to-face settings, on the one hand, b-learning provides the resources and opportunities necessary to continue the learning process outside of the classroom (e.g. independent learning and homework), with the use of online learning platforms such as Blackboard and Moodle. In e-learning settings, on the other hand, it is understood that neither the staff nor the students have a physical, on-campus classroom to attend their lessons. Instead, a virtual classroom is created to provide a suitable learning/teaching environment as well as to store the resources and applications necessary to teach.

Some AVT training centres have been able to afford the creation of PC cluster rooms or labs where students can have access to commercial software and practise during and outside of teaching hours, whereas less wealthy institutions have resorted to open-source tools, which, being free, can be made available in regular computer rooms or in the students' personal laptops. As it happens, desktop-based tools cannot be instantly transferred to virtual classrooms as they have to be previously installed locally in the participants' machines. In e-learning scenarios, trainers and students are thus forced to acquire such tools separately and to install them in their machines to then attend lessons online. Ideally, and whichever scenario is favoured, HE institutions would have to provide students and staff with home access to the tools used for instruction.

On-campus computer rooms pose major accessibility challenges as 24/7 access to campus cannot always be guaranteed. Software developers are zealous guardians of commercial software and do not always make programs available

to students off-campus. Some institutions may opt to offer remote desktop connections for those staff and students who need online access to on-campus machines but cannot travel to campus. Even when students can access said software programs through remote desktop applications, their use can be severely affected by their personal devices' performance and connectivity, particularly when working with larger materials, e.g. video files. Moreover, servers may not be sufficiently resilient, and access can be severely curtailed when the quality of the IT services provision by HE institutions falls short.

As HE institutions retrench due to the dramatic fall on education spending since the turn of the decade (Britton et al. 2019), the premise that AVT training centres require substantial investment to build dedicated PC rooms, equipped with the latest commercial software, seems to be progressively fading away. Cloud-based tools can provide full access to AVT software programs both on and off campus, in both b- and e-learning environments, in a time where the internet and web-based technologies are more widely present in HE.

Cloud tools, which have been conceived for professional practice, can inevitably become obsolete as time passes; however, updating them is reasonably straightforward as they have been developed using new cloud programming languages. They are more prone to incorporating new features that do not require re-installation and often offer customisable licenses and usage plans, thus making them sustainable alternatives for the teaching of AVT in HE, meaning they can potentially be adjusted to the needs of each training institution. Cloud ecosystems represent agile alternatives that enable trainers to provide high-quality AVT education that is both professionally oriented and cutting-edge.

On the basis of the feedback provided by the subjects who participated in the experiments, this research advocates for industry-informed, professionally oriented AVT education in which professional tools are an integral part of the teaching and, where possible, are also integrated in dedicated didactic platforms. As posited by Roales-Ruiz (2018), the potential uses of an online subtitling system in the AVT classroom are many and thus worth being explored. Moreover, further research efforts can be devoted to the creation of university proprietary,

tailor-made modular educational platforms that integrate professional tools and are equally suitable for teaching purposes. Researchers would need to make sure that such platforms remain up to industry standards, keeping abreast of the latest changes. As utopian as this approach may sound, this may well be one of the most sustainable investments AVT training centres can make, as the need to purchase access to professional cloud-based systems would be curtailed significantly.

New teaching tools and ecosystems for the learning and teaching of AVT need to be thoroughly examined by means of experimentation on user experience. The application of a data-driven AR methodology in this research was fundamental to gauge the respondents' experience on the use of professional tools operating on the cloud and enquire about their pedagogical potential. Among other things, the AR approach has propitiated the application of immediate developments to inform practice without the previous design of substantial theory.

The help of stakeholders and experiment participants involved has been essential for this empirical research to bear fruit. Collaborating with industry partners has led to a number of tangible professional results, such as the screening of subtitled films in cinemas and the improvement of OOONA Tools. For AR cycles 2 and 3, the use of real audiovisual materials for the experiments and the subsequent organisation of cinema festivals for the participants have reaffirmed the importance given to situated learning practices and socioconstructivist approaches in AVT education. When attending the experiments run together with film association CinemaBioscoop, the participants would become an integral part of a real professional activity – a cinema festival. To subtitle the films, the participants would be assigned a team project and would use a professional cloud-based subtitling tool to produce the subtitles. The learning process is therefore marked by a tangible outcome, and the participants would learn a new professional tool simultaneously. Their involvement in this didactic-professional experience was rounded out by a survey in which their feedback would be used to improve the existing tool provided by OOONA.

The overall positive attitude and motivation shown by students of modern languages and translation as well as the eagerness to collaborate expressed by both academic and industry partners have been key for the development of this four-phase AR framework. Surveys targeted trainers in the first instance, and professionals and students in two subsequent experimental sequences. The preliminary study among trainers was carried out online to reach as many respondents as possible and in different countries. Since nascent cloud tools were virtually non-existent in the HE landscapes at the time this research was initiated, the focus was put on subtitling trainers offering e-learning courses, in which chances of the trainers being aware of cloud tools were higher. The main goal of this survey was to find out the main challenges and bottlenecks encountered whilst teaching AVT online as well as the tools that were being used, the frequency of such courses, the needs suggested by the tutors, and their willingness to incorporate new cloud tools in the future, among other aspects.

The pilot study, and subsequent experiments with students, professionals and educators, were carried out in person, i.e. face-to-face teaching, to facilitate a more dynamic dialogue between the respondents and the researcher/trainer.

In the first three AR cycles, questionnaires were distributed among participants so as to collect substantial qualitative and quantitative data on the users' perceptions of cloud-based subtitling tools. Their responses have been enlightening overall; without them, the process of gaining a better understanding of the uses and applications of cloud tools in AVT education would have been much more cumbersome. The technical and qualitative analyses that have been carried out at the end of each AR cycle have been summarised in the last AR cycle, which encapsulates the changes done to the tool and the future avenues of AR work.

The experiment results unveiled in this thesis have helped to answer the main research questions proposed at the beginning of this study.

Firstly, it has been ascertained that existing professional cloud-based AVT tools do hold an enormous potential when it comes to the learning and teaching of AVT

in HE. The performance of OOONA Tools in the experiments has been deemed very good overall, and respondents have systematically remained positive about its potential use in the classroom. As a matter of fact, other HE institutions seem to now be integrating OOONA Tools in their curricula too (ooona.net/clients).

Secondly, it has been argued that cloud technologies can be integrated in AVT education in instances of situated learning as well as project- and task-based courses under the socioconstructivist umbrella. By exposing students to real, professional practice with the use of tools used in the industry (e.g. OOONA Tools), students can become savvier in cloud technologies all by improving their AVT skills.

Thirdly, user experience can inform the analysis and subsequent improvement of cloud technologies through user-focused experimentation as well as AR. There are many ways in which user experience data can be collected from tool users, one of them being surveys that follow considerable exposure to the tool. Working closely with users in real time can lead to fruitful impromptu peer-to-peer conversations, which can potentially inform the teacher-researcher's practice. The large body of data on user experience that has been analysed by means of statistical analysis on both R and SPSS has allowed for a better understanding of the benefits, shortcomings, and potential uses of cloud tools in AVT education. Along with the quantitative results, which have been helpful to confirm certain trends (e.g. OOONA Tools is easy enough to use and can be deemed suitable for the learning and teaching of subtitling), the qualitative data obtained has been key to elaborate further on particular aspects of the user experience. With the help of students, professional translators, and trainers, it has been found that the use of cloud-based AVT tools, in particular OOONA Tools, constitutes a perfectly suitable option to teach AVT practices nowadays.

Feeding user-led comments and proposals back to the partner software developers has borne fruit in a twofold manner: firstly, it has helped improve the functionality of existing tools for the benefit of active professionals who may be experiencing similar issues; secondly, it has allowed industry partner OOONA to be more conscious of would-be translators' and practitioners' needs and,

consequently, to offer greater user-led customisation in the various recurrent updates. More importantly, this has led to a more purposeful use of professional web-based tools in the context of AVT education, which was the main objective of this thesis.

The various experiments and feedback provided by the participants indicate that the tools can be further refined. The user-generated feedback on the usability of the tool has enabled the production of technical reports that were subsequently used by industry partner OOONA to fine-tune certain functions of the professional tool. One of the most salient features of this AR project is that the updates made to the professional tool have been simultaneous to the completion of each AR cycle. The tool has progressively changed its appearance and features, so each experiment constituted a new learning opportunity for both trainees and the teacher-researcher.

In light of the overall satisfaction expressed by respondents and the many new developments and improvements introduced to the new versions of OOONA Tools, this research has found several areas that call for further amelioration as evidenced by the survey results. In pedagogical terms, the management of files is cumbersome and compromises the cloud ecosystem. Moreover, feeding information back to the students also requires both the trainer and the trainee to download their work, abandon the tool and share files via external applications (e.g. email or Moodle).

As with other AR studies, research of this nature does not have a conclusive end as it can always potentially lead to more AR cycles in the future. This research thus culminates by proposing more ways forward in terms of future research and suggests the great potential a more immersive, comprehensive platforms can offer. Cloud ecosystems call for a leaner integration of learning-specific components and applications to make them more pedagogically satisfying. Cloud-based subtitling tools could be integrated reasonably easily into a dedicated educational platform by fine-tuning certain aspects such as access, interface, and work modes. An AVT educational platform prototype of this nature ought to capitalise on the professional tools and enhance the immersive

experience of learning in a cloud ecosystem by allowing trainers and students to create, complete, and assess tasks for subtitling within the same learning platform. This constitutes a long-term, far-reaching endeavour to be pursued in future research, leading to yet a new AR cycle and further collaboration with industry partners.

The intrinsic complexity of this exploratory research is at the root of some of its own limitations, such as the lack of contrastive analysis between the different experiments and the need for further triangulation. Additionally, the surveys might have benefitted from further customisation, including question branching and modification of some questions, so as to fit with the survey respondents' educational backgrounds.

This study, however, is unprecedented and, as such, it was conceived as exploratory since its inception, with the main goals of setting out to observe the state of things and aiming to collect both quantitative and qualitative data that would help to depict the role played by cloud-based technologies in AVT education. For this reason, it focuses on users' perceptions rather than on their performance and no formal assessment followed the completion of any of the subtitling tasks. A potential future research avenue could look at how the users perceive the tool and how they actually perform with it.

The mishaps that occurred in the earliest stages of this research allowed for improvements in the final stages of the AR cycles and, more concretely, materialised in a greater focus on descriptivism versus quantitative data. Any aspects that may have been overseen at some points during this research gave the opportunity to the researcher to reflect on the methods used and consider future improvements, which is intrinsic to the ethos of AR.

Amid an ever-growing demand for localised content, alongside a nascent interest for revoiced content by major media producers (Hayes, forthcoming), as well as for accessible content (Romero-Fresco 2018*b*), it is imperative that practices such as AD, dubbing, respeaking, SDH, and VO be taken into consideration too. A future educational platform should not only offer professional tools for each

AVT practice but also anticipate the latest developments in the field. In terms of translation workflows, for instance, the urgent need of training on PM of AVT productions would therefore compel software developers to include PM applications. From the teacher's perspective, ready-made activities and step-by-step guidance would give invaluable assistance to tutors who may not be fully conversant with these new environments.

Despite the didactic approach taken in this project, it has been expounded that the tools used in AVT education ought to be the same ones that are being exploited in the industry so as to closely reflect the professional reality and better prepare would-be translators that start a career in AVT. The same principle also applies when designing and developing new educational platforms of this calibre, which should remain flexible and able to integrate the latest developments in language and translation technologies.

As argued by scholars such as Baños and Díaz-Cintas (2017:322), there is "a growing consensus that reception studies are important for the sustainability of the discipline and that it is important to buttress links between the industry and academia." In this front, this doctoral research constitutes an example of the fruits AR and collaboration with industry partners can yield; in this particular research, collaborations were made with film associations and distributors, picture houses and film festival organisers, language associations and embassies, translation research networks and departments, and professional software developers, leading to a number of tangible outputs previously outlined.

This collaborative approach can indeed be applied to many other research settings, including reception studies in AVT and media accessibility to better understand the current provision of certain services as well as to identify areas of improvement in professional practice and training with the help of end users, for instance. Furthermore, process-oriented methods for empirical research – including the use of eye tracking, keylogging, and think-aloud protocols – may be used to better understand the needs of future translation trainees in reception studies. Experiments could be carried out on how the students learn by observing

their performance and identifying the main bottlenecks as well as understanding how they make progress during their studies.

With the advent of new translation technologies, particularly propelled by advances in language automation, future research on AVT education ought to carefully consider the role played by AI, ASR, MT, and MT, and devote more efforts to establishing closer links with industry partners that are constantly working on the latest technological developments. The integration of CAT tools and new technologies in AVT localisation is today an enduring reality in the industry, so it follows that scholarship focuses its attention on their study and the way of exploring them in the classroom.

Although the main focus of this research project has been on subtitling, the methodology of this thesis – including the experiment design, data collection, and analysis methods – may be extrapolated to investigate the potential of cloud-based technologies in the teaching and learning of other AVT modes, including revoicing and media accessibility as well as translation technologies.

It is expected that the results of the present doctoral research will be of help to fine-tune current models of AVT education, prompting HE institutions to embrace online language and translation technologies so as to not lag behind the many ground-breaking technological advancements introduced by the cloud turn in the last decade.

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APPENDICES

Appendix 1. Questionnaire for Preliminary Study

Online Subtitling Courses / Cloud-based Subtitling Systems

You have received this survey because you are an instructor, teacher, vocational institution director, researcher or translation professional offering an online course on subtitling, irrespective of the language combinations offered.

Your contribution to this survey will be completely anonymous, privately treated, and will not be used beyond the academic environment.

Your collaboration is much appreciated and will be fundamental to enhance research on audiovisual translation learning environments.

The survey is composed of 24 questions, split in 4 different sections. Completing this survey should by no means take you more than 10 minutes.

Thank you very much in advance for your time and collaboration.

Personal information

Q1. Please indicate your sex.

☐ Male

☐ Female

☐ Prefer not to say

☐ Other

Q2. Please indicate your age.

☐ 17-20

☐ 21-40

☐ 41-60

☐ +60

Q3. Please indicate your country of residence and your native language.

Education and Experience

Q4. Please indicate the role(s) that best define(s) you.

☐ Translator/linguist/localiser/reviser/proofreader (in-house or freelance)

☐ University teacher

☐Freelance teacher (independent courses)

☐ Other

Q5. Please indicate your highest general educational background to date (awarded by an official institution).

☐ Primary, Secondary, Short Tertiary Course or equivalent

☐ Undergraduate degree: Bachelor's degree or equivalent

☐ Postgraduate degree: Master's degree or equivalent

☐ PhD or equivalent

☐ Other

Q6. Please indicate if you have received specific training on subtitling.

☐ Yes, at university

☐ Yes, at a private institution/training school/vocational institution (independent courses)

☐ No, but I have professional experience in subtitling

☐ No, but I have learnt about subtitling through self-training/education

☐ Other

Q7. If you have selected 'Yes, at university' in the last question, please indicate if you also hold a specific postgraduate diploma on subtitling, or audiovisual translation including subtitling training.

☐ Yes

☐ No

☐ Other

Q8. Please indicate if you are currently working as a subtitler.

☐ Yes, it is my main professional activity

☐ Yes, but it is not my main professional activity

☐ No, but I have a lot of professional experience

☐ No, I do not have much professional experience

☐ Other

Online Subtitling Course

Should you have taught different online subtitling courses in the past, please answer the following questions according to the one you consider most relevant for this survey, or the one running at the present time.

Q9. Please indicate the institution which hosts your course on subtitling.

☐ University or any other academic institution (either public or private)

☐ Public institution (government-related or publicly funded association)

☐ Private institution (private school, association or group)

☐ Other

Q10. Please indicate the average number of students who participate in your course at each session.

Q11. Please indicate if the online subtitling course is language-specific (e.g. EN-ES, EN-FR-ES, EN-EL-PL-PT).

☐ Yes (please indicate the language combinations offered in the below text box)

☐ No

Q12. Please indicate the number of hours of the online course, including self-learning hours.

Q13. Please indicate the average number of sessions you offer each year. If your course is no longer active, please type '0' [zero].

Q14. Please indicate if your students are given feedback forms by the end of the course.

☐ Yes

☐ No

☐ Other

Q15. Please indicate if the subtitling software you use for your course is paid for or free. Please indicate which in the below text box.

☐ Freeware

☐ Private software (paid for)

☐ Other

Q16. Please indicate if you reckon subtitling online courses satisfy the educational needs of subtitlers-to-be.

1 2 3 4 5

Not at all Absolutely

Q17. Please indicate whether, in your opinion, translators are prepared enough to carry out professional subtitling projects after having done an online subtitling course, or not. Please feel free to give your opinion about this in the text box below.

☐ Yes

☐ No

☐ Prefer not to say

Cloud-based subtitling tools

Q18. Does your subtitling course include any of the following?

☐ Cloud-based learning platforms (please indicate which in the below text box)

☐ Online forums

☐ Online tutorials

☐ Face-to-face lessons

☐ Face-to-face tutorials

☐ Live chat

☐ Other

Q19. Do you use any cloud-based subtitling platform in your subtitling course?

☐ Yes (please indicate what platforms below)

☐ No

Q20. If you DO use a cloud-based subtitling platform in your course, please indicate your satisfaction with cloud-based subtitling as an educational tool.

1 2 3 4 5

N/A Dissatisfied Completely satisfied

Q21. If you currently do NOT use cloud-based subtitling platforms within the course, please indicate if you would consider using any in the future for educational purposes.

☐ Yes

☐ No

☐ Other

Q22. Do you know the cloud-based subtitling platform Online Captions and Subtitles Toolkit (ooona.net) developed by OOONA?

☐ Yes

☐ No

☐ Other

Q23. Please give your opinion about using cloud-based subtitling platforms in translator training.

Thank you for your collaboration!

Q24. If you would be interested in being interviewed on this topic, or if you would like to receive a copy of this piece of research after being published, please indicate your email.

Appendix 2. Workshop Booklet Sample

N.B: This is a sample from one of the booklets used in an experiment. Each workshop required the production of a customised booklet, which also reflected the latest updates of the tools.

Warming up

1. Using the following link (https://answergarden.ch/934720), share words, phrases or any other terms that, in your opinion, relate to the craft of subtitling.

2. You will be subtitling *These Dirty* Words (https://www.youtube.com/watch?v=CR-F08ilA-A). Watch the whole clip with no subtitles and then answer the following questions in pairs:

   a. What is the clip about?
   b. What are the characters like? How do they speak? Will this affect your subtitles?
   c. Are there particular linguistic challenges that may constitute translation difficulties?

3. Open **OOONA OCTS**: https://ooona.ooonatools.tv/. You will find detailed information on how to use the platform in the step-by-step exercises below.

4. Familiarise yourself with the reduction/condensation and segmentation conventions below.

   Subtitles need to be reduced in terms of number of characters per line (max. allowed is 39–42 per line, 78–84 per subtitle). As a rule of thumb, the less characters a subtitle contains, the more legible it will be for the audience. The minimum subtitle duration is 1 second; the maximum subtitle duration for one-liners is 4 seconds (and 6 seconds for two-liners). Bear in mind that the most important information is conveyed in the visuals. Therefore, please: **(1) get rid of information that is not relevant for the comprehension of the clip; and (2) reformulate relevant information to convey meaning in a more condensed form.**

What you can do:

- ✓ **Simplify verbal periphrases**. Lengthy verbal periphrases are common in colloquial language, but they may be replaced with simpler verb forms.
- ✓ **Generalise enumerations**. Reduce repetitions or elements that are not relevant or essential to understand the plot.
- ✓ Use shorter **near-synonyms or equivalent expressions**. However, you had better not compromise translation equivalence, coherence or register.
- ✓ Pay attention to the use of many deictic elements (e.g. 'his', 'there', 'me', 'ours') because they often require grater cognitive processing from the audience. Use them with caution.
- ✓ Use two **hyphens** (-) to indicate that there are two interventions in the same subtitle from two different characters instead of producing two different subtitles.

How to break lines

- Never split words using hyphens.

They say that reading Anthropology
in Cambridge is most exciting.

✔

They say that reading Anthro-
pology in Cambridge is most exciting.

✗

- When two different sentences appear in the same subtitle, use two lines whenever possible.

I want to be a policeman.
A good one.

✔

I want to be a policeman. A good one.

✗

- When there are two interventions in the same subtitle, use two lines and place the interventions in chronological order using hyphens to distinguish between them.

- That's what they say, right?
- Right you are, mate.

✔

- That's what they say, right? - Right you are,
mate.

✗

- Split compound sentences (be they coordinated or subordinated) in two lines right before the conjunction, locution or relative pronoun, which should be placed at the beginning of the second line.

The dean expelled him
after he made his speech.

✔

The dean expelled him after
he made his speech.

✗

- Simple sentences will often show the subject in the first line and the predicate on the second line, especially when the first line exceeds the character limit.

The President of the US
will be meeting the Queen tomorrow.

✔

The President of the US will be meeting
the Queen tomorrow.

✗

- Never split compound verbs (e.g. auxiliary, past participle, gerund).

He is the man
that you are looking for.

✔

He's the man that you are
looking for.

✗

- Never separate a complement and the verb abruptly. Keep the whole predicate together whenever possible.

When you find him,
take his money and let him go.

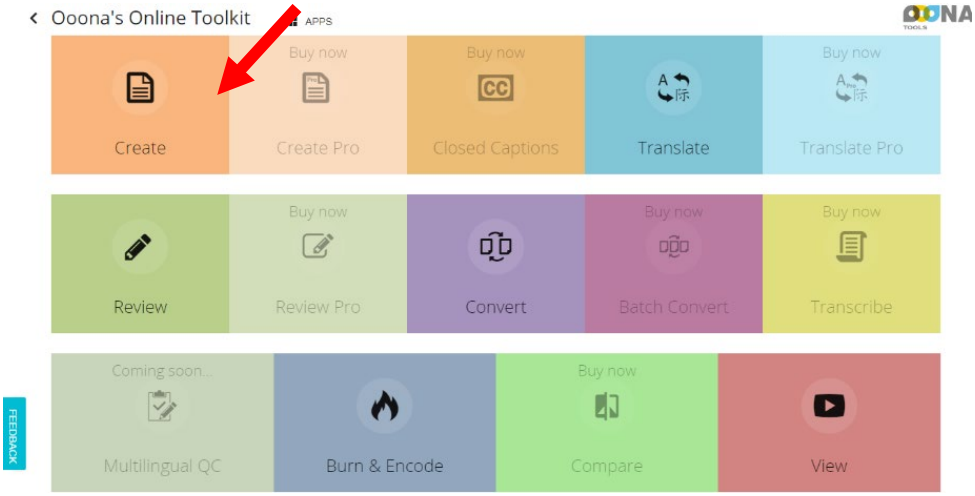
✔

When you find him, take
his money and let him go.

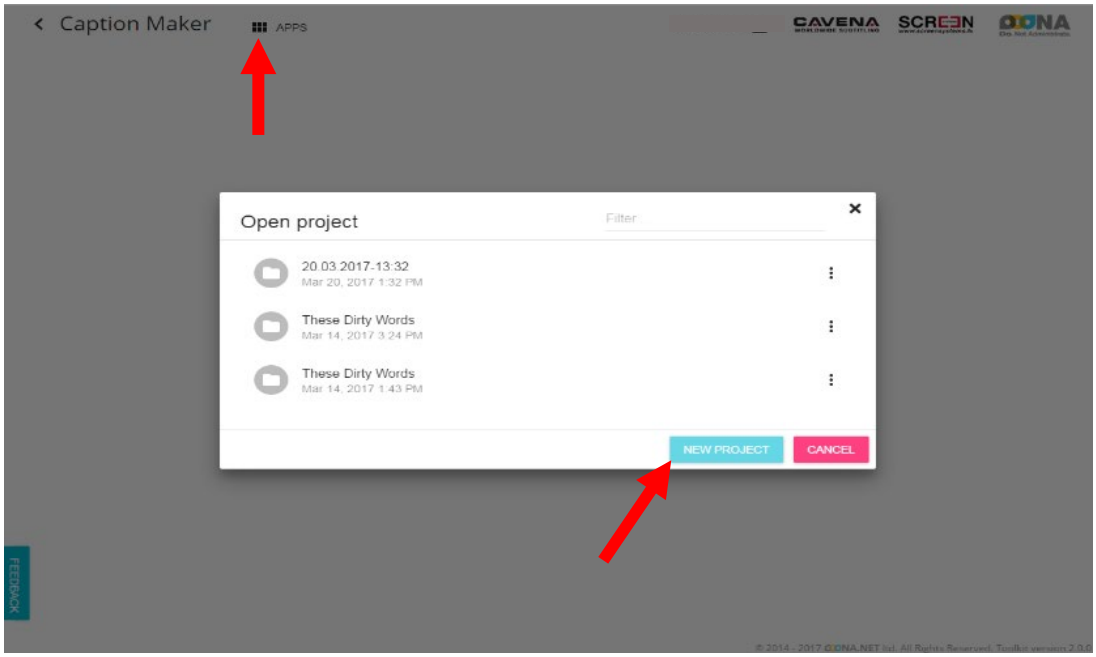
✗

TASK 1: How to use the Create tool

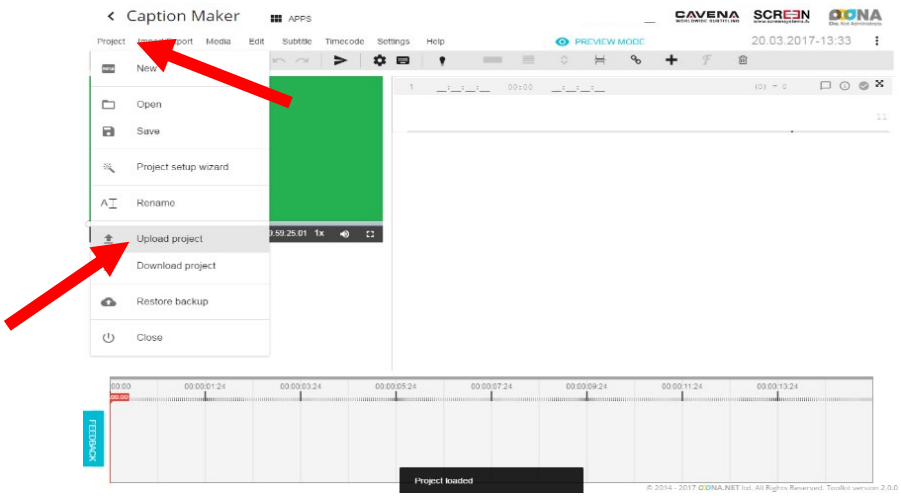
1. Open the tool: https://ooona.ooonatools.tv/. Enter your credentials and access the main dashboard.



2. Click on the app **Create** and then New Project. (!) Check you are in Caption Maker.



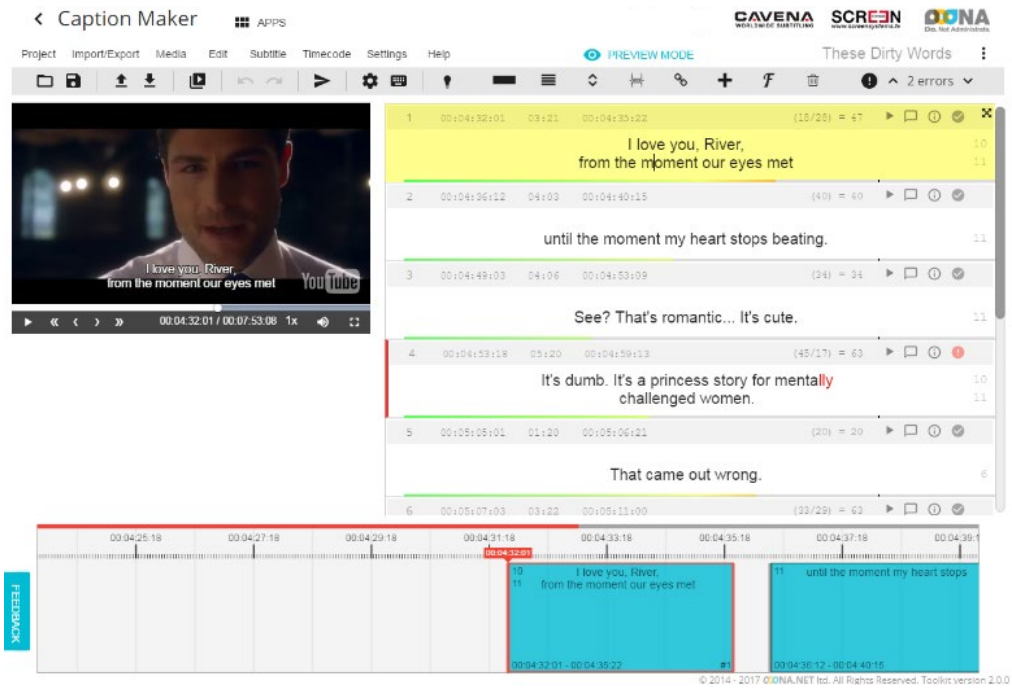
3. Click on **Project** and then on **Upload Project**. (!) Should there be any uploading errors, please double check you are in Create Tool.



4. Upload the .json file that you will find in the folder named ‘Exercise 1’.

Exercise 1.json

5. Ten subtitles will be shown on the screen. This is the view you get when you are producing subtitles (i.e. spotting/timing/cueing). These have already been produced for you. Take a look and familiarise yourself with the interface.



6. On **Edit Mode**, use the hotkeys in the box below, and try to spot the technical and linguistic errors in the subtitles using the points covered in Part 1 and the below table.

SUBTITLE	CHALLENGE NATURE
1, 2	Off narration
2	Timing
3, 4	Dialogue and punctuation
4	Character limitation
5	Position
6	Timing
8	Character limitation
9	Position
10	Timing

7. Once you have amended the subtitles, try to create a few more subtitles from scratch, following the same subtitle template. Use the shortcuts provided on the next page to customise the subtitles.

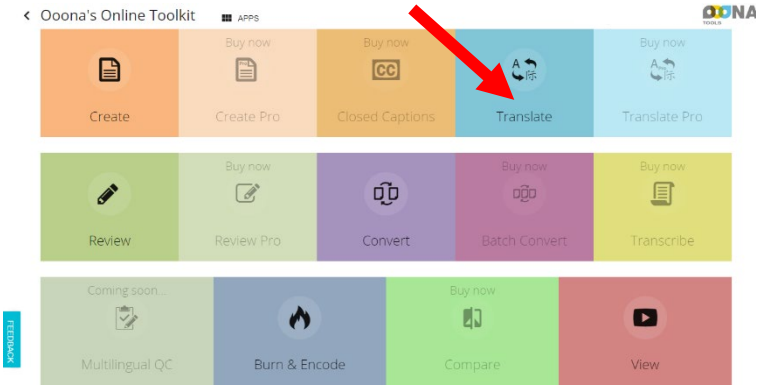
8. On **Edit Mode**, use the hotkeys in the box below to play the video and adapt subtitles if necessary.

VIDEO PLAYER	SETTING TIMECODES
Go to beginning: ctrl+home	Clear IN TC: ctrl+shift+home
Go to end: ctrl+end	Clear OUT TC: ctrl+shift+end
Jump to current in cue: alt+shift+i	Clear TC: ctrl+divide
Jump to current out cue: alt+shift+o	Clear timecodes: f6
Play/Pause video: ctrl+numpad5	**Set IN TC: alt+home**
Step -1 frames: ctrl+numpad7	Set IN/OUT TC: ctrl+enter
Step -1 minutes: alt+shift+left	**Set OUT TC: alt+end**
Step -1 seconds: ctrl+numpad4	Move current cue +1 frame: ctrl+shift+add
Step 1 frame: ctrl+numpad9	Move current cue -1 frame: ctrl+shift+subtract
Step 1 minute: alt+shift+right	
Step 1 second: numpad6	
Play current subtitle: f8	

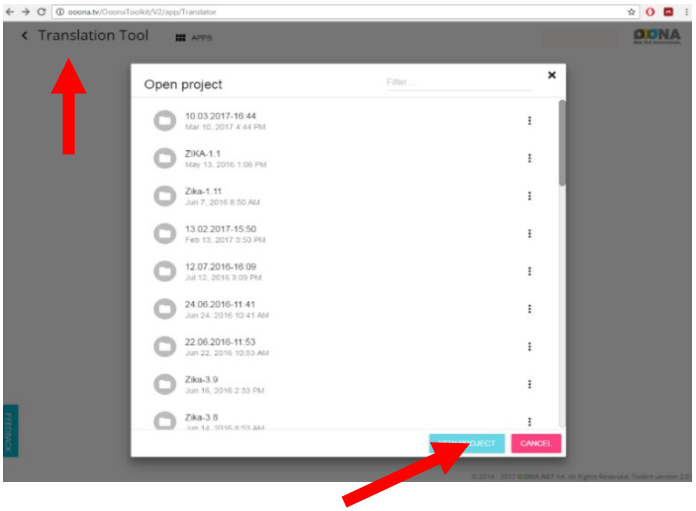
TEXT EDITING	SUBTITLE EDITING
Open Go To: ctrl+g **Redo: ctrl+y** **Undo: ctrl+z** **Open Find: ctrl+f** **Open Replace: ctrl+h**	Delete the current subtitle: ctrl+f2 **Jump to next subtitle: pagedown** **Jump to previous subtitle: pageup** Merge down: ctrl+backspace Merge up: shift+backspace Move 1 line down: ctrl+shift+down Move 1 line up: ctrl+shift+up Move first word line up: ctrl+up Move last word line down: ctrl+down Split the current subtitle: alt+ctrl+enter
POSITION / JUSTIFICATION	
Align to bottom: ctrl+shift+b Align to top: ctrl+shift+t Align vertically to middle: ctrl+shift+m Insert music symbol: alt+` Set line align to center: alt+shift+c Set line align to left: alt+shift+l Set line align to right: alt+shift+r	

TASK 2: Translating subtitle templates

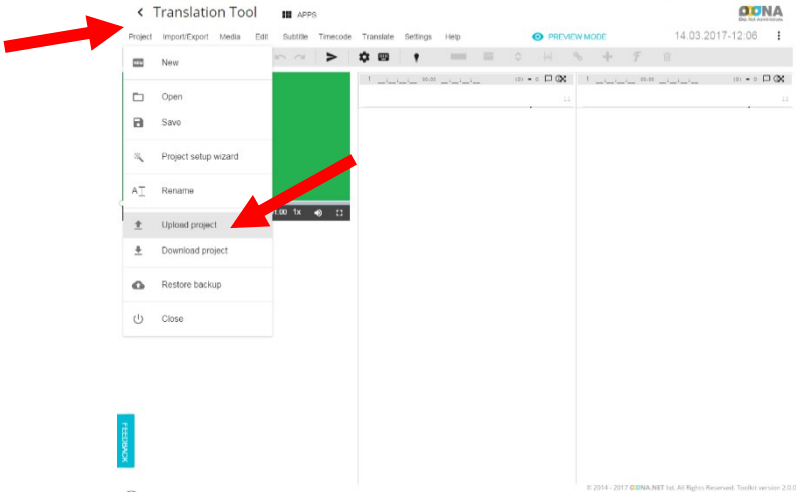
1. Open the **tool**: https://ooona.ooonatools.tv/. Enter your credentials and access the main dashboard.



1. Click on the app **Translate** and then New Project.



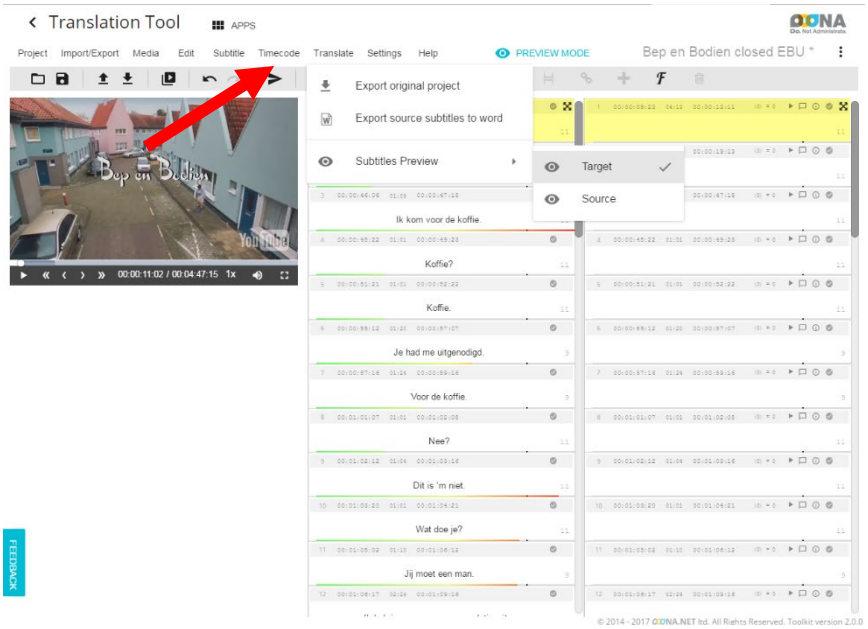
2. Click on **Project** and then on **Upload Project**. (!) Should there be any uploading errors, please double check you are in Translation Tool.



3. Upload the .json file you will find in the folder named ‘Exercise 2’.

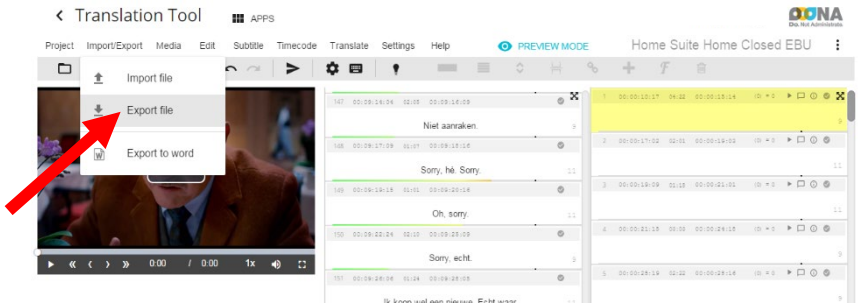
Exercise 2.json

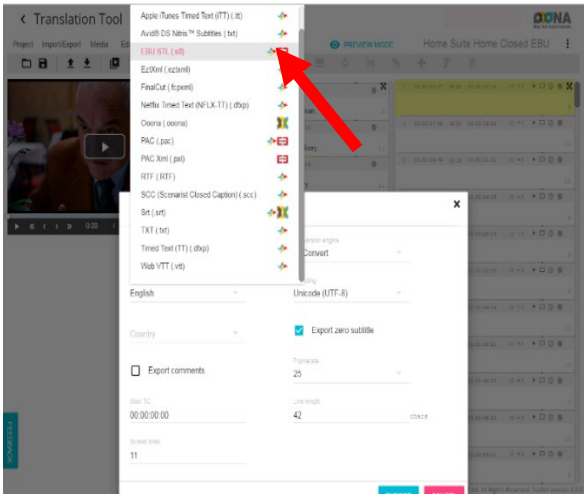
4. Decide whether you want subtitles in the ST or the TT to appear on screen. **Translate > Subtitle Preview**.



5. Translate the subtitles in the corresponding subtitle boxes at the right-hand side of the screen.

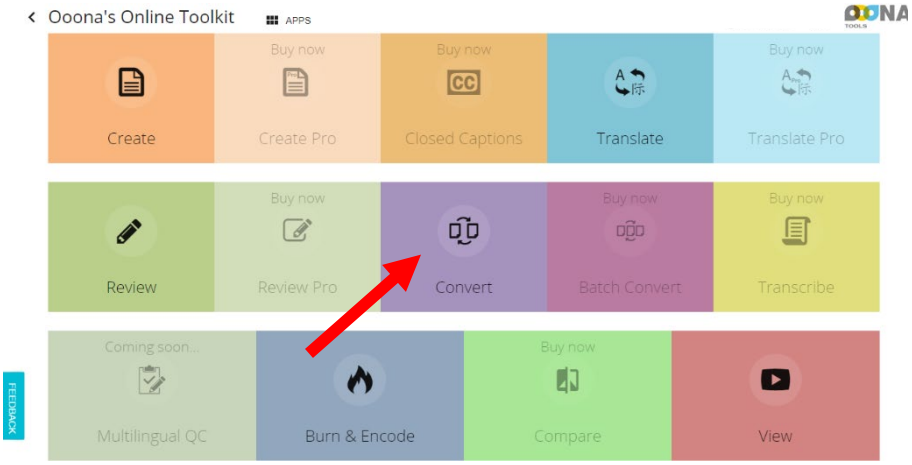
6. Once you finish your translation, export it in any format **(**e.g. **.stl, .srt, .ooona). Import/Export > Export file**. You can use any conversion tool.



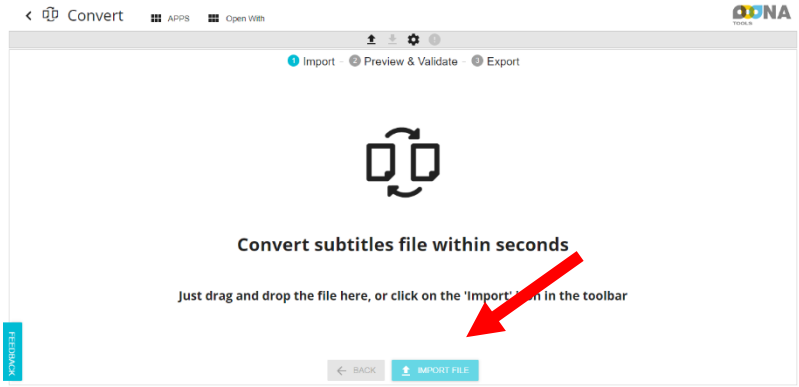


TASK 3: Converting subtitle files

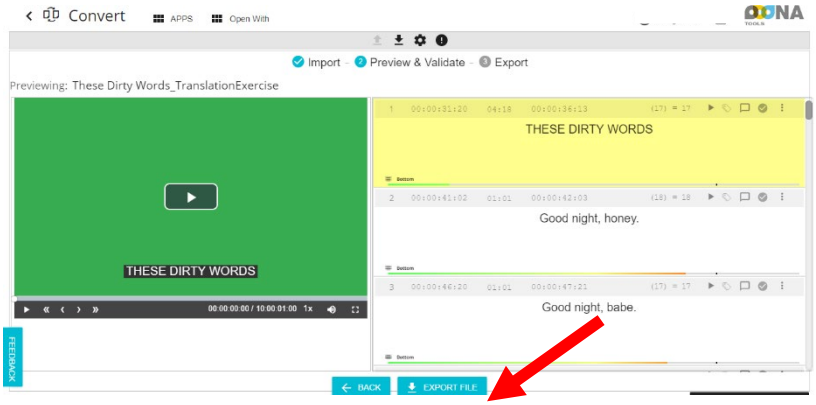
1. Open the **tool**: https://ooona.ooonatools.tv/. Enter your credentials and access the main dashboard.



2. Open **Convert** tool and then **import** the subtitle file that you have produced and exported in Exercise 2.



3. **Preview** your subtitles and then **export** them in any format of your like. Then try to import it again in the platform (e.g. Create or Translate apps).



Appendix 3. Questionnaire for Pilot Experiment

Dutch Student Day Workshop / OOONA's OCST

Dear participant,

Welcome to the survey! Cinema Bioscoop, UCL Dutch Department and UCL Centre for Translation Studies would much appreciate it if you could complete this evaluation form. Please complete it right after the hands-on subtitling workshop held on the 23rd March 2017.

Please also note that your contribution will be completely anonymous, privately treated, and used for academic purposes only.

Thank you very much in advance for your time and collaboration.

Personal information and academic background

Q1. Please indicate your sex.

☐ Male

☐ Female

☐ Prefer not to say

☐ Other

Q2. Please indicate your age.

☐ <20

☐ 21–25

☐ >26

☐ Prefer not to say

Q3. Please indicate your place of origin.

☐ Belgium

☐ England

☐ Ireland

☐ Northern Ireland

☐ Scotland

☐ The Netherlands

☐ Wales

☐ Other

Q4. Please indicate your native language.

☐ Arabic

☐ Chinese

☐ Dutch/Flemish

☐ English

☐ French

☐ German

☐ Italian

☐ Japanese

☐ Portuguese

☐ Spanish

☐ Other

Q5. Please indicate any other languages in which you are fluent.

☐ Arabic

☐ Chinese

☐ Dutch/Flemish

☐ English

☐ French

☐ German

☐ Italian

☐ Japanese

☐ Portuguese

☐ Spanish

☐ Other

Q6. Please indicate your current level of studies.

☐ Undergraduate

☐ Postgraduate

☐ PhD

☐ Other

Q7. Please indicate the name of your current academic institution.

☐ University College London

☐ University of Leicester

☐ University of Newcastle

☐ University of Nottingham

☐ University of Sheffield

☐ Other

Q8. Please indicate if you have taken any translation-specific courses before attending the workshop.

☐ Yes

☐ No

Q9. Please indicate if you have taken any subtitling-specific courses before attending the workshop.

☐ Yes

☐ No

Workshop configuration and format

Q10. The workshop was difficult...

1 2 3 4 5

N/A Strongly disagree Completely agree

Q11. The workshop was interesting...

1 2 3 4 5

N/A Strongly disagree Completely agree

Q12. The theoretical aspects covered throughout the workshop were adequate and relevant...

1 2 3 4 5

N/A Strongly disagree Completely agree

Q13. The hands-on exercises were useful...

1 2 3 4 5

N/A Strongly disagree Completely agree

Q14. The use of Moodle and cloud-based learning tools was easy...

1 2 3 4 5

N/A Strongly disagree Completely agree

Q15. The use of Moodle and cloud-based learning tools was useful...

1 2 3 4 5

N/A Strongly disagree Completely agree

Q16. The materials, including the booklet and easy guides, were of a good quality...

1 2 3 4 5

N/A Strongly disagree Completely agree

Q17. After the workshop, I have a better understanding of what subtitling entails...

1 2 3 4 5

N/A Strongly disagree Completely agree

Q18. After the workshop, I am interested in learning more about subtitling...

1 2 3 4 5

N/A Strongly disagree Completely agree

Q19. Have your say about the workshop.

(*You can comment on the materials, the easy guides, the clips, the teaching approach, the exercises, the learning environment, etc. Your insights will be very valuable for the design of similar workshops in the future.)

Usability of OOONA's cloud-based subtitling tool

Q20. Do you like OOONA's Online Captions and Subtitles Toolkit V2.0?

1 2 3 4 5

N/A Not at all Very much

Q21. Using the Create tool (i.e. checking English subtitles) in Exercise 1 was...

1 2 3 4 5

N/A Very easy Very difficult

Q22. Using the Translate tool (i.e. translating the Dutch template into English) in Exercise 2 was...

1 2 3 4 5

N/A Very easy Very difficult

Q23. OOONA's Online Captions and Subtitles Toolkit is an effective tool to learn/teach how to subtitle...

1 2 3 4 5

N/A Strongly disagree Completely agree

Q24. I would like use OOONA's Online Captions and Subtitles Toolkit in the future...

1 2 3 4 5

N/A Strongly disagree Completely agree

Q25. What have you enjoyed the most of OOONA's Online Captions and Subtitles Toolkit?

Q26. What have you enjoyed the least of OOONA's Online Captions and Subtitles Toolkit?

Q27. Feel free to add any other comments about OOONA's Online Captions and Subtitles Toolkit.

Workshop organisation and content

Q28. The films chosen for this subtitle workshop were suitable…

1 2 3 4 5

N/A Strongly disagree Completely agree

Q29. The contents of this subtitling workshop were well-organised…

1 2 3 4 5

N/A Strongly disagree Completely agree

Q30. The workshop was organised so that all the students could actively participate.

1 2 3 4 5

N/A Strongly disagree Completely agree

Q31. Feel free to add further feedback about how the workshop has been organised by Cinema Bioscoop.

Wrapping up

Q32. For the sake of completeness, feel free to comment on anything that may have been left behind. Your opinion is most welcome!

Thanks a lot for your participation! We really hope you have enjoyed the workshop. See you again very soon!

Appendix 4. Questionnaire for Study Experiments

Cloud-based Translation Systems

Your contribution to this survey will be completely anonymous, privately treated, and will not be used beyond the academic environment.

Your collaboration is much appreciated and will be fundamental to enhance research on audiovisual translation learning environments.

The survey is composed of 16 questions, split in 3 different sections.

Thank you very much in advance for your time and collaboration.

Personal information

Q1. Please indicate your sex.

☐ Male

☐ Female

☐ Prefer not to say

☐ Other

Q2. Please indicate your age.

☐ <17

☐ 17–20

☐ 21–40

☐ 41–60

☐ >60

☐ Prefer not to say

Q3. Please indicate your country of residence and your native language.

Education and experience

Q4. Please indicate the role(s) that best define(s) you.

☐ Translator/linguist/localiser/reviser/proofreader (in-house or freelancer)

☐ Student (modern languages/translation studies)

☐ Student (areas other than above)

☐ University teacher/tutor

☐ Teacher (secondary/independent courses/trainer)

☐ Other

Q5. Please indicate your highest general educational background to date.

☐ Primary, Secondary, Short Tertiary Course or equivalent

☐ Undergraduate degree: Bachelor's degree or equivalent

☐ Postgraduate degree: Master's degree or equivalent

☐ PhD or equivalent

☐ Other

Q6. Please indicate if you have received specific training on subtitling.

☐ Yes, at university

☐ Yes, at a private institution/training school/vocational institution (independent courses)

☐ No, but I have learnt about subtitling through self-training/education

☐ No, but I have professional experience in subtitling

☐ Other

Q7. Please indicate if you have ever done an audiovisual translation-related, or more specifically subtitling-related, course on subtitling.

☐ Yes (please indicate what applications/software you used below)

☐ No

Q8. Please indicate if you currently work as a translator.

☐ Yes, it is my main professional activity

☐ Yes, but it is not my main professional activity

☐ No, but I have a lot of professional experience

☐ No, I do not have much professional experience

☐ Other

Use of cloud-based platforms

Q9. Please indicate if you had used cloud-based translation platforms before attending this course.

☐ Yes (please indicate which below)

☐ No

Q10. If you have used cloud-based translation platforms before, please indicate your satisfaction with their performance.

1 2 3 4 5

N/A Completely dissatisfied Completely satisfied

Q11. If you have never used cloud-based translation platforms before, please indicate if you would consider using any in the future.

☐ Yes

☐ No

☐ Other

Q12. Please indicate if, before attending this course, you already knew OOONA's Online Captions and Subtitles Toolkit.

☐ Yes

☐ No

☐ Other

Q13. Please indicate your level of satisfaction with OOONA’s Online Captions and Subtitles Toolkit.

1 2 3 4 5

N/A Completely dissatisfied Completely satisfied

Q14. Please give your opinion about the Online Captions and Subtitles Toolkit.

Q15. Please indicate if you think that OOONA's Online Captions and Subtitles Toolkit is useful for translation/subtitling training purposes.

☐ Yes

☐ Maybe

☐ No

☐ Other

Q16. For the sake of completeness, please use this section to include your opinion on cloud-based subtitling and translator training.

Appendix 5. Correlation Tables for Pilot and Study Experiments

Significance levels		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q20	Q21	Q22	Q23	Q24	Q28	Q29	Q30
Q1	Sig. (2-tailed)		0.777	0.564	0.176	0.073*	0.013	0.440	0.371	0.512	0.221	0.999	0.381	0.042*	0.981	0.577	0.532	0.317	0.053	0.013*	0.090	0.350	0.004*	0.003**	0.283	0.064	0.774
Q2	Sig. (2-tailed)			0.926	0.860	0.007**	0.023	0.151	0.000**	0.000**	0.199	0.016*	0.241	0.571	0.020*	0.120	0.648	0.001**	0.598		0.243	0.648	0.942	0.981	0.412	0.286	0.106
Q3	Sig. (2-tailed)				0.000*	0.407	0.615	0.064*	0.404	0.487	0.805	0.075	0.825	0.973	0.721	0.772	0.875	0.625	0.327	0.329	0.389	0.868	0.132	0.537	0.965	0.993	0.768
Q4	Sig. (2-tailed)					0.654	0.412	0.045	0.912	0.915	0.292	0.140	0.951	0.470	0.071	0.395	0.029	0.700	0.068	0.999	0.144	0.301	0.172	0.445	0.280	0.859	0.167
Q5	Sig. (2-tailed)						0.003**	0.846	0.002**	0.227	0.216	0.416	0.473	0.514	0.149	0.541	0.606	0.008**	0.436	0.017**	0.427	0.815	0.489	0.200	0.023*	0.612	0.658
Q6	Sig. (2-tailed)							0.297	0.189	0.034	0.142	0.173	0.137	0.059	0.028	0.027	0.101	0.842	0.284	0.008**	0.628	0.895	0.225	0.609	0.393	0.232	0.945
Q7	Sig. (2-tailed)								0.723	0.679	0.139	0.983	0.147	0.455	0.139	0.906	0.154	0.712	0.971	0.063	0.175	0.792	0.900	0.775	0.927	0.379	0.234
Q8	Sig. (2-tailed)									0.006	0.096	0.016*	0.171	0.089	0.020	0.049	0.580	0.020*	0.909	0.739	0.076	0.342	0.275	0.431		0.286	0.247
Q9	Sig. (2-tailed)										0.419	0.523	0.804	0.448	0.046	0.205	0.827	0.001**	0.428	0.526	0.208	0.851	0.872	0.298	0.206	0.195	0.318
Q10	Sig. (2-tailed)											0.043*	0.082	0.392	0.865	0.495	0.082	0.051*	0.328	0.906	0.301	0.210	0.746	0.805	0.441	0.062*	0.682
Q11	Sig. (2-tailed)												0.000**	0.056	0.994	0.084	0.082	0.000**	0.000**	0.734	0.192	0.742	0.060*	0.025*	0.542	0.001**	0.011*
Q12	Sig. (2-tailed)													0.055	0.201	0.017*	0.100	0.006**	0.014*	0.463	0.014*	0.476	0.794	0.729	0.289	0.000**	0.053
Q13	Sig. (2-tailed)														0.051*	0.000**	0.003**	0.001*	0.000**	0.156	0.817	0.314	0.001**	0.001**	0.198	0.162	0.009**
Q14	Sig. (2-tailed)															0.000**	0.000**	0.523	0.081	0.967	0.903	0.037	0.187	0.537	0.870	0.335	0.640
Q15	Sig. (2-tailed)																0.000**	0.038*	0.005*	0.294	0.642	0.619	0.062	0.086	0.262	0.015**	0.169
Q16	Sig. (2-tailed)																	0.008	0.000**	0.398	0.880	0.156	0.020*	0.031	0.574	0.040*	0.015*
Q17	Sig. (2-tailed)																		0.000**	0.190	0.153	0.575	0.079	0.005**	0.155	0.149**	0.011
Q18	Sig. (2-tailed)																			0.302	0.532	0.065	0.009*	0.000**	0.239	0.072	0.040
Q20	Sig. (2-tailed)																				0.823	0.206	0.001**	0.000**	0.006**	0.672	0.007*
Q21	Sig. (2-tailed)																					0.050**	0.941	0.834	0.971	0.091	0.533
Q22	Sig. (2-tailed)																						0.192	0.229	0.539	0.064	0.999
Q23	Sig. (2-tailed)																							0.000**	0.144	0.373	0.094

Q24	Sig. (2-tailed)																								0.081	0.488	0.007*
Q28	Sig. (2-tailed)																									0.890	0.455
Q29	Sig. (2-tailed)																										0.023*
Q30	Sig. (2-tailed)																										

Pilot study correlation table with significance levels (two-tailed test)

	Significance levels	Q1	Q2	Q3a	Q3b	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q15
Exp.Gr.	Sig. (2-tailed)	0.717	0.000**	0.163	0.001**	0.039*	0.128	0.000**	0.000**	0.201	0.946	0.984	0.028*	0.400	0.065	0.014*
Q1	Sig. (2-tailed)		0.622	0.233	0.121	0.161	0.723	0.883	0.087	0.154	0.380	0.616	0.237	0.228	0.073	0.406
Q2	Sig. (2-tailed)			0.030*	0.129	0.000**	0.000**	0.000	0.005**	0.000**	0.173	0.104	0.016*	0.146	0.170	0.705
Q3a	Sig. (2-tailed)				0.025*	0.324	0.048*	0.600	0.412	0.768	0.440	0.422	0.430	0.205	0.249	0.297
Q3b	Sig. (2-tailed)					0.051	0.378	0.008**	0.453	0.213	0.339	0.432	0.965	0.611	0.814	0.048*
Q4	Sig. (2-tailed)						0.000**	0.098	0.074	0.000**	0.877	0.966	0.907	0.000**	0.829	0.025*
Q5	Sig. (2-tailed)							0.000**	0.102	0.000**	0.231	0.154	0.455	0.010*	0.742	0.744
Q6	Sig. (2-tailed)								0.000**	0.018*	0.002**	0.001**	0.004**	0.905	0.222	0.110
Q7	Sig. (2-tailed)									0.024*	0.103	0.192	0.848	0.857	0.197	0.355
Q8	Sig. (2-tailed)										0.000**	0.000	0.072	0.237	0.863	0.969
Q9	Sig. (2-tailed)											0.000**	0.000**	0.012**	0.536	0.545
Q10	Sig. (2-tailed)												0.000**	0.011*	0.940	0.336
Q11	Sig. (2-tailed)													0.915	0.005**	0.000**
Q12	Sig. (2-tailed)														0.924	0.221
Q13	Sig. (2-tailed)															0.000**
Q15	Sig. (2-tailed)															

Study experiments correlation table with significance levels (two-tailed test)